



# FOOD SECURITY SURVEY OF HIGHER EDUCATION STUDENTS IN UTAH

**2021 STATEWIDE REPORT**



# TABLE OF CONTENTS

Acknowledgements .....	2
Project Introduction .....	4
Introduction to Food Insecurity.....	5
Key Findings.....	6
Infographic .....	7
Extent and Severity of Food Insecurity.....	8
USDA Household Survey Question Breakdown .....	9
Contributing Factors to Food Insecurity and Its Impact.....	11
Housing.....	11
Other Basic Needs.....	14
Health.....	15
Social and Emotional Health.....	17
Employment, Income, and Financial Aid .....	19
Academics.....	22
Coping Mechanisms.....	23
A Deeper Look: Rural and Urban Students.....	24
A Deeper Look: Gender.....	25
A Deeper Look: First-Generation Students.....	26
A Deeper Look: Students of Color .....	27
A Deeper Look: Technical College and University Students .....	28
Appendix A: Demographics .....	29
Appendix B: Survey Methodology.....	31
Sample, Survey Distribution, and Incentives.....	33
Limitations and Suggestions .....	34
Appendix C: References.....	35

## ACKNOWLEDGEMENTS

The *Food Security Survey of Higher Education Students in Utah* report would not have been possible without the collaboration of all Utah's public higher education institutions and various non-profit organizations. Guidance and expertise was provided by Melissa Hall, Ph.D., Senior Community Engagement Researcher at the Center for Hope; Alex Cragun, Food Security Advocate at Utahns Against Hunger; Yesenia Quintana, M.Ed., Evaluation and Community Research Supervisor at the Community Research Extension at Weber State University; and Katharine French-Fuller, Ph.D., Director of Research at the Community Research Extension at Weber State University. Authors include Yesenia Quintana, Katharine French-Fuller, Allyse Anderson, and Kary Makela. Special appreciation goes to Cassandra Backman, Alexis Bucknam, and Jessica Miller for their contributions and assistance on various aspects of this project.

The survey design was a collaborative multi-institution effort from participating schools. Committee members include Melissa Hall (Center for Hope), Yesenia Quintana (Weber State University), Alexis Bucknam (United Way of Salt Lake), Amber Hendrickson (Utah Valley University), Cassandra Backman (Weber State University), Alex Cragun (Utahns Against Hunger), Katharine French-Fuller (Weber State University), Mike Braak (Salt Lake Community College), Nelda Ault (Utah State University), Kara Bachman-Einfeldt (Utah State University), Sarah Elizabeth Levitt (University of Utah), Christina Turpin (Huntsman Cancer Institute), Elizabeth Duszak (University of Utah), and Maria Caballero (Davis Technical College). The committee met regularly and provided input and knowledge from their respective fields. The researchers are especially thankful to committee members for their time and expertise on a fast-paced and sensitive project.

Support and collaboration within each USHE institution was critical for success. The chief student affairs officers at each institution provided essential support that resulted in project fruition. Additionally, we thank the following individuals for their assistance and support: Michelle Welker (Bridgerland Technical College); Spencer Kimball (Davis Technical College); Tom Picklesimer and Andrea Bringhurst (Dixie State University); Camille Lyman (Dixie Technical College); David Rees (Mountainland Technical College); Monica Schwenk (Ogden-Weber Technical College); Mike Braak, Mike Nguyen, and Jessie Winitzkey-Stephens (Salt Lake Community College); Beckie Hermansen (Snow College); James Mullenau (Southwest Technical College); Pam Brannin (Southern Utah University); Patricia Walker and Misty Roberts (Tooele Technical College); Michiel Bostick (Uintah Basin Technical College); Elizabeth Duszak and Jake Lemon (University of Utah); Michael Torrens, James Morales, Nicole Vouvalis, and Suzanne Thorpe (Utah State University); Taylor Lovell and Alexis Palmer (Utah Valley University); and Heather Chapman (Weber State University).

This report is a project of:



**Preferred Citation:**

Quintana, Y., French-Fuller, K., Anderson, A., & Makela, K. (2022). *Food Security Survey of Higher Education Students in Utah, 2021 Statewide Report*. Weber State University: Center for Community Engaged Learning - Community Research Extension.

## **PROJECT INTRODUCTION**

Funding for this project was made possible by the Robert Wood Johnson Foundation in partnership with the American Cancer Society's (ACS) health equity work. This project proposal was developed by Gagan Kaur, former ACS employee, and Dr. Melissa Yack Hall, Senior Community Engagement Researcher at the Center for Health Outcomes and Population Equity at Huntsman Cancer Institute and the University of Utah. After receiving notice of funding, the co-chairs, along with Morgan Marietti, Health Systems Manager for ACS, narrowed down the focus to food security on Utah's postsecondary campuses. The co-chairs assembled a project team, which included Alex Cragun, Food Security Advocate for Utahns Against Hunger (UAH) and Alexis Bucknam, Senior Network Director for United Way of Salt Lake. The project team participated in multiple planning and learning sessions sponsored by ACS's health equity team, and conducted various meetings with organizations and individuals working on food security across the state.

During these meetings and through research, the project team realized there was a lack of baseline data in regards to basic needs of postsecondary students. The project team, along with several of the organizations and individuals they met with over the course of this project, conducted a statewide survey to help collect baseline data for individual campuses and the state of Utah collectively. Along with the survey, the project team also arranged for UAH to host two workshops with the Basic Needs student group that meets regularly.

The project team approached the Utah Senior Student Affairs Officers (SSAO) group to obtain interest in and approval to conduct the survey. The SSAO group provided feedback and approval to move the project forward. The project team then approached Weber State University's Community Research Extension (CRE) leadership, including Dr. Katharine French-Fuller and Yesenia Quintana, about contracting their services to develop, conduct and analyze a comprehensive state-wide survey of the 16 Utah System of Higher Education (USHE) campuses, along with creating final reports.

The survey was developed in alignment with other resources to ensure the questions were complementary to other basic needs work being done across Utah and included questions and information from the USDA Household Food Security Survey and the PRAPARE assessment. The survey was developed and reviewed by the CRE and a task force of representatives from some of the campuses. It was piloted with students from some of the campuses.

The survey was conducted over six weeks in the fall semester of 2021, during the ongoing COVID-19 global pandemic. This final report was shared with the campuses, project team members and USHE in February 2022. Each campus also received an individual campus or collective Technical College report as well.

# INTRODUCTION TO FOOD INSECURITY

Nationally, food insecurity amongst higher education students has been increasingly noted as a problem, now exacerbated by the COVID-19 pandemic. Other national studies around higher education students and food insecurity have demonstrated that college students are at high risk for being food insecure (Goldrick-Rab, et. al., 2019). Food security is defined by the USDA as “access by all people at all times to enough food for an active, healthy life.” Food insecurity is a result of financial resource constraint, meaning that a household cannot afford food (Guide to Measuring Household Food Security, 2000). Being food insecure might not always mean going hungry, but it does mean that an individual is forced to change what they eat—often to less nutritious, cheaper food. Despite its importance, data regarding food security and higher education students in Utah is almost non-existent. Utah institutions have not taken part in other national surveys of food security, and each institution collects different data regarding food security issues (Goldrick-Rab, et. al.).

Having a better understanding of food security issues of higher education students is important for a variety of reasons. First, it means that university and college officials can better help get students to graduation and promote student success. Food insecurity can affect students’ academic performance and increase the likelihood a student may drop out or take longer to complete their degree (Wolfson, et. al., 2021; Leung, et. al 2021; Breuning, et. al. 2020). It can hinder students from engaging in High Impact Practices (like internships) as they are occupied with taking care of their basic needs, such as housing (Jesch, et. al, 2021). Often times food insecurity issues impact students who already have lower retention rates (first-generation, low-income, ethnic minority, and gender nonconforming) (Bruening, et. al.; Phillips and McDaniel 2018; Payne-Sturges, et. al. 2018). As more parenting students enroll in higher education, issues of food insecurity also affect more children and other dependents (GAO report).

Second, beyond higher education, a strong understanding of food security issues among higher education populations provides statewide data on the food security challenges in a variety of demographic groups, in both rural and urban settings. These data allow government and organizations to align the necessary interventions to help students.

And third, this understanding provides important evidence that those struggling with food are also struggling with other symptoms of poverty and social determinants of health like transportation, housing, health care, and interpersonal violence (Crutchfield et. al, 2020). Those experiencing food insecurity also experienced poorer mental and physical health, including higher rates of hypertension, obesity, depression, diabetes, and anxiety (Hammer, DeWalt, and Berkowitz 2021; Seligman, Laraia, and Kushel 2010; Leung, et. al; Gunderson and Ziliak 2019; Meza, et.al 2019). In order to better meet the needs of students and help promote student success, campuses need to have a better understanding of which students are facing food insecurity, why, and how educational institutions can work with other organizations to help address the intersecting social determinants of health that aggravate food security issues.

## KEY FINDINGS

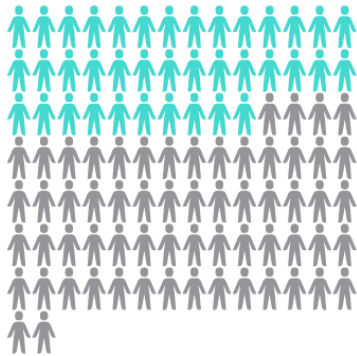
The goal of this survey was to broaden our understanding of food insecurity on Utah's college and technical college campuses. Understanding the extent and severity of food insecurity, the social determinants of health that contribute to food insecurity, and the impact that food insecurity has on students is paramount to helping USHE institutions address food insecurity on their campuses.

Key findings include:

- Overall, 38.8% of Utah higher education students experienced food insecurity in the past year.
- Of non-binary students, 60.6% are food insecure. Female students are more likely to be food insecure (39.9%) compared to male students (35.2%).
- First-generation college students are more likely to be food insecure (46.6%) compared to non-first-generation college students (33.8%).
- Nearly half of students of color are food insecure (47.9%), compared to 36% of white students.
- Roughly 45% of rural Utah students are food insecure, compared to 37.4% of urban Utah students.
- Of students who are caregivers to their parents or grandparents, 56.0% are food insecure. About 68% of students who are caregivers to their siblings are food insecure.
- Students who are food insecure likely struggle to obtain other basic needs. Nearly half struggle to get medicine or health care when needed. About a third struggle paying their rent or mortgage. About a quarter struggle to pay their utilities.
- Students with medical conditions that require special diets are at high risk for food insecurity – 72% are food insecure.
- Students who lack transportation are more likely to be food insecure (66.6%) compared to students who have transportation (35.4%).
- Social isolation correlates with food insecurity. Over half of students who see people they care about less than once a week are food insecure.
- Students who are not safe at home due to domestic violence are at risk for food insecurity – 66.1% are food insecure.
- About 58% of students who are 'very much' stressed are food insecure.
- Of students who work full-time, 38% are food insecure, indicating that full-time employment does not eliminate food insecurity.
- Food insecure students have lower GPAs – 3.40 compared to 3.59 for food secure students.
- About half of food insecure students report going hungry or not eating as a coping mechanism. Nearly half rely on family and friends for food, and about 15% utilize food pantries.

# Food Insecurity Among Higher Education Students in Utah

## Key Findings

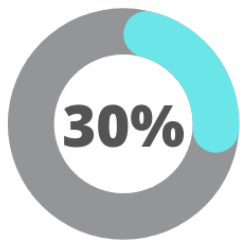


**38.8%**

of higher education students in Utah were food insecure within the past year. Twenty-one percent of students experienced very low food security.



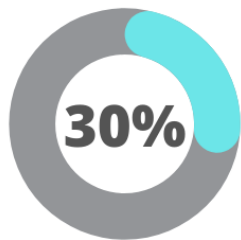
## Food insecure students struggle with other basic needs



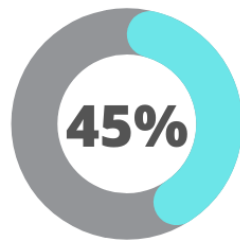
Rent/Mortgage



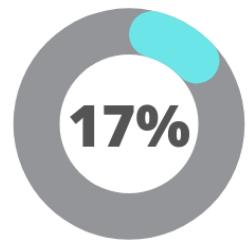
Utilities



Clothing



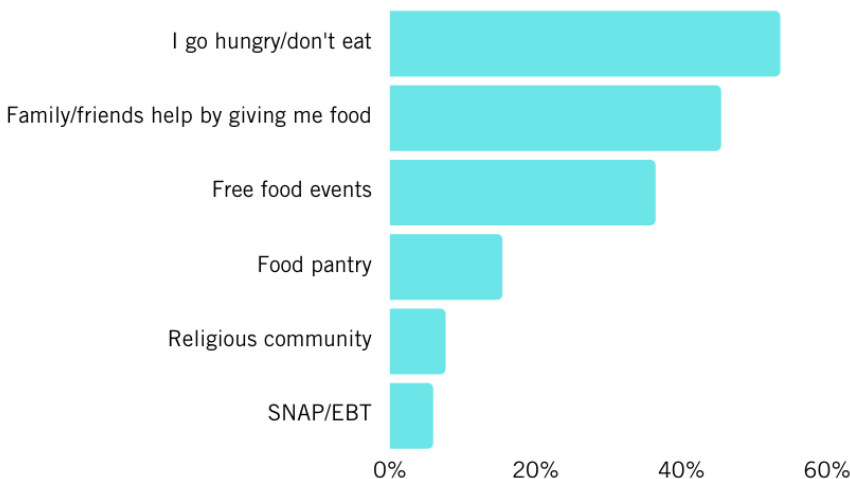
Medicine/Health Care



Phone

## Nearly half of food insecure students rely on family and friends for food.

How do you cope with not having enough or the right foods to eat?



**58.1%**

of Utah students who are 'very much' stressed are food insecure.



**68.2%**

of Utah students who reported 'poor' health are food insecure.



## EXTENT AND SEVERITY OF FOOD INSECURITY

The U.S. Department of Agriculture measures food security along a four-point scale ranging from high food security to very low food security. The *Guide to Food Security* describes the different levels as follows:

Food Secure	
<b>High food security</b>	No reported indications of food access problems or limitations.
<b>Marginal food security</b>	One or two reported indications – typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.
Food Insecure	
<b>Low food security</b>	Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
<b>Very low food security</b>	Reports of multiple indications of disrupted eating patterns and reduced food intake.

There were 5,692 higher education students who participated in the survey. Overall, 38.8% of students reported experiencing food insecurity within the past year. Twenty-one percent of students experienced very low food security.

**Table 1. Food Security Level of Respondents**

<b>Food Security</b>	<b>State of Utah</b>
High Food Security	40.0%
Marginal Food Security	21.2%
<b>Low Food Security</b>	<b>17.7%</b>
<b>Very Low Food Security</b>	<b>21.1%</b>

## USDA Household Survey Question Breakdown

All participants began the survey by answering the questions from the first stage of the USDA Household Food Security Module.

**Table 2. USDA Household Food Security Module, Household Stage One**

	Often true	Sometimes true	Never true	DK/ refuse
<b>I worried whether my food would run out</b> before I got money to buy more.	8.7%	30.4%	60.0%	1.0%
The food that I bought just didn't last, and <b>I didn't have money to get more.</b>	5.3%	24.6%	68.8%	1.2%
<b>I couldn't afford</b> to eat balanced meals.	18.0%	34.1%	46.9%	1.0%

Respondents who answered 'often true' or 'sometimes true' to any question in household stage one continued to adult stage two. There were 3,397 respondents who received the questions in adult stage two.

**Table 3. USDA Household Food Security Module, Adult Stage Two**

<b>In the past 12 months, did (were) you ever...?</b>	Yes	No	DK/refuse
<b>Cut the size of your meals or skip meals</b> because there wasn't enough money for food	52.0%	43.6%	4.4%
<b>Eat less</b> than you let you should because there wasn't enough money for food	51.8%	44.5%	3.7%
<b>Hungry</b> but didn't eat because there wasn't enough money for food	42.2%	55.0%	2.8%
<b>Lose weight</b> because there wasn't enough money for food	20.6%	66.2%	13.2%

Respondents who answered 'yes' to any of the questions in adult stage two continued to adult stage three. There were 2,193 respondents in adult stage three.

**Table 4. USDA Household Food Security Module, Adult Stage Three**

<b>In the past 12 months, did you ever...?</b>	Yes	No	DK/refuse	
<b>Not eat for a whole day</b> because there wasn't enough money for food	17.5%	79.1%	3.4%	
<b>How often did this happen?</b>	Almost every month 26.4%	Some months but not every month 48.8%	In 1 or 2 months only 21.9%	DK/Refuse 2.9%

Respondents with children under 18 years old received additional questions around food insecurity. There were 952 respondents with children.

**Table 5. USDA Household Food Security Module Child Stage One**

	Often true	Sometimes true	Never true	DK/ refuse
I relied on only a few kinds of <b>low-cost food to feed my children</b> because I was running out of money to buy food.	5.6%	26.6%	66.1%	1.8%
I <b>couldn't feed my children a balanced meal</b> because I couldn't afford that.	4.8%	19.5%	74.2%	1.5%
My <b>children were not eating enough</b> because I just couldn't afford enough food.	1.1%	5.8%	91.6%	1.6%

Respondents with children who answered 'often true' or 'sometimes true' to any question continued onto child stage two. There were 352 respondents who received the questions in child stage two.

**Table 6. USDA Household Food Security Module Child Stage Two**

<b>In the past 12 months...</b>	Yes	No	DK/refuse
Did you ever <b>cut the size of your child(ren)'s meals</b> because there wasn't enough money for food?	11.4%	86.6%	2.0%
Were the <b>child(ren) ever hungry</b> but you just couldn't afford more food?	10.8%	85.5%	3.7%
Did any of the <b>child(ren) ever not eat for a whole day</b> because there wasn't enough money for food?	2.0%	97.2%	0.9%
Did you ever <b>skip meals</b> because there wasn't enough money for food?	7.4%	92.0%	0.6%

# CONTRIBUTING FACTORS TO FOOD INSECURITY AND ITS IMPACT

## Housing

**Table 7. Current housing situation**

<b>What is your housing situation today?</b>	n	%
I have housing	5,451	95.3%
I DO NOT have housing (staying with others, in a hotel, in a shelter, living outside on the street, in a car, or in a park)	192	3.4%
Prefer not to answer	76	1.3%

- Of the students who do have housing, **37.4%** are food insecure. Of the students who lack housing, **65.6%** are food insecure.

**Table 8. Worried about losing housing**

<b>Are you worried about losing your housing?</b>	n	%
Yes	516	9.7%
No	4,666	87.8%
Prefer not to answer	130	2.4%

- Of the students who have housing but are worried about losing their housing, **72.9%** are food insecure. Of students who are not worried about losing their housing, **32.7%** are food insecure.

**Table 9. Living arrangements during the academic year**

<b>Where do you live during the academic year (August through May)?</b>	n	%
On-campus	735	13.8%
Off-campus	4,576	86.2%

- Of students who live on-campus, **36.2%** are food insecure. Of students who live off-campus, **38.0%** are food insecure.

**Table 10. Living situation during the academic year**

<b>Whom do you live with during the academic year (August through May)?</b>	n	%
Roommates (non-family members)	2,036	38.3%
My family of origin (father, mother, aunt, uncle, siblings, grandparents, foster parents, etc.)	1,435	27.0%
My child(ren)	177	3.3%
My partner (no children)	1,021	19.2%
My partner and child(ren)	695	13.1%
By myself	393	7.4%

- This question was a multiple selection question.
- Food insecurity is more prevalent among students who live with roommates (**44.7%**), with children (**59.9%**), and alone (**37.4%**).
- Among those who live with their family of origin, **34.2%** are food insecure, while **31.4%** of those who live with their partner and children are food insecure.
- Among students who live with their partner and no children, **34.6%** are food insecure.

**Table 11. Meal plans**

<b>Do you have a meal plan through the university/college?</b>	n	%
Yes	486	9.6%
No	4,360	85.9%
Prefer not to answer	19	0.4%
Not applicable	209	4.1%

- For students with a meal plan, **35.0%** are food insecure compared to the **39.1%** who do not have a meal plan.

**Table 12. Primary caregiver**

<b>Are you the primary caregiver for any of the following persons?</b>	n	%
Child/ren	805	14.4%
Parents/grandparents	150	2.7%
Siblings	69	1.2%
Other	97	1.7%
None	4,551	81.5%

- This question was a multiple selection question.
- Food insecurity is very high among students who are primary caregivers for their siblings **(68.1%)**.
- More than half of students who are primary caregivers for their parents/grandparents **(56.0%)** are food insecure.
- For students who are primary caregivers of their own children, **38.8%** are food insecure.

## Other Basic Needs

**Table 13. Inability to afford basic needs**

<b>Have you or any family members you live with been unable to get or pay for any of the following when it was really needed?</b>	<b>Overall</b>	<b>Food secure</b>	<b>Food insecure</b>
Food	18.3%	2.7%	35.9%
Rent/Mortgage	19.0%	9.4%	29.8%
Utilities (electric, gas, internet, water, or sewer, trash, etc.)	14.6%	5.8%	24.6%
Phone	10.0%	3.5%	17.4%
Medicine or health care (dental, mental health, vision, or physical health)	32.3%	21.4%	44.8%
Childcare	4.2%	2.7%	5.8%
Clothing	17.5%	6.1%	30.4%
Other	4.2%	3.3%	5.1%
Prefer not to answer	30.4%	35.1%	25.1%
None	18.4%	32.0%	3.0%

- Among those who are food insecure, **44.8%** could not afford medicine or healthcare when it was really needed.
- About one in four food insecure students struggle with utilities.
- Under the ‘other’ category, most listed tuition and car repairs as ‘unable to get when really needed.’

## Health

**Table 14. Medical home**

<b>Do you have a designated primary care provider or some place you usually go when you need medical advice or care?</b>	n	%
Yes	3,676	67.0%
No	1,690	30.8%
Prefer not to answer	124	2.3%

- Students without a medical home have higher rates of food insecurity (**47.5%**) compared to students with a medical home (**34.4%**).

**Table 15. Food affordability with medical conditions**

<b>Do you have any medical conditions that make it difficult for you to afford the foods you can eat?</b>	n	%
Yes	585	10.6%
No	4,824	87.8%
Prefer not to answer	85	1.5%

- Students with medical conditions that can make it difficult to afford acceptable foods are much more likely to be food insecure (**72.0%**) compared to students who do not have a medical condition (**34.1%**).

**Table 16. Transportation**

<b>Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?</b>	n	%
Yes	530	9.6%
No	4,882	88.9%
Prefer not to answer	82	1.5%

- Students who lack reliable transportation are more likely to be food insecure (**66.6%**) compared to students with reliable transportation (**35.4%**).



**Table 17. General health status**

<b>Would you say that in general your health is ...?</b>	n	%
Excellent	565	9.9%
Very Good	2,640	46.1%
Fair	2,268	39.6%
Poor	233	4.1%

- Food insecurity is more prevalent among students who report 'fair' (**51.9%**) or 'poor' (**68.2%**) health compared to those who report 'excellent' (**17.5%**) or 'very good' (**29.5%**) health.

## Social and Emotional Health

**Table 18. Social interactions**

<b>How often do you see or talk to people that you care about and feel close to?</b>	n	%
Less than once a week	511	9.3%
1-2 times a week	1,286	23.4%
3-5 times a week	1,351	24.6%
5 or more times a week	2,345	42.7%

- Of the students who see or talk to people that they care about more than 5 times a week, **30.0%** are food insecure.
- Of the students who talk with others that they care about 3-5 times a week, **36.4%** are food insecure.
- Of the students who talk with others that they care about 1-2 times a week, **49.5%** are food insecure.
- Of the students who talk with others that they care about less than once a week, **57.5%** are food insecure.

**Table 19. Physically and emotionally safe**

<b>Do you feel physically and emotionally safe where you currently live?</b>	n	%
Yes	4,637	84.4%
No	221	4.0%
Unsure	571	10.4%
Prefer not to answer	65	1.2%

- Among students who are not safe at home, **66.1%** are food insecure. Among students who are unsure of their safety, **58.0%** are food insecure. Among students who are safe at home, **34.8%** are food insecure.

**Table 20. Fear of partner**

<b>In the past year, have you been afraid of your partner or ex-partner?</b>	n	%
Yes	308	5.6%
No	4,940	90.0%
Unsure	118	2.1%
Prefer not to answer	123	2.2%

- Students who fear their partner or ex-partner are more likely to be food insecure (**63.3%**) compared to students who do not fear their partners (**36.7%**).

**Table 21. Stress levels**

<b>How stressed are you?</b>	n	%
Not at all	147	2.7%
A little bit	799	14.5%
Somewhat	1,346	24.5%
Quite a bit	1,749	31.8%
Very much	1,437	26.2%
Prefer not to answer	16	0.3%

- Among students who are 'very much' stressed, **58.1%** are food insecure.
- Of the students who are 'quite a bit' stressed, **40.7%** are food insecure.
- Of the students who are 'somewhat' stressed, **26.2%** are food insecure.
- Among students who are 'a little bit' stressed, **22.9%** are food insecure.
- Among students who are 'not at all' stressed, **23.1%** are food insecure.

## Employment, Income, and Financial Aid

**Table 22. Current work situation**

<b>What is your current work situation?</b>	n	%
Unemployed but seeking work	538	9.8%
Unemployed and not seeking work (student or caregiver)	1,022	18.6%
Temporary work (working for 1 year or less)	252	4.6%
Part-time (less than 40 hours per week)	2,721	49.6%
Full-time (40+ hours per week)	1,167	21.3%
Prefer not to answer	69	1.3%

- This was a multiple selection question.
- Among students who work full-time, **38.0%** are food insecure. Similarly, **39.9%** of students who work part-time are food insecure.
- Among students who are unemployed and not looking for work, **28.6%** are food insecure.
- Among students who are unemployed but looking for work, **53.5%** are food insecure.
- Among students who have temporary employment, **49.2%** are food insecure.

**Table 23. Work location**

<b>Where do you work?</b>	n	%
On-campus employment	817	20.8%
Off-campus employment	2,801	71.3%
Both	250	6.4%
Prefer not to answer	58	1.5%

- Of students who work on-campus, **38.4%** are food insecure. Among students who work off-campus, **39.6%** are food insecure.

**Table 24. Tax dependent**

<b>In the past year, did anyone claim you as a dependent for tax purposes?</b>	n	%
Yes	1,580	29.2%
No	3,406	62.9%
DK/prefer not to answer	433	8.0%

- Students who are not dependents are more likely to be food insecure (**39.9%**) compared to students who are dependents (**35.7%**).

**Table 25. Financial aid**

<b>Do you receive financial aid?</b>	n	%
Yes	4,071	75.1%
No	1,236	22.8%
Prefer not to answer	112	2.1%

- Of students who received financial aid, **40.0%** are food insecure compared to **34.4%** students who did not receive financial aid.

**Table 26. Household income**

**During the past year, what was the total combined income for you and the family members you live with?**

	n	%
Less than \$10,000/year	645	11.9%
\$10,000-\$19,999/year	633	11.7%
\$20,000-\$29,999/year	520	9.6%
\$30,000-\$39,999/year	431	8.0%
\$40,000-\$49,999/year	347	6.4%
\$50,000-\$59,999/year	356	6.6%
\$60,000-\$69,999/year	286	5.3%
\$70,000+/year	1,249	23.1%
Prefer not to answer	944	17.4%

- As expected, students in households with lower income are more likely to be food insecure. Of students who make less than \$10,000/year, **63.7%** are food insecure.
- Of students who make between \$10,000-\$19,999/year, **55.3%** are food insecure.
- Of students who make between \$20,000-\$29,999/year, **50.6%** are food insecure.
- Of students who make between \$30,000-\$39,999/year, **50.6%** are food insecure.
- Of students who make between \$40,000-\$49,999/year, **37.2%** are food insecure.
- Of students who make between \$50,000-\$59,999/year, **33.1%** are food insecure.
- Of students who make between \$60,000-\$69,999/year, **23.8%** are food insecure.
- Of students who make between \$70,000+/year, **14.0%** are food insecure.

## Academics

**Table 27. Academic performance**

<b>Has lack of food affected your academic performance?</b>	n	%
Not at all	2,174	39.6%
A little bit	1,100	20.0%
Somewhat	578	10.5%
Quite a bit	131	2.4%
Very much	61	1.1%
Prefer not to answer	53	1.0%
Not applicable	1,395	25.4%

- Of students who responded that lack of food has impacted their academics ‘very much,’ **88.5%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘quite a bit,’ **87.8%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘somewhat,’ **81.5%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘a little bit,’ **68.5%** are food insecure.
- Of students who responded that lack of food has impacted their academics ‘not at all,’ **28.2%** were food insecure.

**Table 28. GPA**

<b>What is your GPA?</b>	Overall	Food secure	Food insecure
Mean	3.51	3.59	3.40
Standard Deviation	0.58	0.53	0.63

- Students who are food insecure have lower GPAs compared to food secure students.

# Coping Mechanisms

**Table 29. Coping with food insecurity**

How do you cope with not having enough or the right foods to eat?	Overall	Food secure	Food insecure
Food pantry	8.9%	4.7%	15.4%
Family/friends help by giving me food	27.8%	16.6%	45.4%
SNAP-EBT benefits	3.0%	1.1%	5.9%
WIC benefits	1.7%	1.2%	2.5%
Assistance from my religious community	4.9%	3.1%	7.6%
I attend free food events	22.0%	12.8%	36.4%
I go hungry/I don't eat	25.8%	8.2%	53.5%
Other	2.7%	2.0%	4.0%
Not applicable	48.9%	72.0%	12.5%

- **Nearly half** of food insecure students rely on family and friends for food and/or do not eat when hungry.
- **About half** of food insecure students do not eat when hungry.
- Among food insecure students, only **5.9%** receive SNAP benefits.



## A DEEPER LOOK: RURAL AND URBAN STUDENTS

This analysis compares the differences between rural and urban Utah students only. Students provided their zip codes, and those zip codes were converted to Utah county designation. Counties were designated as rural or urban counties by the [Utah Department of Health](#). Utah urban counties include Cache, Weber, Salt Lake, Davis, and Utah County.

**Table 30. Food Insecurity among Rural and Urban Students**

	Rural	Urban
<b>Total number of students</b>	1,126	3,841
<b>Severity of food insecurity</b>		
High food security	32.6%	42.0%
Marginal food security	22.9%	20.6%
Low food security	18.9%	17.3%
Very low food security	25.6%	20.1%
<b>Housing situation</b>		
Have housing	94.8%	95.8%
Worried about losing housing	11.7%	9.5%
Do not have housing	3.9%	3.1%
<b>Basic needs</b>		
Food	20.0%	18.2%
Rent/mortgage	18.5%	19.2%
Utilities	14.6%	14.8%
Phone	11.5%	9.8%
Medicine or health care	32.9%	33.6%
Childcare	4.4%	4.4%
Clothing	17.0%	18.1%
Other	3.3%	4.4%
Do not have a primary care provider	32.1%	30.1%
General health is fair or poor	47.9%	42.9%
Lack of transportation	9.1%	9.3%
Not physically or emotionally safe	4.2%	4.0%
In fear of partner	5.6%	5.6%
'Very much' stressed	25.7%	27.1%
Receive financial aid	80.2%	73.7%
<b>Coping mechanisms</b>		
Food pantry	8.9%	8.8%
Family/friends help by giving me food	32.1%	26.7%
SNAP-EBT benefits	2.5%	3.3%
WIC benefits	1.5%	1.9%
Assistance from religious community	5.9%	4.6%
Free food events	27.6%	20.5%
Go hungry/don't eat	31.7%	24.0%

## A DEEPER LOOK: GENDER

This analysis compares the differences between male, female, and non-binary/self-identify gender students. About **60.6%** of non-binary/self-identify students experience high levels of food insecurity. Of female students, **39.9%** are food insecure while **35.2%** of male students are food insecure.

**Table 31. Food Insecurity and Gender**

	Male	Female	Non-binary/ Self-identify
<b>Total number of students</b>	1,879	3,360	142
<b>Severity of food insecurity</b>			
High food security	44.9%	38.3%	21.8%
Marginal food security	20.0%	21.7%	17.6%
Low food security	16.1%	18.4%	16.2%
Very low food security	19.1%	21.5%	44.4%
<b>Housing situation</b>			
Have housing	95.1%	96.0%	93.0%
Worried about losing housing	8.9%	9.9%	17.8%
Do not have housing	3.7%	3.2%	4.9%
<b>Basic needs</b>			
Food	16.0%	19.1%	38.0%
Rent/mortgage	17.8%	19.4%	29.6%
Utilities	12.9%	15.4%	26.9%
Phone	8.8%	10.3%	19.4%
Medicine or health care	27.3%	35.7%	46.3%
Childcare	3.2%	4.8%	2.8%
Clothing	14.2%	18.7%	30.6%
Other	3.2%	4.6%	7.4%
Do not have a primary care provider	35.3%	28.0%	34.5%
General health is fair or poor	38.9%	45.4%	70.5%
Lack of transportation	8.4%	9.9%	20.4%
Not physically or emotionally safe	3.5%	3.9%	12.8%
In fear of partner	3.2%	6.6%	10.6%
'Very much' stressed	17.7%	30.1%	47.9%
Receive financial aid	71.6%	77.3%	77.3%
<b>Coping mechanisms</b>			
Food pantry	8.1%	9.0%	16.2%
Family/friends help by giving me food	21.6%	30.9%	39.4%
SNAP-EBT benefits	2.3%	3.4%	5.6%
WIC benefits	2.3%	1.4%	1.4%
Assistance from religious community	4.8%	4.9%	4.2%
Free food events	18.4%	23.2%	41.5%
Go hungry/don't eat	23.4%	26.2%	47.9%

## A DEEPER LOOK: FIRST-GENERATION STUDENTS

First-generation college students are an at-risk group for food insecurity. We used the federal definition of first-generation college student, which is a student whose parents did not receive a baccalaureate degree. About **47%** of first-generation college students are food insecure compared to **33.8%** of students who are not first-generation college students.

**Table 32. Food Insecurity among First-Generation College Students**

	First-Generation	Not First Generation
<b>Total number of students</b>	2,022	3,383
<b>Severity of food insecurity</b>		
High food security	33.8%	44.3%
Marginal food security	19.6%	21.9%
Low food security	19.6%	16.3%
Very low food security	27.0%	17.5%
<b>Housing situation</b>		
Have housing	93.7%	96.9%
Worried about losing housing	13.1%	7.6%
Do not have housing	4.5%	2.6%
<b>Basic needs</b>		
Food	23.9%	14.4%
Rent/mortgage	24.0%	15.5%
Utilities	20.0%	10.7%
Phone	14.2%	6.8%
Medicine or health care	38.7%	28.8%
Childcare	5.6%	3.3%
Clothing	20.9%	15.0%
Other	4.3%	4.1%
Do not have a primary care provider	32.9%	29.6%
General health is fair or poor	52.9%	38.1%
Lack of transportation	11.2%	8.6%
Not physically or emotionally safe	5.0%	3.4%
In fear of partner	6.3%	5.1%
‘Very much’ stressed	30.5%	23.7%
Receive financial aid	75.6%	75.3%
<b>Coping mechanisms</b>		
Food pantry	10.5%	7.9%
Family/friends help by giving me food	30.1%	26.5%
SNAP-EBT benefits	4.7%	1.9%
WIC benefits	2.5%	1.2%
Assistance from religious community	4.8%	4.9%
Free food events	19.3%	23.7%
Go hungry/don’t eat	27.8%	24.5%

## A DEEPER LOOK: STUDENTS OF COLOR

Students of color are another at-risk group for food insecurity. All students who identified as Hispanic/Latino (regardless of race), Asian, Black, American Indian, or Pacific Islander/Hawaiian were coded as students of color.

**Table 33. Food Insecurity among Students of Color**

	Students of Color	White Students
<b>Total number of students</b>	1,213	4,113
<b>Severity of food insecurity</b>		
High food security	33.5%	42.4%
Marginal food security	18.6%	21.6%
Low food security	19.1%	17.0%
Very low food security	28.8%	19.0%
<b>Housing situation</b>		
Have housing	92.3%	96.5%
Worried about losing housing	14.8%	8.2%
Do not have housing	5.2%	2.9%
<b>Basic needs</b>		
Food	23.4%	16.7%
Rent/mortgage	24.6%	17.1%
Utilities	20.5%	12.9%
Phone	14.4%	8.4%
Medicine or health care	38.8%	30.8%
Childcare	6.0%	3.6%
Clothing	20.6%	16.2%
Other	3.8%	4.3%
Do not have a primary care provider	38.0%	28.6%
General health is fair or poor	52.8%	41.0%
Lack of transportation	16.4%	7.6%
Not physically or emotionally safe	5.4%	3.5%
In fear of partner	5.1%	5.5%
'Very much' stressed	26.9%	25.9%
Receive financial aid	73.4%	75.7%
<b>Coping mechanisms</b>		
Food pantry	13.7%	7.4%
Family/friends help by giving me food	29.0%	27.5%
SNAP-EBT benefits	4.5%	2.7%
WIC benefits	2.8%	1.4%
Assistance from religious community	4.6%	4.8%
Free food events	20.9%	22.3%
Go hungry/don't eat	27.8%	25.2%

# A DEEPER LOOK: TECHNICAL COLLEGE AND UNIVERSITY STUDENTS

Technical college students attend one of Utah’s eight technical college institutions while college/university students attend one of Utah’s 2- or 4-year institutions.

**Table 34. Food Insecurity among Technical College and College/University Students**

	Technical College	College/University
<b>Total number of students</b>	447	5,274
<b>Severity of food insecurity</b>		
High food security	35.8%	40.4%
Marginal food security	17.2%	21.5%
Low food security	18.3%	17.7%
Very low food security	28.6%	20.5%
<b>Housing situation</b>		
Have housing	89.3%	95.8%
Worried about losing housing	13.0%	9.5%
Do not have housing	8.5%	2.9%
<b>Basic needs</b>		
Food	19.3%	18.2%
Rent/mortgage	21.6%	18.7%
Utilities	18.0%	14.3%
Phone	13.7%	9.7%
Medicine or health care	31.2%	32.5%
Childcare	4.9%	4.1%
Clothing	19.8%	17.2%
Other	5.4%	4.1%
Do not have a primary care provider	29.5%	30.9%
General health is fair or poor	54.8%	42.8%
Lack of transportation	7.6%	9.8%
Not physically or emotionally safe	6.7%	3.8%
In fear of partner	6.9%	5.5%
‘Very much’ stressed	22.9%	26.4%
Receive financial aid	59.7%	76.4%
<b>Coping mechanisms</b>		
Food pantry	12.4%	8.6%
Family/friends help by giving me food	27.5%	27.8%
SNAP-EBT benefits	6.7%	2.7%
WIC benefits	3.8%	1.5%
Assistance from religious community	7.4%	4.7%
Free food events	11.5%	22.9%
Go hungry/don’t eat	25.4%	25.9%

## APPENDIX A: DEMOGRAPHICS

**Table 35. Race and Ethnicity**

Race/ethnicity	n	%
Asian	378	7.0%
American Indian or Alaskan Native	104	1.9%
Black or African American	99	1.8%
Hispanic	623	11.5%
Native Hawaiian or Pacific Islander	81	1.5%
Other	145	2.7%
Prefer not to answer	179	3.3%
White (non-Hispanic)	4,321	79.8%

Note: The 'race' question permitted multiple selections, so percentages exceed 100%.

**Table 36. Gender**

Gender	n	%
Male	1,879	34.7%
Female	3,360	62.0%
Non-binary	108	2.0%
Self-identify	34	0.6%
Prefer not to answer	38	0.7%

**Table 37. Special populations**

Special populations	n	%
Armed Forces	127	2.3%
Refugee	11	0.2%

**Table 38. Legal status**

Legal status	n	%
U.S. citizen	5,126	94.6%
Permanent or conditional resident	74	1.4%
Non-immigrant	169	3.1%
Other status	24	0.4%
Prefer not to answer	27	0.5%

**Table 39. Home language**

<b>Home language</b>	<b>n</b>	<b>%</b>
English	5,232	96.5%
Spanish	57	1.1%
Other	97	1.8%
Prefer not to answer	35	0.6%

**Table 40. Parental education**

<b>What is the highest level of education completed by either of your parents (or those who raised you)?</b>	<b>n</b>	<b>%</b>
Did not finish high school	179	3.3%
High school diploma or G.E.D.	691	12.6%
Technical degree or certificate	214	3.9%
Attended college, but did not complete degree	482	8.8%
Associate's degree	456	8.3%
Bachelor's degree	1,716	31.2%
Master's degree	1,190	21.7%
Doctoral or professional degree	477	8.7%
Do not know/prefer not to answer	89	1.6%

**Table 41. Academic status**

<b>Academic status</b>	<b>n</b>	<b>%</b>
Full-time	4,362	79.5%
Part-time	1,127	20.5%

**Table 42. Year in school**

<b>Year in school</b>	<b>n</b>	<b>%</b>
Technical college student	407	7.4%
First year undergraduate	1,229	22.4%
Second year undergraduate	1,058	19.3%
Third year undergraduate	963	17.6%
Fourth year undergraduate	662	12.1%
Fifth year undergraduate	388	7.1%
Graduate student	779	14.2%

## APPENDIX B: SURVEY METHODOLOGY

**Survey Development Team.** As mentioned in the Acknowledgements section, Melissa Hall led the survey development team along with Alex Cragun, Katharine French-Fuller, and primary investigator Yesenia Quintana. Other members of the team provided expertise on food security, higher education safety nets, and survey design. The team met regularly to discuss content issues and concerns around methodology.

**USDA Household Food Security Module.** The USDA Household Food Security Module is a robust and stable measure of food insecurity. The survey has undergone rigorous analysis and modifications over the course of three decades. The survey is a 10 to 18 question module that measures food insecurity along a continuous linear scale. A higher score indicates higher food insecurity. The questions measure reported behavior based on financial limitations within the past year. The survey has three levels of screeners to reduce respondent burden. As food insecurity increases, participants proceed through the three stages of the survey. Respondents with children answer additional questions to gauge the level of food insecurity experienced by children. To keep survey integrity, there were no modifications to the survey.

According to the Guide to Measuring Household Food Security, the survey is an appropriate tool to measure food insecurity not only nationwide but also among smaller, local, targeted populations. Another tool, the USDA Adult Food Security Module, is shorter but fails to capture the experience of households with children. Considering Utah's demographics, the survey development team moved forward with the USDA Household Food Security Module. Other nationwide surveys that attempt to gauge food insecurity among higher education students have used either the USDA Household or the Adult Food Security Module. Using the USDA surveys allows researchers to draw direct comparisons with other populations.

**PRAPARE Assessment Tool.** The Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE) Assessment Tool is a comprehensive tool used mainly by healthcare providers to "better understand and act" on social determinants of health. Some of Utah's healthcare providers currently use it as part of their intake. The PRAPARE assessment has the following core measures: race, ethnicity, veteran status, language, housing status, housing stability, education, employment, insurance, income, transportation, social integration and support, stress, refugee status, safety, and domestic violence—among others. It is the most comprehensive and validated tool on social determinants of health available. Better understanding how social determinants of health interact with food insecurity provides stakeholders with data to support equitable solutions.



**Other Survey Questions.** In addition to the questions from the sources listed above, the survey development team also considered and reviewed a number of additional survey questions applicable for higher education as well as additional questions around other stressors. These included questions about caregiver status, health, food accessibility, citizenship status, coping mechanisms, and academic performance. Additionally, each school was allowed to submit up to three supplemental questions for their specific student body. Specific institution data is not available in this report; to access said information, please contact the Chief Student Affairs Officer at the desired school.

**Student Input.** To ascertain content validity, the CRE conducted focus groups with several student groups. Student groups included undergraduate students within nutrition programs, undergraduates in unrelated programs, technical college students, and graduate students. Students varied in gender, year in college, race and ethnicity, and major. Focus group questions focused on the PRAPARE assessment and other survey questions. Students did not give feedback on the USDA Household Food Security Module. Students explained their understanding of the questions to the focus group facilitator and reviewed answer options for relevance. Facilitators asked probing questions to generate critical thinking about the questions. To thank them for their time, students received a small incentive gift card. Student feedback led to some modifications to survey questions and response options.

**Student Resources.** After taking the survey, students were redirected to an incentives and resources page. The resources page included information about campus basic needs programs as well as local community supports.

## Sample, Survey Distribution, and Incentives

To ensure an appropriate sample from across the state, researchers requested random student samples from 2- and 4-year colleges and the full student population from the technical colleges. One 2-year institution provided a stratified sample. With one exception, all schools launched the survey on September 20, 2021. All surveys closed 4 weeks after their launch. Students were eligible to take the survey if they were a current student in a USHE institution, an adult, and either an undergraduate or graduate student. Minors (including those who attend a technical college) and post-doctoral students were excluded. Students received one initial email invitation through Qualtrics to participate in the survey and then subsequently received four email reminders. Total sample size was 51,533 students. A total of 5,692 students participated in the survey. The overall response rate was 11.0% and completion rate was 90.5%. The confidence level is 95% with a confidence interval of  $\pm 1.28\%$ .

WSU distributed the survey for most campuses with a few exceptions. WSU submitted and received IRB approval to conduct the survey from WSU IRB for most institutions while other institutions submitted their own IRBs.

**Table 42. Response and Completion Rates**

<b>School</b>	<b>Response Rate</b>	<b>Completion Rate</b>
Statewide	11.0%	90.5%
Bridgerland Technical College	3.7%	89.6%
Davis Technical College	0.9%	77.8%
Dixie State University	12.6%	90.6%
Dixie Technical College	9.2%	89.0%
Mountainland Technical College	2.6%	90.6%
Ogden-Weber Technical College	10.2%	87.0%
Salt Lake Community College	4.5%	91.3%
Snow College	6.4%	82.3%
Southern Utah University	12.0%	90.0%
Southwest Technical College	4.3%	89.3%
Tooele Technical College	16.4%	97.1%
Uintah Basin Technical College	0.7%	75.0%
University of Utah	19.5%	89.6%
Utah State University	17.9%	91.0%
Utah Valley University	9.5%	93.3%
Weber State University	15.9%	92.9%

To incentivize participation, students had the option of entering into a drawing for \$25 gift cards. Once a student completed the survey, they were redirected to the incentives and resources survey. If they were interested in entering the drawing, they submitted their name, email, and phone number. A total of 224 \$25 gift cards were proportionately distributed to all participating institutions. Distribution was based on response rate with every campus guaranteed at least one gift card. Students selected via the drawing received an email notifying them that they were the card recipients, allowing them access to a website that gives them freedom to select the gift card that they desire. United Way of Salt Lake distributed the gift cards.

## LIMITATIONS AND SUGGESTIONS

This section covers the limitations and suggestions for future iterations of this survey.

In order to minimize bias in the survey, most 2 and 4-year institutions provided a random sample of their student body. One 2-year institution provided a stratified sample to account for the demographic makeup of their school. Technical colleges provided their entire student sample. However, surveys are voluntary and self-selection to participate in a survey can introduce some bias.

The following suggestions are meant to assist future iterations of this survey.

- **Sexual orientation question:** The lack of a sexual orientation question was a major miss for the first iteration of this survey. The food insecurity results for non-binary students suggest LGBTQ individuals as the most at-risk student population.
- **Age question:** Future iterations of this survey should include an age question. Age is a contributing factor when determining if someone is a non-traditional student.
- **Institution participation:** Due to time constraints, not all USHE institutions were able to participate in the survey design. In the future, each USHE institution should be given ample time to identify the right person to participate in survey development.
- **Right people for different phases of the project:** In the future, each institution should identify a lead contact for IRB and general logistics, a staff/faculty member who will participate in survey development, and a staff member who is in Institutional Effectiveness or Institutional Research – to assist with sampling, timeline, and distribution.
- **Marketing:** Some campus marketing can help encourage student participation. Some institutions that launched individual marketing campaigns saw higher response rates.

## APPENDIX C: REFERENCES

- Bickel, G., Nord, M., Price, C., Hamilton, W., & Cook, J. (2000). *Guide to Measuring Household Food Security, Revised 2000*. U.S. Department of Agriculture, Food and Nutrition Service, Alexandria VA. March, 2000.
- Bruening, M., Argo, K., Payne-Sturges, D., & Laska, M. (2017). "The Struggle Is Real: A Systematic Review of Food Insecurity on Postsecondary Education Campuses," *Journal of the Academy of Nutrition and Dietetics*, Volume 117, Issue 11, 1767-1791.
- Crutchfield, R. M., Carpena, A., McCloy, T. N., & Maguire, J. (2020). The Starving Student Narrative: How Normalizing Deprivation Reinforces Basic Need Insecurity in Higher Education. *Families in Society: Journal of Contemporary Social Services*, 101(3), 409–421.
- Dubick, J., Mathews, B., & Cady, C. (2016). *Hunger on Campus: The Challenge of Food Insecurity for College Students*. College and University Food Bank Alliance.
- Goldrick-Rab, S., Baker-Smith, C., Coca, V., Looker, E., & Williams, T. (2019). *College and University Basic Needs Insecurity: A National #RealCollege Survey Report*. The Hope Center. [https://hope4college.com/wp-content/uploads/2019/04/HOPE\\_realcollege\\_National\\_report\\_digital.pdf](https://hope4college.com/wp-content/uploads/2019/04/HOPE_realcollege_National_report_digital.pdf)
- Gundersen C, & Ziliak, JP. Food Insecurity And Health Outcomes. *Health Aff Proj Hope*. 2015;34(11):1830-1839.
- Hanmer, J., DeWalt, D. A., & Berkowitz, S. A. (2021). Association between Food Insecurity and Health-Related Quality of Life: A Nationally Representative Survey. *JGIM: Journal of General Internal Medicine*, 36(6), 1638–1647.
- Health Research & Educational Trust. (2017, June). Social determinants of health series: Food insecurity and the role of hospitals. Chicago, IL: Health Research & Educational Trust. Accessed at [www.aha.org/foodinsecurity](http://www.aha.org/foodinsecurity)
- Jesch, E., Colgan, C., Perdomo, K., Pressman, E., & Bajracharya, S. (2021). Food Insecurity (FI) in Colleges and Universities: A Needs Assessment of Student Population. *International Journal of Health, Wellness & Society*, 11(1), 171–187.
- Leung, C. W., Insolera, N., Cohen, A. J., & Wolfson, J. A. (2021). The Long-Term Effect of Food Insecurity During College on Future Food Insecurity. *American Journal of Preventive Medicine*, 61(6), 923–926.
- Leung, C. W., Epel, E. S., Willett, W. C., Rimm, E. B., & Laraia, B. A. Household Food Insecurity Is Positively Associated with Depression among Low-Income Supplemental Nutrition Assistance Program Participants and Income-Eligible Nonparticipants. *J Nutr*. 2015;145(3):622-627.
- Martinez, S. M., Frongillo, E. A., Leung, C., & Ritchie, L. (2020). No food for thought: food insecurity is related to poor mental health and lower academic performance among students in California's public university system. *J Health Psychol*, 25 (12), pp. 1930-1939.
- Meza, A., Altman, E., Martinez, S., & Leung, C. W. (2019). "It's a Feeling That One Is Not Worth Food": A Qualitative Study Exploring the Psychosocial Experience and Academic Consequences of Food Insecurity Among College Students. *Journal of the Academy of Nutrition & Dietetics*, 119(10), 1713.

National Association of Community Health Centers. (2021). *PRAPARE Implementation and Action Toolkit*. [https://www.nachc.org/wp-content/uploads/2020/07/NACHC\\_PRAPARE\\_ALL-Updated-7.13.20-Translations-Included.pdf](https://www.nachc.org/wp-content/uploads/2020/07/NACHC_PRAPARE_ALL-Updated-7.13.20-Translations-Included.pdf)

Payne-Sturges, D., Tjaden, A., Caldeira, K., Vincent, K., & Arria, A. (2018). *Student hunger on campus: Food insecurity among college students and implications for academic institutions*. University of Maryland School of Public Health.

Phillips, E., McDaniel, A., & Croft, A. (2018). Food insecurity and academic disruption among college students. *J Stud Aff Res Pract*, 55 (4) , 353-372.

Seligman, HK, Laraia, BA, & Kushel, MB. Food insecurity is associated with chronic disease among low-income NHANES participants. *J Nutr*. 2010;140(2):304-310.

U.S. Government Accountability Office, Food insecurity: better information could help eligible college students access federal food assistance benefits, U.S. Government Accountability Office, Washington, DC (Published December 2018). <https://www.gao.gov/assets/gao-19-95.pdf>; [https://hope4college.com/wp-content/uploads/2020/05/2019\\_ParentingStudentsReport.pdf](https://hope4college.com/wp-content/uploads/2020/05/2019_ParentingStudentsReport.pdf)

Wolfson, J., Insolera, N., Cohen, A., & Leung, C. (2021). The effect of food insecurity during college on graduation and type of degree attained: Evidence from a nationally representative longitudinal survey. *Public Health Nutrition*, 1-9.