

FOOD AND HOUSING INSECURITY AMONG STUDENTS AT A COMMUNITY  
COLLEGE DISTRICT

A dissertation submitted to the faculty of  
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Doctor of Education

In

Educational Leadership

by

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San Francisco, California

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CERTIFICATION OF APPROVAL

I certify that I have read *Food and Housing Insecurity Among Students at a Community College District* by Vanessa Mercado, and that in my opinion this work meets the criteria for approving a dissertation submitted in partial fulfillment of the requirements for the degree: Doctor of Education in Educational Leadership at San Francisco State University.



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FOOD AND HOUSING INSECURITY AMONG STUDENTS AT A COMMUNITY  
COLLEGE DISTRICT

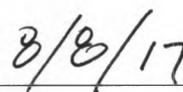
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An emerging body of scholarship has begun to illuminate the prevalence of college student food and housing insecurity, however, less is known about the characteristics and academic progress of students experiencing these conditions. This study identifies the food and housing needs among community college students, and explores how these needs impact students' academic success. A quantitative case study design employing a cross-sectional survey (N = 693) was used to examine the following research questions within the Peralta Community College District: To what extent do community college students experience food and housing insecurity? What are the demographic characteristics of community college students experiencing food and housing insecurity? What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes? Statistical analyses revealed that food insecure and housing insecure students are attempting more units and working harder to achieve comparable academic outcomes as their food and housing secure student counterparts, but their academic performance is compromised in the process. This research provides a more nuanced understanding of college student food and housing insecurity, and serves to aid each institution and the district as a whole in enhancing services to promote student success by responding to and meeting students' basic needs security.

I certify that the Abstract is a correct representation of the content of this dissertation.



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## **Chapter One: Purpose of the Study**

### **Introduction**

Community colleges are a vehicle for entry into postsecondary education and serve a multitude of functions contributing to personal development, training the future workforce, and enhancing civic engagement in democracy. These institutions have multiple missions and serve a diverse student body with varied backgrounds and educational objectives including: remedial and developmental adult education, vocational education and certificate programs, degree completion, transfer and access to baccalaureate preparation, and lifelong learning and continuing education (Bahr, 2010; Dougherty, 2010; Wyner, 2014).

Even though a significant number of students indicate that their educational goal is obtain a certificate or degree, many of the students who enroll at a community college do not persist and leave college without any credentials. According to the U.S. Department of Education's National Center for Education Statistics (2015) the retention rate for first-time students who enrolled at two-year institutions in Fall 2012 was 60%, and only 29% of first-time full-time students who began their pursuit of a certificate or associate's degree in Fall 2010 attained it within 150 percent of the normal time required. These low rates of college persistence and completion have called for national efforts to support student success in order for institutions to fulfill their overarching mission.

Due to open access policies, community colleges serve student populations from more diverse backgrounds as compared to the "traditional" college-aged populations

attending four-year universities. The most recent analyses of data trends highlight that the demographic composition largely consists of students who are older, racially-minoritized students, enrolled part-time, first-generation college students, work at least part-time, are a parent, and receive some form of financial aid (American Association of Community Colleges, 2016). As the cost of higher education increases and more people divert to community colleges as the pathway to higher education, it is becoming increasingly evident that these not-so-traditional student characteristics not only intersect but are the predominate populations among students who attend community colleges. As community colleges continue to serve a wide array of students, institutions must constantly grapple with demands to develop strategic initiatives for addressing the diverse needs students bring with them in order to reduce major barriers to student progress, retention, performance, and completion.

There are myriad of reasons as to why students leave community college before completing their course of study, several of which have no relation to academic factors. Many students face a set of non-academic barriers as they access higher education with limited resources which impact their college success. More specifically, many community college students are tasked with having to manage external circumstances, such as securing housing and daily meals, while simultaneously attending to academic needs. Broadly defined, food and housing insecurity are social disparities that are inclusive of less severe and more widespread forms of hunger and homelessness. Addressing students' unmet food and housing needs is essential given that food and

housing insecurity not only impact individual health and well-being, but ultimately threaten academic progress and student success.

### **Statement of the Problem**

An emerging body of scholarship has begun to examine college student food and housing insecurity. Data exist, while limited, indicating that food insecurity disproportionately impacts college students. Previous research has shown that food insecurity rates for college students have ranged from 14% to 59% (Chaparro, Zaghoul, Holck, & Dobbs, 2009; Freudenberg et al., 2011; Gaines, Robb, Knol, & Sickler, 2014; Patton-López, López-Cevallos, Cancel-Tirado, & Vazquez, 2014). The rates of food insecurity among college students are significantly higher compared to the general U.S. population with the national trend depicting that 12.7% of U.S. households experience some level of food insecurity (U.S. Department of Agriculture, 2016). Similarly, the data available also reveal that college students are disproportionately at risk for housing insecurity. Previous research has shown that housing insecurity rates for college students have ranged from 41.7% to 53% (Dubick, Matthews, & Cady, 2016; Tsui et al., 2011).

The prevalence of food and housing insecurity is even more startling for community college students. In 2015, the first national study was conducted at 10 community colleges across 7 states which found that roughly half of all community college students experienced food and/or housing insecurity (Goldrick-Rab, Broton, & Eisenberg, 2015). In regards to the most extreme conditions of food and housing insecurity, 20% of community college students were hungry and 13% of community

college students were homeless (Goldrick-Rab et al., 2015). The second iteration of this research, which was conducted at 70 community colleges in 24 states, found an increased rate of very low food insecurity among community college students with 33% of students experiencing hunger but roughly the same rate of student homelessness (14%) compared to the rate of the previous study (Goldrick-Rab, Richardson, Hernandez, 2017a).

Although these are not academic factors per se, the precarious circumstances associated with financial hardships and social disparities directly interact with an individual's role as a student affecting their ability to invest in college.

A qualitative study of current, former, and potential students at six community colleges across the country explored institutional and personal access and retention issues students wrestled with as they sought a workable balance of college, work, and family responsibilities (Matus-Grossman & Gooden, 2002). Study findings revealed that students who have limited resources are left with precarious conditions of juggling the multiple demands compromising their ability to meet their family's basic needs. Moreover, students in these circumstances attributed a drop in academic performance or failing a course to having missed critical class time or tests due to a personal crisis (Matus-Grossman & Gooden, 2002). However, students reported that assistance from government food and housing programs (i.e. WIC, Food Stamps, and Section 8 housing) were critical supports that had proven helpful while attending college (Matus-Grossman & Gooden, 2002). Correspondingly, these findings infer that unmet food and housing needs can pose additional barriers to academic progress and achieving college success.

A report by the College Board indicated that in the fall of 2014 California enrolled about 1 out of 6 full-time public two-year students in the nation (Ma, Baum, Pender, & Bell, 2015). Additionally, the state of California had the lowest tuition and fee price in that sector (Ma et al, 2015). In 2015, a study was conducted among 22 California community colleges to survey students on their expenses, their aid, and the choices they make when their resources do not stretch far enough (Cochrane & Szabo-Kubitz, 2016). Survey findings from about 12,000 students across the state revealed that 3 in 10 students were solely personally responsible for their housing costs. Furthermore, 68% of financial aid recipients surveyed indicated that with an additional \$3,000 in grants they would spend at least some of that money on food (Cochrane & Szabo-Kubitz, 2016). These data illuminate that many California community college students struggle to meet daily expenses and these realities underscore the importance of recognizing the impact of food and housing insecurity on student progress, retention, and achievement.

There is a growing recognition that community college students have additional needs which require educational programs to provide a broader network of assistance and a more comprehensive approach to student services. Moon Johnson (2015) affirmed that institutions must remember students' basic needs—safety, food, shelter, and resources to survive—and take these factors into consideration when creating an inclusive campus as the future of higher education will also depend on an ongoing commitment to ensuring all students have the resources to succeed. The acknowledgement of the negative educational outcomes stemming from unmet basic needs, such as food and housing

insecurity, call for efforts to ameliorate the external barriers on educational attainment commonly due to a lack of adequate supports by addressing these demands within a community college setting. Undoubtedly, there is substantial promise in repositioning institutions to alleviate external factors that impact students' persistence and completion.

Accordingly, Schudde and Goldrick-Rab (2014) asserted that holistic research, which examines the whole student including challenges encountered outside of campus life, offers greater insight for the steps necessary to improve college completion among low-income students. In general, food and housing insecurity as a college student issue is an emergent field and many best practices for assessing and addressing these needs are still being developed (Goldrick-Rab, Richardson, & Kinsley, 2017b). The majority of existing scholarship to-date largely focuses on undergraduate students attending four-year universities or a combined sample of community college and four-year university students. Research suggests the need to further assess food and housing insecurity specifically among community college students and study more thoroughly the effects of hunger and homelessness on community college student success. Consequently, it is important that supplementary research be conducted to assess food and housing insecurity among community college students in order to support students' needs and promote student success in terms of progress, retention, performance, and achievement.

### **Purpose of the Study**

The purpose of this study is to identify the food and housing needs among community college students, and explore how these needs potentially impact students'

academic success. In particular, this study aims to assess the rates of student food and housing insecurity as well as highlight the characteristics and academic progress of students experiencing these conditions. This study examines the relationship between key student and academic characteristics, and student food and housing insecurity. It also explores the impact of food and housing insecurity on academic behaviors and outcomes specifically, and the educational impact of food and housing insecurity on students more broadly.

### **Research Questions and Design**

A quantitative case study design employing a cross-sectional survey was used to examine the following research questions within the Peralta Community College District:

1. To what extent do community college students experience food and housing insecurity?
2. What are the demographic characteristics of community college students experiencing food and housing insecurity?
3. What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes?

Data gathered via the online survey present a more nuanced understanding of student food and housing insecurity within a localized context, and serve to aid each institution and the district as a whole in enhancing services to promote student success by responding to and meeting students' basic needs security while reducing barriers to academic progress.

The Peralta Community College District (PCCD) is located in the San Francisco Bay Area of California and is comprised of four community college campuses—collectively referred to as the Peralta Colleges—that serve Northern Alameda County: College of Alameda, Berkeley City College, Laney College, and Merritt College. The Peralta Community College District is a considerably large district—serving over 24,000 students during the Spring 2017 term—with a large and diverse student population. As such, there are significant variations across the four institutions in regards to the geographic classification (urban versus suburban) and demographic characteristics of the students served.

In addition to being accessible, there were two primary reasons why the Peralta Community College District was selected. First, Peralta Community College District was an appropriate research site because leaders have actively prioritized student health and wellness evidenced by the district-wide student health services available via the Peralta Community College Health Centers at each campus. Second, institutional leaders are interested in using study results to make improvements to service provision and student success efforts.

**Hypotheses.** There were several hypotheses associated with the above-mentioned research questions for this study. First, it was hypothesized that there would be a significant number of students at the Peralta Community College District who experiencing food and/or housing insecurity. Given existing rates for college students and considering the relatively high cost of living in California as comparison with other

states, this study projected that the rates of Peralta students experiencing food and housing insecurity will be comparable, if not higher, than the rates for community college students indicated in prior research. Secondly, it was hypothesized that the rates of students experiencing food and housing insecurity will be disproportionate across student demographics illuminating significant disparities with some students being more likely than others to be experiencing these conditions. Lastly, this study projected that experiencing student food and housing insecurity affects student academic progress.

### **Conceptual Framework**

The theoretical underpinning for student food and housing insecurity is Maslow's Hierarchy of Needs (1943) a human motivation theory consisting of five sets of goals based on a hierarchy of needs: physiological, safety, love and belonging, esteem, and self-actualization. Maslow's theory suggests that the basic physiological needs (i.e. food) and safety needs (i.e. shelter) must be met before the individual can focus motivation upon the higher level needs and engage in self-actualization behaviors for achieving individual potential (Maslow, 1943).

Thus, basic needs security—consisting of psychological needs such as health, food, and sleep, and safety needs such as shelter—must be established before a student can move up to other motivational levels and eventually towards the highest level of self-actualization behaviors such as those required for success in higher education enabling students actualize their academic capabilities. As such, unstable access to food and shelter (i.e. experiencing food and housing insecurity) makes it difficult for students to

concentrate and perform well in college, ultimately affecting students' academic performance, retention, and completion.

Bean and Metzner's (1985) Nontraditional Undergraduate Student Attrition Model asserts that the decision to dropout for nontraditional students is based on four variables: (1) academic variables such as study habits and absenteeism; (2) background variables such as age, enrollment status, race/ethnicity, and gender; (3) psychological variables such as stress (4) environmental variables such as finances, hours of employment, and family responsibilities. Environmental variables, defined as those factors over which the institution has little control but which might pull the student from the institution, were found to be the most influential (Bean & Metzner, 1985). These environmental variables are presumed more important for student persistence than academic variables such that when environmental variables were poor but academic variables were good, students would leave school and the positive effects of the academic variables on retention would not be seen (Bean & Metzner, 1985). Bean and Metzner (1985) indicated that researchers could use parts of the model as a guide to the study of GPA or other mediating variables that can each be used as dependent variables.

The convergence of Bean and Metzner's (1985) model of nontraditional undergraduate student attrition—a college student retention theory—together with Maslow's (1943) Hierarchy of needs—psychological theory of human motivation—serve to inform the conceptual framework through which this study examines food and housing insecurity in relation to college student success. The conceptual framework displayed in

Figure 1. Is comprised of three components that influence student academic outcomes: student demographics (background variables), food and housing insecurity (environmental variables), and academic behaviors (academic variables). Overall, this model serves to illustrate the relationships between the variables of interest—food and housing insecurity, demographic characteristics, and academic behaviors and outcomes—that inform the research questions for this study.

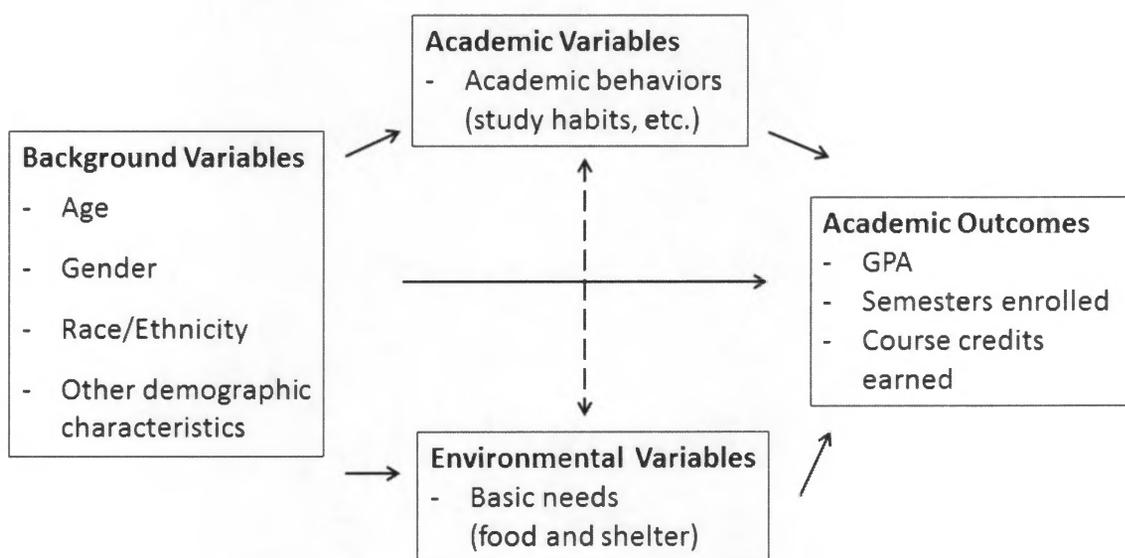


Figure 1. Conceptual framework (adapted from Bean & Metzner, 1985).

### Key Terms

**Food insecurity.** Anderson (1990) defined food insecurity as the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. This study adopts this definition to maintain consistency with the terminology for food insecurity used in previous studies (Goldrick-Rab 2015; 2017a).

**Hunger.** The Committee on National Statistics (CNSTAT) defines hunger as an individual-level physiological condition that may result from food insecurity (USDA ERS, 2015). CNSTAT recommended that USDA make a clear and explicit distinction between food insecurity and hunger when using language to describe ranges of severity of food insecurity. However, the researcher acknowledges that food insecurity is euphemism for hunger. As such, this study still considers “very low” food security to mean experiencing the physiological sensation of hunger.

**Housing insecurity.** Although there is no uniform definition, Goldrick-Rab et al. (2015) described housing insecurity to include housing conditions along a spectrum where homelessness—defined by the McKinney-Vento Homeless Assistance Act Subtitle VII-B as lacking a fixed, regular, and adequate nighttime residence—represents the extreme form of housing insecurity and unaffordable housing, poor housing quality, crowding, sharing housing with others, and frequent moves are other dimensions. This study adopts this definition of housing insecurity to maintain consistency in the terminology used and operationalization of this construct.

**Racially-minoritized students.** For the purposes of this research, “race/ethnicity” refers to the traditional label a person uses to identify one’s affinity to country of origin or culture. The term “racially-minoritized students”—informed by Stewart’s (2013) definition—is used by the researcher instead of phrases such as “underrepresented minority,” “students of color,” “ethnic minority,” and “minority students” in order to acknowledge that race/ethnicity is a social construction used to privilege certain groups

of people while marginalizing others. Rejecting this deficit language is meant to interrupt a label imposed within the education system that views students as deficient on the basis of race/ethnicity. The researcher also utilizes this term as recognition that non-white students now constitute the largest proportion of students in California, thus becoming the new majority. Moreover, the researcher acknowledges that the multiracial category for race/ethnicity tends to include students who experience daily life as non-white yet self-identifying in this category dilutes the representation in non-white categories. Therefore, for the purpose of conducting statistical analyses related to race/ethnicity, this construct is inclusive of those students who identified as Black/African American, Latino/Hispanic, Filipino, Pacific Islander, Native Hawaiian, and American Indian/Alaska Native, and more than one race/ethnicity.

### **Significance of the Study**

The recognition that food insecurity impairs students' academic performance has resulted in the National School Lunch Program which provides K-12 students with free or reduced price meals. Likewise, students attending a four-year university also receive food assistance through the receipt of meal plans, and obtain support for housing as part of the on-campus student housing package. Many of the student issues that K-12 system and four-year university educators encounter in terms of these social disparities in relation to academic achievement are also present in community colleges. Although it would be safe to assume that the adverse impacts of food and housing insecurity hold true for community college students, unlike the K-12 system and four-year institutions no

such systemwide action at the community college level has been taken to address these issues.

In California, two systems of higher education have conducted preliminary studies providing a better understanding of college student food and housing needs within a statewide context. In 2015, Chancellor Timothy White of the California State University (CSU), the largest four-year public university system in the country comprised of 23 campuses, commissioned a study on serving housing displaced and food insecure CSU students (Crutchfield et al., 2016). Similarly, President Janet Napolitano of the University of California (UC) launched the Global Food Initiative in 2014 to better understand the scope of food insecurity among UC students (Martinez, Maynard, & Ritchie, 2016; Rosenberg, 2015). Study findings revealed that among CSU Long Beach students surveyed, 24% of students were food insecure and 12% of CSULB students were housing displaced students (Crutchfield et al., 2016). Among students surveyed across all 10 UC campuses, 42% of UC students reported experiencing food insecurity (Martinez et al., 2016). As a result of these data both systems of higher education have taken on efforts to further assess the prevalence of student food and housing insecurity and take action to address these issues across all of their campuses.

While those stark data affirm a call to action for meeting students' food and housing needs, they also warrant further research, particularly within the context of the California Community Colleges (CCC) system. Although there are existing data on the prevalence of student food and housing insecurity among community college students

nationally, and even though several California institutions have participated in prior studies of food and housing insecurity (Goldrick-Rab et al., 2015; Goldrick-Rab et al., 2017a; Wood, Harris, & Delgado, 2016), to-date there has not yet been a system-wide examination of student food and housing insecurity at California's community colleges. Given the disproportionate rates of food and housing insecurity among college students coupled with the fact that these conditions serve as barriers to student well-being and academic success, it is imperative that community colleges within the state of California take student issues of food and housing into consideration and commence their efforts to investigate the extent of these needs among the students being served.

The findings from this study will help provide a more nuanced understanding of the broader issues of student food and housing insecurity in relation to college student success by situating the research within a local context. Assessing the food and housing needs among students within the Peralta Community College District has the potential to help guide local community college efforts and inform the course of action that is taken in responding to student food and housing insecurity. This context-specific diagnosis will aid each institution and the district as a whole in making informed decisions for meeting the specific needs of their students and implementing student services that promote access to food and housing resources and enable students to actualize their academic capabilities. Increased access to food and housing resources will serve to unclutter the pathway for students to reach their educational goals by reducing barriers to student persistence and promoting student success.

All in all, this research study aims to build linkages across the collaborative work being done pertaining to college student food and housing insecurity in a manner that aligns with current statewide and national efforts. Ultimately, gaining awareness of students' food and housing needs will contribute to a more comprehensive approach to the provision of student services in order to increase retention and graduation rates and promote student success. Furthermore, the study findings will contribute to the emerging national discussion on the importance of building bridges to work across sectors as efforts that support students' path to higher education and promote the community college completion agenda.

## **Chapter Two: Literature Review**

### **Introduction**

This review attempts to synthesize the paucity of research to date on the issues of food and housing insecurity among college students. This review begins with an examination of literature on the extent to which food and housing insecurity are present among college students. This review then moves to a discussion of the association between food and housing insecurity, and academic outcomes. The concluding section is an investigation of institutional responses and existing efforts to address food and housing insecurity among college students.

### **Scope and Structure of Review**

This review focuses on food and housing insecurity within the broad scope of higher education. There is a targeted interest on community college students; however, given the scant research on this topic, pertinent literature on four-year universities has also been included. Overall, the search of peer-reviewed literature was rather limited, yielding close to a dozen journal articles. Studies conducted by educational research organizations as well as reports prepared for national grant funded initiatives were also included as part of this review given the restricted availability of peer-reviewed literature.

### **Prevalence of Food and Housing Insecurity**

It is hard to know how many students experience food and housing insecurity as both conditions are not tracked adequately via national education surveys, thus the best available empirical evidence has come from studies of several college campuses. A study

conducted by Chaparro et al. (2009) is among the first research published that measured the prevalence of food insecurity in a university campus setting. The study employed a cross-sectional survey design to measure food insecurity among non-freshmen (sophomores, juniors, seniors and graduate) students at the University of Hawai'i at Mānoa across randomly selected courses during autumn 2006. Of the 410 students surveyed, study finding revealed that 21% of students experienced food insecurity, with 15% of students having low food security and 6% of students having very low food security (Chaparro et al., 2009).

Data showed that race/ethnicity and living arrangement were significantly different among food-insecure students compared to food-secure students. More specifically, students identified themselves as Hawaiians and Pacific Islanders, Filipinos, and students who reported living on campus and students living off-campus with roommate were at higher risk of food insecurity (Chaparro et al, 2009). Although significant differences in expenditures measured related to monthly spending patterns were not observed between food-secure and food-insecure groups, the authors note that the difference may be obscured given that information on credit card use or students' debt were not collected (Chaparro et al, 2009). In spite of the unique composition of the student sample and distinct conditions particular to living in the state of Hawai'i, the results from this seminal study suggest that food insecurity may exist on other college campuses in the United States.

To that extent, Gaines et al. (2014) conducted a study at a large, public university in Alabama to assess the food insecurity and its potential risk factors. Of the 557 undergraduates (aged 19-25 years and excluding freshmen) surveyed in 2011, results showed that roughly 14% of students experienced food insecurity (Gaines et al., 2014). Moreover, analyses revealed that financial factors were associated with food security status. Students who received financial aid, received some form of food assistance, were financially independent, actively budgeted, and had experienced an exogenous economic shock within the past year were at significantly greater risk for food insecurity (Gaines et al., 2014).

On the other hand, the presence of familial financial support, alternative financing such as credit cards and higher score of food resource adequacy was negatively associated with food insecurity (Gaines et al., 2014). Income was not significantly associated with food insecurity. Similarly, race/ethnicity was not significant in the final multivariate analysis, even though it was significantly associated with food security in the initial analysis (Gaines et al., 2014). Although the study sample was limited to demographics that were more representative of the traditional college experience, the focus on financial and food management aspects provide a more nuanced understanding of food security status among college students.

A more recent study conducted by Bruening, Brennhofer, van Woerden, Todd, and Laska (2016) examined the factors related to food insecurity among college freshmen living in residence halls in an urban setting. This research was conducted at one of the

largest, public universities in the United States located in Arizona. Of the 209 students who completed the online survey, approximately one in three reported experiencing food insecurity; 32% of respondents reported food insecurity in the previous month and 37% of respondents reported food insecurity in the previous 3 months (Bruening et al., 2016). The findings from this study shed light on distinct population of students given that college freshmen were excluded entirely from the previous studies.

The aforementioned body of research focused solely on food insecurity and conducted at a single institution. However, several studies have examined both food and housing insecurity among college students across several campuses. In spring of 2015 the Wisconsin HOPE Lab conducted a study in which 1,007 low-and moderate-income college students at 10 Wisconsin colleges and universities completed a survey on food and housing insecurity. Survey results indicated that 61% of students reported being food insecure at some point during the school year (Wisconsin HOPE Lab, 2016). Study findings also showed that among students who indicated sometimes or often cutting back on food in various ways, 42% stated that the food they purchased didn't last and they lacked the money to buy more (Wisconsin HOPE Lab, 2016).

Comparisons between students attending two-year and four-year institutions for each of the measures indicating more severe forms of food insecurity revealed striking outcomes. Overall, the rates of food insecurity among two-year college students were much higher; sometime more than double that among four-year students. Two-year students were also five times as likely as four-year students to report using food stamps to

purchase food in the past 30 days (Wisconsin HOPE Lab, 2016). Additionally, the rate of housing insecurity among two-year students was also significantly higher with 28% of two-year students having indicated that they were unable to pay their rent or mortgage on time sometime during the academic year compared to 4% among four-year students (Wisconsin HOPE Lab, 2016). Furthermore, 25% of two-year students and 7% of four-year students stated that they “doubled up” or moved in with others because they did not have enough money at some point during the academic year (Wisconsin HOPE Lab, 2016).

Racially-minoritized students reported experiencing food and housing insecurity at disproportionately higher rates. Non-white students were more than twice as likely to report going without food for an entire day (22% of non-white compared to 9% of whites) and roughly twice as likely to report being unable to pay rent or utilities, 11% and 6% respectively (Wisconsin HOPE Lab, 2016). Study findings also uncovered that low-income and even some moderate-income students experienced challenges with food and shelter. While this survey was conducted in Wisconsin with a limited number of campuses, participants who were mostly first-time entering students, and a sample that was predominately white, the data suggests that challenges with obtaining food and shelter are a common experience among college students.

Related research has been conducted to examine both food and housing within insecurity the context of California. Crutchfield et al. (2016) implemented a study to gain insights on how the California State University (CSU), the largest four-year public

university system in the country comprised of 23 campuses, was serving housing displaced and food insecure CSU students. The study utilized a mixed methods approach including interviews, focus groups, and an online survey conducted with CSU faculty, staff, administrators, and a random sample of CSU Long Beach (CSULB) students. Of the 1,039 CSULB students surveyed, results showed that 24% of students were food insecure and 12% were housing displaced students (Crutchfield et al., 2016). These rates among CSU students were significantly higher than the rates perceived among staff, faculty, and administrators surveyed, who estimated that 21% of students were food insecure and 8.7% were housing displaced students (Crutchfield et al., 2016). Moreover, survey data also indicated that students who experience food and/or housing insecurity reported high levels of stress. These data reveal that the issues of food and housing among college students are typically underestimated by key institutional stakeholders and highlight the mental health effects of these issues on students.

Similarly, the University of California (UC) system conducted the Food Access and Security study, the first in-depth systemwide study of its students, in order to gauge the extent of food insecurity among UC students and develop effective responses (Martinez et al., 2016). In spring of 2015, two online surveys were administered to a random sample of students across all 10 campuses. Of the 8,932 undergraduate and graduate students who completed the survey, a combined 42% of UC students reported experiencing food insecurity in past 12 months, of which 19% of students indicated that they experienced “very low” food insecurity consisting of reduced food intake and 23%

of students experienced “low” food security which is characterized by reduced quality of diet (Martinez et al., 2016).

In conjunction with previous studies, findings revealed that food insecurity varied by race/ethnicity with Hispanics and Black students experienced significantly higher rates of food insecurity (59% and 60% respectively); however, rates did not vary by gender. Data also showed that food insecure students were more likely than food secure students to be Pell Grant recipients and to receive federal nutrition assistance (Martinez et al., 2016). In addition, the study found that 57% of food insecure students did not report experiencing food insecurity as children (Martinez et al., 2016). These data show that many college students were new to food insecurity.

Wood et al. (2016) explored the prevalence and influences of food and housing insecurity on California community college students. Findings presented stemmed from the Community College Success Measure (CCSM), an institutional-level needs assessment tool used by nearly 90 community colleges across the nation. Data were derived from a subsample of 3,647 students from California campuses that employed a scale that accounts for experiences with food and housing insecurities, the Stressful Life Events scale. According to the data, 12.2% of students experienced food insecurity and 32.8% of students experienced housing insecurity (Wood et al., 2016).

Moreover, nearly a quarter of students reported experiencing both food and housing insecurity, and students that experience both conditions were overwhelming concentrated in developmental math (Wood et al, 2016). Given the broader purpose and

scope of the instrument from which these data were derived, findings presented also includes a range of predictors of student success for underserved students inclusive of non-cognitive outcomes, gender identity, student engagement, external life pressures, and campus climate (Wood et al., 2016). However, these results go beyond the focus of this review.

Goldrick-Rab et al. (2015) conducted the first large-scale study that examined the prevalence of both food and housing insecurity specifically among community college students. Data were collected in spring of 2015 through a survey of 4,312 community college students at 10 community colleges in 7 states across the nation (Goldrick-Rab et al., 2015). The survey inquired about financial hardships, emotional challenges, and student food and housing needs. The majority of colleges in this study had rates of poverty in their surrounding communities similar to the national average, and the characteristics of the study sample were comparable to national student characteristics. Study findings revealed that approximately one-half of all community college students struggled with food and/or housing insecurity (Goldrick-Rab et al., 2015). In fact, 52% of all respondents were at least marginally food insecure over the last 30 days, and 52% of students indicated that they had experienced at least one form of housing insecurity in the past year (Goldrick-Rab et al., 2015).

Most notably, survey data signified that many students experience both conditions simultaneously. Among the students that reported low or very low levels of food security, 73% also experienced housing insecurity; similarly among housing insecure

students, 58% also experienced food insecurity (Goldrick-Rab et al., 2015). In addition, racially-minoritized students and first-generation students reported experiencing higher rates of food and housing insecurity (Goldrick-Rab et al., 2015). As with the UC study conducted by Martinez et al. (2016), the rates of food and housing insecurity among community college students did not vary by gender. The findings for this study infer that given the high prevalence of food and housing insecurity, these issues tend to occur concurrently among community college students.

In summary, although there is limited national data on food and housing insecurity among college students—and even more so among community college students—the research presented provides critical insights on the extent of the problem, albeit focusing on different populations and institutions. Furthermore, this body of literature highlights key sociodemographic characteristics of college students who experience food and housing insecurity. Finally, this research alludes to a growing recognition of food and housing insecurity as student issues that are visible at campuses across the nation and demonstrates that student often experience these issues concurrently.

### **Food and Housing Insecurity, and Academic Outcomes**

This next body of literature focused on the relationship between the prevalence of food and housing insecurity, and academic outcomes. The City University of New York (CUNY), the nation's largest urban public university system consisting of 24 campuses that are comprised of both four-year institutions and community colleges, undertook one

of the most comprehensive assessments of student health, housing, and food as part of the Healthy CUNY initiative from 2008-2011 in order to analyze the contribution of student and family health to educational achievement and graduation (Freudenberg et al., 2013). As part of the assessment activities, online and telephone surveys were administered to a representative sample of 1,086 CUNY undergraduates at both the two-year and four-year campuses to assess food insecurity, housing instability, and psychological problems. Survey results revealed that 39.2% of students reported that they experienced food insecurity in the past 12 months, and 41.7% of students reported housing instability (Freudenberg et al., 2013).

Additionally, 24.3% of students reported that they experienced both food insecurity and housing instability. Study findings indicated that 21.8% of those students who reported any health or social problems also affirmed that the problem had a significant effect on their academic work, with stress being the most commonly reported obstacle to academic achievement (Freudenberg et al., 2013). This study suggests that a relationship exists between food insecurity, housing instability, and health that can ultimately influence academic progress among college students.

Dubick et al. (2016) conducted the broadest study on college student food insecurity to date by surveying 3,765 students in 12 states and 34 institutions between March and May 2016. The study sample included a wide range of regions and school types, including 8 community colleges and 26 four-year colleges and universities. Consistent with prior studies, 48% of respondents reported experiencing food insecurity

in the previous 30 days, and two-year students reported higher rates of very low food security—qualified as hunger—compared to four-year students, 25% and 20% respectively (Dubick et al., 2016). Likewise, food insecurity was more prevalent among African American students and first-generation students. Among students who reported experiencing food insecurity, 64% reported experiencing some type of housing insecurity and 15% reported some form of homelessness in the past 12 months (Dubick et al., 2016).

Most notably, 32% of food insecure students believed that hunger or housing problems had an impact on their education (Dubick et al., 2016). Among student who reported an impact on their education, 81% of students indicated that hunger or housing problems caused them to not perform as well in their academics as they otherwise could have, 55% reported that these problems caused them not buying a required textbook, 54% reported missing a study session, and 53% reported missing a class (Dubick et al., 2016). These findings illustrate how problems with food or housing can result a range of consequences that ultimately harm students' academic progress.

Relatedly, Silva et al. (2015) conducted a study at the University of Massachusetts, Boston that explored the housing and food vulnerabilities that may serve as barriers to academic success. In the spring and fall semesters of 2014, a self-report survey on housing stability, food security, and class performance was disseminated to randomly selected undergraduate and graduate courses. Survey results from 390 students revealed that nearly a quarter of respondents experienced some form of food insecurity

over the past year. In addition, housing instability rates were disproportionately high given that 20.5% of respondents declared that they had lived at their current place of residence for less than 6 months and 35.4% disclosed that they had moved at least once in the last year.

Study findings also indicated that for housing insecure students, 47.6% were somewhat to very affected in their ability to attend class and 81% were somewhat to very affected in their ability perform in class (Silva et al., 2015). Likewise, among food insecure students, 58.6% were somewhat to very affected in their ability to attend class and 87.5% were somewhat to very affected in their ability perform in class (Silva et al., 2015). The degree to which food insecurity and housing instability impacted their ability to attend and perform in class was statistically significant ( $p < .01$ ) when rates for each group were compared to the rates of students not experience those conditions.

Most notably, 42.9% of students who had experienced homelessness and 29.2% of students who had severe food insecurity were at risk of failing courses or withdrawing/refraining from enrolling in the university courses (Silva et al., 2015). This coincides with previous research findings where among food insecure students who had reported that they believed hunger or housing impacted their education, 25% of students reported dropping a class (Dubick et al., 2016). Similarly, Martinez et al. (2016) found that that food insecure students were more likely than food secure students to report that they had to suspend studies due to financial hardship (10% of food insecure students compared to 3% of food secure students). The findings from this study attest that food

and housing insecurity can negatively affect student class attendance and performance, and students with the most precarious circumstances—those experiencing hunger and homelessness—are at greater risk of not completing their studies.

Several studies have examined the relationship between food insecurity among college students and academic performance. Patton-López et al. (2014) examined food insecurity among 354 students attending a midsize rural university in Oregon. Results from a survey conducted in May 2011 indicated that 59% of college students were food insecure. Moreover, food insecurity was higher among students balancing work and school evidenced by the finding that students who were employed were almost twice as likely to report experiences with food insecurity. Conversely, good academic performance, operationalized as grade point average  $\geq 3.1$ , was inversely associated with food insecurity (Patton-Lopez et al., 2014). This coincides with similar findings from Martinez et al. (2016) which noted that food insecure student were more likely to have a lower grade point average ( $M = 3.1$ ) than their food secure counterparts ( $M = 3.4$ ).

Correspondingly, Morris, Smith, Davis, and Null (2016) surveyed 1,882 undergraduates at four public universities in Illinois during April and May of 2013. Data revealed that 35% of students were food insecure, and there was a significant relationship between food security status and grade point average (Morris et al., 2016). Similar to Patton-Lopez et al. (2014) findings, results from this study also revealed that students with higher GPA ( $\geq 3.0$ ) had more high food security and less very low food security. By contrast, a significant number of students in the 2.00 - 2.99 GPA range reported more

food insecurity compared to students in the other GPA categories (Morris et al., 2016). The findings signify that food insecurity can have adverse effects on optimal academic performance.

In their seminal study, Maroto, Snelling, and Linck (2015) investigated the rates of food insecurity among community college students as well as the relationship between food insecurity and student grade point average (GPA). The study was conducted in the Fall 2012 semester and employed a cross-sectional, intercept survey design across a convenient sample of students from two community colleges, one urban and one suburban, in Maryland. Survey results from 301 respondents demonstrated that 56% of students in the overall sample were food insecure. Specifically 60% of the students at the urban community college were food insecure and 53% of the students at the suburban community college were food insecure (Maroto et al., 2015). Similar to the study conducted by Gaines et al. (2014), income was not significantly associated with food insecurity in this study.

Additionally, students who reported living alone, being single parents, and identified as African-American or multiracial were at increased risk for food insecurity (Maroto et al., 2015). The most imperative results from this study showed that food insecure students were more likely than food secure students to report a lower GPA (2.0 - 2.49) versus a higher GPA (3.5 - 4.0) (Maroto et al., 2015). The corresponding findings infer that college students who experience food insecurity are significantly less likely than their food secure peers to fall in the high achieving GPA category.

Overall, the prevailing literature illuminates the impending educational outcomes as a result of students experiencing food and housing insecurity. The presence of these conditions interacts with student health and well-being; ultimately impairing students' ability to fully engage in college. The documented impact on academic progress, class attendance, and academic performance suggests that food and housing insecurity may also be impacting college student retention and completion rates.

### **Institutional Responses and Existing Efforts**

Given the prevalence of food and housing insecurity among college students and the effects of these conditions on educational outcomes, several studies attempt to document institutional responses and existing efforts. Broton, Frank, and Goldrick-Rab (2014) conducted a study that explored students' challenges obtaining adequate food, housing, sleep, and safety, and examined how institutions understood and responded to students' needs. Between 2011 and 2014, a total of 59 interviews were conducted with college administrators, faculty, and services providers at eight public broad access colleges (5 two-year and 3 four-year institutions) across five states: California, Florida, New York, Louisiana, and Wisconsin (Broton et al., 2014).

Qualitative data uncovered three types of responses from institutional leaders. The first type of response consisted of college leaders who embraced inclusivity of basic needs services as central to the mission of the college (Broton et al., 2014). A second type of response encompassed respondents who expressed that basics needs should be addressed as a prerequisite to attending college and questioned whether students who

experienced these issues belonged in college. The third response was comprised of respondents who expressed a desire to help and sympathized with students' needs, but mainly engaged in wishful thinking and did not take any institutionalized action or provided particular support. Results from this study highlight how the local context of an institution coupled with key stakeholders' perspectives play an important role for colleges' consideration of students' needs and the determination of potential and appropriate responses.

Comparably, Crutchfield et al. (2016) conducted a study of the CSU system that also examined institutional perceptions of these issues and strategies for serving housing displaced and food insecure students. Data were collected through document analysis of all 23 campuses and interviews (n=92) and focus groups (n=23) with CSU faculty, staff, and administrators. Study findings affirmed that campus personnel expressed aspirational thinking to support students; however, it was restrained by actual or perceived institutional barriers. On the other hand, five campuses were found to have incorporated students' needs as part of the university mission and student success directives (Crutchfield et al., 2016). Moreover, study data specified that of the 23 campuses, 11 campuses had programs for food insecure students and 1 campus had a program directed at housing displacements (Crutchfield et al., 2016). The findings from this study draw attention to the role of institutional leadership and campus commitment, as well as the limited extent to which program models have been implemented to address student housing and food insecurity across the CSU system.

A growing understanding that students are unable to meet their basic needs with existing supports has led community colleges across the nation to broaden their student services by embedding public benefit access strategies into student services operations such as financial aid, counseling, and advising. Community colleges have taken existing community and government social safety net resources and relocated them on-campus by partnering with foundations and non-profit organizations that have developed various interventions aimed at providing more comprehensive models to student services as part of larger poverty alleviation efforts.

Examples of three initiatives at community colleges that combine case management and public benefits access to low-income community college students include (1) Single Stop USA's Community College Initiative, which operates at 21 campus in 8 states (Broton et al., 2014), (2) Benefit Access for College Completion, a multi-year demonstration that occurred at seven colleges in six states (Price, Long, Singer Quast, McMaken & Kioukis, 2014), and (3) Center for Working Families (CWF) Community College Learning Network—currently referred to as the Working Student Success Network—which operated at 15 colleges nationally at the time it was evaluated (Liston & Donnan, 2012).

Preliminary program evaluation data have shown that these community college initiatives support student success with program participants outperforming the general student population on year-to-year retention (Goldrick-Rab, Broton, & Gates, 2013), enrolling in more terms (Price et al., 2014), and a term-to-term retention rate of

participants (80-85%) that exceeds the rate of general student population (66-70%) (Liston & Donnan, 2012). These data affirm the importance of providing services that address students' food and housing needs in efforts to promote academic persistence and achievement. Overall, this scholarship suggests the need for a more effective approach that merges social and educational policy strategies to create comprehensive support services within community colleges in order to mitigate external barriers and improve student academic outcomes.

### **Conclusion**

In summary, a heightened awareness has developed in regards to the issues of food and housing insecurity among college students which has led to research examining how food and housing insecurity may act as barriers to academic success. As a result, a growing number of colleges and universities have begun to address food and housing insecurity on their campuses. This review alludes to the need for community colleges to expand student services to more comprehensive models that address nonacademic student needs in order to overcome external circumstances that likely inhibit success.

Despite the widespread urgency of the issue of college student food and housing insecurity, there is a lack of general coherence among existing research due to different populations and institution types. Maroto et al. (2015) examined the relationship between food insecurity among community college students and academic outcomes operationalized in the form of GPA, but this was in the context of one state and does not consider housing insecurity. Similarly, Dubick et al. (2016) considered the educational

impact of food and housing insecurity, but the reported outcomes are for a national sample comprised of both community college and four-year students. Wood et al. (2016) investigated the influence of food and housing insecurity among California community college students as a subset analysis from a larger study that focused on broader socioecological predictors inclusive of non-cognitive outcomes, gender identity, and campus climate. The scope of existing literature warrants additional research to further assess food and housing insecurity specifically among community college students, and study more thoroughly the effects of hunger and homelessness on community college students' success.

In conclusion, the review of the literature points to three implications for future research. First, more research should be conducted that examines the prevalence of food and housing insecurity specifically among community college student populations. Secondly, future research should assess the impact of food insecurity and housing insecurity on academic behaviors and outcomes such as performance, retention, persistence, and completion. Lastly, research is needed that investigates the effect of programs and services put in place by campuses to address food and housing insecurity, and examines students' experiences with the use of these services.

## **Chapter Three: Methodology**

### **Introduction**

The purpose of this study is to identify the food and housing needs among community college students, and explore how these needs potentially impact students' academic success. In particular, this study aims to assess the rates of student food and housing insecurity as well as highlight the characteristics and academic progress of students experiencing these conditions. A quantitative case study design employing a cross-sectional survey was used to examine the following research questions within the Peralta Community College District:

1. To what extent do community college students experience food and housing insecurity?
2. What are the demographic characteristics of community college students experiencing food and housing insecurity?
3. What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes?

Data gathered via the online survey present a more nuanced understanding of student food and housing insecurity within a localized context, and serve to aid each institution and the district as a whole in enhancing services to promote student success by responding to and meeting students' basic needs security while reducing barriers to academic progress.

This chapter provides an overview of the study methods and explicates how the data were used to answer the abovementioned research questions. The research design is described first, followed by the role of the researcher. Next, it reviews the setting and sample, and ethics and protection of human subjects. It then discusses the instrumentation and describes the procedures for data collection and analysis. This chapter concludes with the methodological limitations.

### **Research Design**

A quantitative case study employing a cross-sectional survey design was used to accomplish the study's purpose and answer the research questions. The overall study methodology resembled those of prior research asking similar questions with comparable populations. A case study design allowed for food and housing insecurity among community college students to be understood within a localized context. As such, the Peralta Community College District serves as the case for in-depth examination to reveal both the breadth and depth of food and housing insecurity among the students being served by the district (McDavid, Huse, & Hawthorn, 2013).

Moreover, the cross-sectional survey design was selected in order to capture the state of the individuals surveyed at a particular moment and collect a wide variety of information from a large number of people (Boslaugh, 2012). Although the survey data are captured at a given point in time, the survey items asked about experiences over a longer time period. Specifically in the last 30 days for experiences related to food insecurity and the past 12 months for conditions related to housing insecurity. Questions

related to the direct impact of food and housing problems were also asked within the context of the last 12 months. The context for reporting the use of available services is framed based on the duration of their time as a student at the Peralta Community College District.

Finally, the survey was administered online to enable students to participate and submit their responses much faster than a traditional paper survey or telephone survey. Since the Peralta Community College District primarily communicates with students via email and messages to their online accounts, students are accustomed to receiving electronic communications making email notification of the online survey a viable component of this research.

### **Role of the Researcher**

As the primary researcher, I have chosen this study because of personal and professional reasons. I did not work at the community college district in which this study was conducted nor was I a former student at any of the institutions within this district. Thus, I had no immediate access to potential participants or existing relationships district-level administrators and personnel. However, the combination of my professional training - I hold a master's degree in public health - together with my volunteer and work experiences has provided me with a background and understanding of the linkages between health, education, and student success. As someone who personally experienced struggling with food and housing insecurity as a community college student, and as a student services professional who encountered students experiencing food and housing

insecurity, I have contended with the issue being investigated first-hand. I know that I share a similar story with those students for whose education I am advocating for. As such, I have a personal dedication to address basic needs security particularly for community college students.

Relatedly, my attendance at two historic conferences as doctoral student has facilitated avenues for collaboration with scholars and practitioners leading current statewide and national efforts to address college student food and housing insecurity. In April 2016, I joined more than 150 practitioners, policymakers, and researchers in Milwaukee, Wisconsin for the #RealCollege Convening, the first-ever national meeting about college student food and housing insecurity. Likewise, I attended another inaugural conference within the California State University (CSU) system in June 2016 - the CSU Conference to Best Meet the Needs of Housing Displaced and Food Insecure Students. The convergence of my personal and professional experiences serves as the impetus for the positionality through which I conduct this research.

### **Setting and Sample**

The research site for this study was the Peralta Community College District (PCCD) which is located in the San Francisco Bay Area of California. In addition to being accessible, there were two primary reasons why Peralta Community College District was selected. First, the Peralta Community College District was an appropriate research site because leaders have actively prioritized student health and wellness evidenced by the district-wide student health services available via the Peralta

Community College Health Centers at each campus. Second, institutional leaders are interested in using study results to make improvements to service provision and student success efforts.

The Peralta Community College District is comprised of four community college campuses—collectively referred to as the Peralta Colleges—that serve Northern Alameda County: College of Alameda, Berkeley City College, Laney College, and Merritt College. PCCD is a considerably large district—serving over 24,000 students during the Spring 2017 term—with a large and diverse student population. As such, there are significant variations across the four institutions in regards to the geographic classification (urban versus suburban) and demographic characteristics of the students served. Nevertheless, the challenges related to basic needs security faced by community college students across each of the four institutions provide a similar context to those any Peralta student may encounter given that their experiences are centered as part living and studying in the San Francisco Bay Area.

The target population from which this sample was drawn was the entire PCCD student population. This sampling method was selected because surveying the population of students enrolled more accurately reflects the district's overall student characteristics and is more reliably than surveying a random sample of students. Furthermore, the survey was implemented district-wide, as opposed to one institution, in order to get a wide range of survey participants from students across the various campuses and to provide a broader setting that allowed for a more comprehensive snapshot on the status of

food and housing insecurity among Peralta students. The eligibility criteria for participation in this research study were as follows: (1) 18 years of age or older; (2) a student at one of the four community colleges within the Peralta Community College District; and (3) enrolled in the current semester during which the survey was administered.

The online survey was administered to the entire population of students enrolled at the Peralta Community College District for the Spring 2017 semester. In general, fielding the survey at the beginning of the semester is more likely to capture food and housing insecure students before they withdraw from courses or stop out for that term. To gather the most information from the population, the survey was sent to 24,122 students whose email addresses appeared on a list of students who were enrolled on February 6, 2017. This date was one day after the deadline to add and drop regular session classes, and one day after the census date when the districts' official enrollment was determined for the term. Based on an overall study population of 24,122 students, the recommended sample size with a 95% confidence interval and 5% margin of error is 379 students (Survey Monkey, 2017). The final sample of student participants in this research ( $N = 693$ ) exceeds that recommendation and allows for statistical analysis related to significance.

Although all Peralta students who were enrolled in the Spring 2017 semester received an email invitation to participate in the online survey (Appendix A), only those that met the eligibility criteria were included in the analysis. The survey yielded 732

respondents. Upon review of the results, those survey respondents who were not eligible to participate since they reported that they were not at least 18 years of age ( $n = 14$ ) were excluded from the study sample and target population. Moreover, those respondents who did not answer the eligibility confirmation questions ( $n = 25$ ) were excluded from the study sample when cleaning the data during the data analysis stage of this research. After eliminating the 43 respondents for the aforementioned reasons, a total of 693 respondents remained in the final sample. The response rate for this survey was 2.87% ( $N = 693$ ); however, this is a conservative estimate as the population that met the eligible criteria may have been lower than 24,108 students and this rate assumes that all email reached the students. The final study sample reflected the population of the Peralta students who were available and willing to complete the survey during the indicated timeframe.

### **Ethics and Protection of Human Subject**

This study adhered to all Institutional Review Board (IRB) standards for protection of participants' rights. The San Francisco State University IRB determined this research to be is "Exempt" from their processes on November 29, 2016 (Protocol Number E16-193). Additionally, an application to conduct research at the Peralta Community College District was submitted and reviewed by the Office of Institutional Research. District approval was received on January 19, 2017 and all activities for this study were determined to be in compliance with existing legal and ethical codes.

Participation was voluntary and respondents had the ability refuse to answer any question and stop the survey at any point prior to submission of the survey. All survey

data were anonymous and no personal information was collected. The online survey was housed in Qualtrics, the secure survey software provided by San Francisco State University for which access can only be obtained with the researcher's unique credentials. All data files were encrypted and stored in a password protected laptop.

Study participants may have experienced anxiety or stress as well as fear or discomfort in disclosing precarious circumstances related to food and housing insecurity, including experiencing hunger or homelessness. To reduce these risks, potential participants were briefed about the nature of the survey, acknowledging that there may be some personal discomfort with the content of certain questions, as part of the implied consent procedures (Appendix B). As part of the survey completion message, respondents were given a list of referrals to food and housing related programs and services specific to the geographic location of the recruitment site (Appendix D). The information provided included resource finder services for local community organizations, such as food banks and homeless shelters, to mitigate immediate need as well as the social services agency for the respective county to access more long-term programs and services.

### **Instrumentation**

The instrumentation used for this study consisted of a 42-item online survey. The development of the instrument used in this study was informed by measures employed in prior research studies examining college student food and housing insecurity (Goldrick-Rab et al., 2015; Martinez et al., 2016; Tsui et al., 2011; Wisconsin HOPE Lab, 2016).

This survey replicated portions of existing instruments while also modifying survey items to better understand the needs of Peralta students more specifically. The questionnaire was available in English only. The online survey was developed and disseminated via the Qualtrics survey software available through San Francisco State University.

The online survey began with the informed consent (Appendix B) followed by a set of eligibility confirmation questions (Appendix C). The core instrument was comprised of five main sections: (1) food insecurity; (2) housing insecurity; (3) coping mechanisms; (4) student and academic characteristics; and (5) sociodemographics. All study participants were asked questions about their access to food and eating habits (food insecurity); living situation and housing-related experiences (housing insecurity); economic experiences and use of available services (coping mechanisms); college experience (student and academic characteristics); and personal background.

**Food insecurity.** To assess food insecurity among students, the survey instrument included the U.S. Department of Agriculture's (USDA) 6-item Food Security Survey Module (FSSM) (USDA ERS, 2012). The six-item module is a subset of the U.S. Adult Household Food Security 10-item module and the U.S. Household Food Security 18-item module. The six-item version has been shown to have reasonably high specificity and sensitivity and minimal bias, and has given similar results compared to the longer 18-item version (Blumberg, Bialostosky, Hamilton, & Briefel, 1999; USDA ERS, 2012). The six-item version was chosen over the longer version to minimize response

burden, errors due to skip patterns, and coincide with the FSSM version used in previous studies (Goldrick-Rab et al., 2015; Martinez et al., 2016).

The USDA FSSM consists of questions about respondents' experiences in the past 12 months; however, the questionnaire can be modified to a 30 day reference period. This study used the 30 day reference period to coincide with the measures used in the first national study on community college student food and housing insecurity (Goldrick-Rab et al., 2015). The operational measures of food insecurity are displayed in Table 1.

Table 1

*Food Insecurity Operational Measures, Level, and Possible Responses*

Variable	Operational measures	Level	Response/Score
	In the last 30 days, would you say the following statement was often, sometimes, or never true for you? "The food that I bought just didn't last and I didn't have money to get more."	Ordinal	Often True = 1 Somewhat true = 1 Never True = 0 Don't know = 97
	In the last 30 days, would you say the following statement was often, sometimes, or never true for you? "I couldn't afford to eat balanced meals."	Ordinal	Often True = 1 Somewhat true = 1 Never True = 0 Don't know = 97
Food Insecurity	In the last 30 days, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?	Dichotomous	Yes = 1 No = 0 Don't know = 97
	<i>If yes-</i> In the last 30 days, how many days did this happen?	continuous	3 days or more = 1 1- 2 days = 0 Skipped = 0
	In the last 30 days, did you ever eat less than you felt you should because there wasn't enough money for food?	Dichotomous	Yes = 1 No = 0 Don't know = 97
	In the last 30 days, were you ever hungry but didn't eat because there wasn't enough money for food?	Dichotomous	Yes = 1 No = 0 Don't know = 97

Food security status was assigned according to the USDA user notes for coding and scoring responses (USDA ERS, 2012). For questions with choices of “often true”, “sometimes true”, and “never true,” responses were counted as a “Yes” if students answered “often” or “sometimes” true. For the question that asked about the frequency of an occurrence, answers of 3 days or more were counted as “Yes” and skipped response because of a “no” response to the previous question were counted as “No.” The sum of affirmative responses was used to generate a raw score (range: zero to six) for each respondent as displayed in Table 2. A raw score of zero indicates high food security; a raw score of one indicates marginal food security; raw scores of between two and four indicate low food security; and raw scores of five and six indicate very low food security.

Table 2

*Classification and Scoring of Food Security*

Food security level	Raw scores	Definition (USDA ERS, 2015)	Food security status
High food security	0	No reported indications of food-access problems or limitations.	
Marginal food security	1	Anxiety over food sufficiency or shortage of food. Little or no indication of changes in diets or food intake.	Food secure
Low security	2 - 4	Reports of reduced quality, variety, or desirability of diet. Previously known as food insecurity without hunger.	
Very low security	5 - 6	Reports of multiple indications of disrupted eating patterns and reduced food intake. Previously known as food insecurity with hunger.	Food insecure

Once raw scores were generated, the level of food security was assessed as an ordinal variable with four categories: high security, marginal security, low security, and very low security. Food security status was then recoded as a dichotomous variable (yes/no) where “low food security” and “very low food security” were combined to represent “food insecurity.” Only those respondents who answered all six items of the food security scale were included for scoring. Respondents who indicated "Don't know" to an item were recoded as missing and were not included (Bickel, Nord, Price, Hamilton, & Cook, 2000).

**Housing insecurity.** Currently, there is no validated instrument for assessing student housing insecurity. Housing security takes somewhat different forms depending on the circumstances resulting in widespread variation in the ways to measure housing security and homelessness. This construct was therefore measured by utilizing survey items adapted from previous research studies where the survey content was available in the publication (Goldrick-Rab et al., 2015; Tsui et al., 2011; Wisconsin HOPE Lab, 2016). When items pertaining to housing insecurity and homelessness in this survey were compared to questions used the previous studies, there was only a slight variation in the wording—this deviation was intended for reader clarity. The final survey items for housing insecurity and homelessness and the 12 month timeframe used in this study were intended to coincide with the measures from first national study on community college student food and housing insecurity (Goldrick-Rab et al., 2015).

Twelve questions were used to assess housing insecurity and homelessness in which study participants are asked to report on their living situation and housing-related experiences in the past 12 months. As displayed in Table 3, six of the survey items are indicators related to housing insecurity more broadly and six of the survey items pertain to indicators related to homelessness. Housing insecurity was coded and scored using the same procedures as the first national study (Goldrick-Rab et al., 2015). Respondents who indicated that they experienced at least one out of the six forms of housing insecurity were considered “housing insecure.” Housing insecurity was recoded as a dichotomous variable (yes/no).

Homelessness, the most extreme form of housing insecurity, was recoded as a dichotomous variable (yes/no). Respondents who indicated that they experienced at least one of the six forms of homelessness were considered “homeless.” For the purpose of data analysis using inferential statistics, respondents who indicated that they experienced at least one out of the twelve conditions related to housing insecurity or homelessness were considered “housing insecure” (i.e. the insecure category includes respondents that are homeless) unless otherwise noted. Collapsing housing insecurity and/or homelessness into an overarching “insecure” category allowed large enough cell counts to conduct the appropriate analyses.

Table 3

*Housing Insecurity Operational Measures, Level, and Possible Responses*

	Operational measures	Level	Response/Score
Indicators of Housing Insecurity Status	In the past 12 months, have you experienced a rent increase that made it difficult to pay your rent?	Dichotomous	Yes = 1 No = 0
	In the past 12 months, have you been unable to pay the full amount of rent or mortgage on time?	Dichotomous	Yes = 1 No = 0
	In the past 12 months, have you been unable to pay the full amount of utilities (gas, oil, or electric bill) on time?	Dichotomous	Yes = 1 No = 0
	In the past 12 months, how many times have you moved?	Continuous	2 or more = 1 0-1 time = 0
	In the past 12 months, have you lived in shared residence with another family (related or unrelated)?	Dichotomous	Yes = 1 No = 0
	In the past 12 months, have you moved in with other people, even for a little while, due to financial problems?	Dichotomous	Yes = 1 No = 0
<i>Please indicate whether you have experienced any of the following at any point during the past 12 months: Indicate "yes" or "no" for each statement.</i>			
Indicators of Homeless ness	Have you been thrown out of a home by someone in the household?	Dichotomous	Yes = 1 No = 0
	Have you been evicted from a home by a landlord?	Dichotomous	Yes = 1 No = 0
	Have you stayed in a shelter?	Dichotomous	Yes = 1 No = 0
	Have you stayed in an abandoned building, in an automobile, or any other place not meant for regular housing, even for one night?	Dichotomous	Yes = 1 No = 0
	Was there ever a time when you did not know where you were going to sleep at night, even for one night?	Dichotomous	Yes = 1 No = 0
	Was there ever a time when you did not have a home?	Dichotomous	Yes = 1 No = 0

The items used for this survey closely resembled the six items recommended for measuring housing insecurity, and five out of the six items recommended for measuring homelessness as indicated in the guide for assessing basic needs insecurity developed by the Wisconsin HOPE Lab that was released post data collection for this study (Goldrick-Rab et al., 2017b). Only one survey item for homelessness in this study deviated from the measurement recommended in the guidebook (Goldrick-Rab et al., 2017b) and previous studies conducted (Goldrick-Rab et al., 2015, 2017a). Whereas the Wisconsin HOPE Lab surveys asked the question “Currently, where do you live?” with the option of selecting the response “do not have a home,” this study asked respondents to indicate whether in the past 12 months “there was ever a time when they did not have a home.” The deviation in phrasing of this survey item for homelessness occurred as a result of the description for the survey item available prior to data collection for this study which informed the researchers’ decision to keep all survey items pertaining to homelessness consistent within the 12-month timeframe.

**Coping mechanism.** External services received by students as means to offset their unmet basic needs were considered as extraneous variables that may influence this study. Two questions in this survey asked study participants to report on their economic experiences and use of available services and programs. To assess how students may be coping with conditions of food and housing insecurity, a question related to receipt of external assistance was created from a short list of food- and housing-related public benefits and services used by people who may be struggling to make ends meet that were

compiled from existing literature (Goldrick-Rab et al., 2015, Waters Boots, 2010). This question also included pertinent on-campus programs and services within the Peralta Community College District.

A question pertaining to affordable housing was also included based on previous research indicating that spending more than 50 percent of the total household income on housing is considered an indicator of housing insecurity (Kushel, Gupta, Gee, & Haas, 2006; Tsui et al., 2011). Given the high cost of living in the San Francisco Bay Area, the 50 percent figure was used as a more appropriate estimate than the standard definition of affordable housing by the U.S. Department of Housing and Urban Development (2017) which indicates that paying more than 30 percent of a household's income for housing is considered a cost burdened where families may have difficulty affording necessities such as food, clothing, transportation and medical care.

**Student and academic characteristics.** The 12 questions displayed in Table 4 related to student and academic characteristics were informed by previous literature in order to gauge students' progress by assessing academic behaviors and outcomes. The two questions in this survey inquiring about the self-reported educational impact of food and housing insecurity were adapted from a previous study (Dubick et al., 2016).

**Sociodemographics.** The fifth and final section of the survey consisted of 10 questions in which study participants were asked to report on their personal background. The key variables assessed were as follows: age, gender, race/ethnicity, citizenship status, parental education level, parenting status, employment status, and socioeconomic status.

Table 4

*Student and Academic Characteristics Variables, Operational Measures, and Level*

Category	Variable	Operational measures	Level
Student	Current Student	Are you enrolled in any courses for the Spring 2017 semester?	Dichotomous
	College Affiliation	Which community college campus(es) are you enrolled at for the Spring 2017 semester?	nominal
	Unit load	How many units are you currently enrolled in for the Spring 2017 semester?	ordinal
	Financial Aid Recipient	Did you receive any form of Financial Aid (such as grants, scholarships, loans, work-study) for the Spring 2017 semester?	Dichotomous
Academic	First-time Student	Is Spring 2017 your first semester as a student at the Peralta Community College District?	Dichotomous
	Academic Behavior	On average, how many hours per week do you spend studying, doing homework, or working on class projects?	continuous
	Academic Outcome	How many semesters have you been enrolled at the Peralta Community College District?	continuous
	Academic Outcome	What is the estimated total number of course credits you have earned at the Peralta Community College District?	continuous
	Academic Behavior	Since you first enrolled at the Peralta Community College District did you ever have to suspend your studies for at least one semester?	Dichotomous
	Academic Outcome	Which of the following best describes your overall Grade Point Average (GPA) at the Peralta Community College District?	ordinal
	Academic Outcome	In the last 12 months, have hunger or housing problems had an impact on your education? <i>If yes, have hunger or housing problems caused you to do any of the following?</i>	Dichotomous
	Academic Behavior	<input type="checkbox"/> Miss a class <input type="checkbox"/> Miss a study session <input type="checkbox"/> Opt not to join an extracurricular activity <input type="checkbox"/> Not buy a required textbook <input type="checkbox"/> Drop a class <input type="checkbox"/> Not perform as well in your academics as you otherwise could have	Dichotomous

### **Data Collection and Analysis**

Data collection occurred via the administration of the online survey previously described that was distributed to Peralta students during the spring of 2017. Access to the survey began on February 6, 2017 and remained active for three weeks to allow for weekly communication with potential participants. Data collection was facilitated by the recruitment site—the Peralta Community College District—which disseminated the email invitation to potential participants on the researcher’s behalf. The recruitment efforts consisted of an initial email invitation to participate, a follow-up reminder, and a third and final request to participate. No monetary incentives were provided for participation in this survey.

Survey data were analyzed beginning in March of 2017 once the data collection phase had concluded. Survey data were downloaded from the Qualtrics survey software and loaded into the IBM Statistical Package for the Social Sciences (SPSS) software version 22.0 in order to conduct all analyses. As delineated by Creswell and Plano Clark (2010), the following six procedures for analysis of quantitative data were taken: preparing the data for analysis, exploring the data, analyzing the data, representing the data analysis, interpreting the results, and validating the data and interpretations. All survey data were combined to study the results and look for large trends across the Peralta Community College District. When appropriate, data were analyzed separately for each community college within the district to consider college variances in student responses across institutions.

To begin, descriptive statistics were conducted to determine the scope of community college students experiencing food and housing insecurity. Specifically, frequency and percentage were used to describe the overall sample population as well as the percentage of the sample population who experienced food and housing insecurity. Frequencies and percentages were also computed to explore the responses to individual survey items related to food insecurity, housing insecurity, and homelessness.

Next, descriptive and inferential analyses were conducted to explore the relationship among food and housing insecurity and key variables to determine potential disproportionate impacts among student populations. Explicitly, cross-tabulations and chi-square tests were computed for all relevant characteristics—demographic, student, and academic—in order to identify significant differences between food secure and food insecure students, and between housing secure and housing insecure students. For categorical variables (including both nominal and ordinal data), chi-square tests were conducted using a  $p$ -value  $< .05$ . In cases where chi-square tests were not useful because expected values were less than 5, categories were collapsed wherever possible to increase the expected values. Respondents who indicated "Don't know" to an item were recoded as missing and were not included in the analyses that used inferential statistics.

Although the survey data were collected at one point, analyses were conducted to infer potential effects across time. Inferential statistics were used to examine differences between food and housing security status, and student and academic characteristics as well as academic behaviors and outcomes in order to explore the potential effects of basic

needs insecurity on academic progress. In particular, independent samples t-tests were used for continuous data – hours per weeks spent on school-related activities, total semesters enrolled and total course credits earned. Results from these analyses are reported in Chapter Four.

### **Limitations**

Currently, there is no nationally representative study of college student basic needs security as this an emergent field and best practices are still being developing (Goldrick-Rab et al., 2017a, 2017b). In spite of this study's methodological attempts to reduce potential biases, it is important to note that the findings are limited by the low response rate. The 2.87% response rate for this study falls short in comparison to previous studies with similar populations. In terms of a statewide comparison, the response rates for previous studies on student food and housing insecurity in California were 21% response rate for the CSU study (Crutchfield et al.,2016) and 10-28% response rate for the UC system-wide study (Martinez et al., 2016). Furthermore, the first national study on food and housing insecurity among community college students had a 9% response rate (Goldrick-Rab et al., 2015), followed by a 4.5% response rate for the second iteration of that research (Goldrick-Rab et al., 2017a). Since this study did not provide a monetary incentive many students may have chosen not to participate, including those with the most precarious external circumstances pertaining to food and housing needs.

Another limitation is the generalizability of the findings given the non-representative sampling. A detailed comparison of the survey respondents' demographic distribution with that of the Peralta Community College District's population is presented in Chapter Four. Although this comparison revealed a divergence in the proportions by key characteristics, sample weights were not applied to the survey data. Data were not weighted by key demographics (i.e. race/ethnicity, age, and gender) since only about 80% of survey respondents provided demographic data and applying weights by these characteristics would significantly reduce the sample size. Furthermore, sample weights by college were not applied to the survey data due to students' ability to be enrolled at multiple community colleges within the Peralta Community College District during the Spring 2017 semester. Still, the omission of sample weights necessary to reduce sample bias creates a lower degree of generalizability of the study findings.

As a result of these limitations, some uncertainty exists as to whether the estimated prevalence of food and housing insecurity for the Peralta Community College District student population might be biased upwards, downwards, or neither. On the one hand, students struggling with food and housing insecurity might have been more inclined to take the survey - thus overestimating the prevalence of these conditions. On the other hand, food and housing insecure students are also less likely to have received the survey as this population is especially unlikely to have regular email or computer access. Given that this were self-reported data, it is also possible that survey respondents chose not to disclose basic needs insecurity—particularly food and housing insecurity—or

other possibly stigmatizing circumstances. Either of the two aforementioned scenarios could have led to an under-representation in this study sample, and thus an underestimate of the true prevalence of these conditions.

Therefore, it is possible that the sample statistics for this study differ from the actual value in the overall PCCD student population. The limitations presented serve as a cautionary note for the generalizability of the findings from this study. In conclusion, the study design resulted from a concerted effort to consistently measure both food and housing security in a manner that converges in many ways with prior research conducted. Despite the current limitations—whether they over- or under-estimate the true prevalence of these conditions—these data are the first attempt to provide some insight to student food and housing insecurity at the Peralta Community College District.

## Chapter Four: Report of Findings

### Overview

This study was designed to assess the rates of food and housing insecurity among students at the Peralta Community College District, and highlight the characteristics and academic progress of students experiencing these conditions. This chapter describes in detail the results from an online survey administered to adult students enrolled at the Peralta Community College District during the Spring 2017 semester. This study aims to provide a more nuanced understanding of the broader issues of student food and housing insecurity in relation to student success examined within a localized context. The research results presented in this chapter will explore these relationships.

### The Findings

This chapter is separated into five parts that are organized in response to this study's research questions. The first section provides an overview of the sample characteristics in comparison with the district-wide population. The second section, *research question #1*, discusses the extent to which student respondents reported experiencing food and housing insecurity. The third section, *research question #2*, describes the relationship between demographics characteristics and student food and housing insecurity. The fourth section, *research question #3*, details the relationship between key student and academic characteristics and student food and housing insecurity. It also examines the impact of food and housing insecurity on academic behaviors and outcomes specifically, and the educational impact of food and housing

insecurity on students more broadly. The final section, *summary of results*, concludes this chapter by summarizing the research findings.

**Sample overview.** The survey response rate was 2.87% (N = 693), and students from all four of the Peralta Colleges participated in the survey. The mean age among student respondents was 29.5 years ( $SD = 11.14$ ). A comparison of characteristics between the study sample with the latest district-wide population data available (Spring 2016 term) is presented in Table 5.

Among survey respondents, 21.8% of students reported being enrolled at more than one college within the Peralta Community College District for the Spring 2017 semester. In terms of race/ethnicity distribution, White, Filipino and Pacific Islander/Native Hawaiian, American Indian/Alaska Native, and multiracial students were overrepresented while Asian, African American, and Latino students were underrepresented. In terms of gender distribution, women comprised 70% of the sample compared to 42% of the district-wide population.

The divergence in the proportions—particular for race/ethnicity and gender—between this sample and those for the district population is a limitation to the representativeness of this sample. Therefore, the results of the study may have a lower degree of generalizability due to sample bias. The final study sample reflected the population of the Peralta students who were available and willing to complete the survey during the indicated timeframe. As such, consideration should be taken for how research results presented are generalized to the larger PCCD population.

Table 5  
*Sample Characteristics as Numbers and Percentages Compared to District-Wide Proportions*

Characteristic	Overall sample (N = 693)		PCCD SP 2016 (N = 25,883)
	n	%	%
College Affiliation (n = 693) <sup>a</sup>			
College of Alameda	149	21.5%	26.8%
Berkeley City College	276	39.8%	28.2%
Laney College	247	35.6%	47.0%
Merritt College	204	29.4%	26.2%
Peralta Colleges Enrollment (n = 693)			
One college	542	78.2%	-
Two colleges	123	17.7%	-
Three colleges	24	3.5%	-
Four colleges	4	0.6%	-
Race/Ethnicity (n = 558)			
White	162	29.0%	18.8%
Asian	69	12.4%	23.4%
Black/African American	96	17.2%	21.4%
Latino/Hispanic	124	22.2%	24.6%
Filipino and Pacific Islander/Native Hawaiian	18	3.2%	0.6%
American Indian/Alaska Native	5	0.9%	0.3%
More than one race/ethnicity	59	10.6%	5.3%
Other	25	4.5%	-
Unknown	-	-	5.6%
Age (n = 556)			
16-18 <sup>b</sup>	23	4.1%	8.5%
19-24	214	38.5%	39.1%
25-29	113	20.3%	17.6%
30-34	66	11.9%	9.9%
35-54	112	20.1%	17.1%
55-64	23	4.1%	4.1%
65 & above	5	0.9%	2.2%
Gender (n = 560)			
Male	154	27.5%	55.4%
Female	392	70.0%	42.0%
Transgender	5	0.9%	-
None of the above	9	1.6%	-
Unknown	-	-	2.6%

*Note* . Missing data not included in frequencies and percentages in this table. District-wide percentages based on Spring 2016 enrollment data obtained from the district institutional research website. Peralta Community College District (2017, April 4). Peralta fact book - Enrollments. Retrieved from <http://web.peralta.edu/peralta-factbook/enrollment/>

<sup>a</sup> Survey item was "check all that apply." The total percentage exceeds 100% due to the respondents' ability to be enrolled at multiple colleges within the Peralta Community College District. <sup>b</sup>Survey sample only includes 18 years old as minors were excluded from participation.

**Research question #1.** Descriptive data from the food insecurity and housing insecurity sections of the survey provided the answer to the first research question which asked: To what extent do community college students experience food and housing insecurity? The rates of food insecurity among Peralta students are described first, followed by the rates of housing insecurity and homelessness among Peralta students.

As shown in Table 6, 60.5% of Peralta students experienced food insecurity in the last 30 days while 39.5% of students reported being food secure. Of those students who were food insecure, 40.6% of Peralta students experienced “very low” food security—the most severe form of food insecurity—indicating that they experienced hunger. There was some variation in the prevalence of food insecurity across the four colleges with campus-specific rates as follows: 66.5% for College of Alameda, 62.9% for Berkeley City College, 59.7% for Laney College, and 52.6% for Merritt College. The rates of “very low” food security also varied across the four colleges and ranged from 35.3% (Merritt College) to 44.8% (College of Alameda).

Nevertheless, these rates of food insecurity signify that roughly one-half to two-thirds of students within the Peralta Community College District struggled with food-related needs. The most prevalent nutrition challenges among Peralta students were the inability to eat a balanced meal (65.8%) and the food that they bought didn't last and they didn't have sufficient money to purchase more (62.5%). Most strikingly, among Peralta students who indicated that they cut the size of their meals or skipped meals, 43.4% of those students reported doing so three days or more in the last 30 days.

Table 6

## Prevalence of Food Insecurity Among Students, District-Wide and by College

Food Security (Last 30 days) <sup>a</sup>	PCCD (n=564)		College of Alameda (n=116)		Berkeley City College (n=229)		Laney College (n=196)		Merritt College (n=173)	
	n	%	n	%	n	%	n	%	n	%
High security (score = 0)	169	29.9%	28	24.1%	66	28.8%	55	28.1%	67	38.7%
Marginal security (score = 1)	54	9.6%	12	10.3%	19	8.3%	24	12.2%	15	8.7%
<b>Food secure (high and marginal)</b>	<b>223</b>	<b>39.5%</b>	<b>40</b>	<b>34.5%</b>	<b>85</b>	<b>37.1%</b>	<b>79</b>	<b>40.3%</b>	<b>82</b>	<b>47.4%</b>
Low security (score = 2 - 4)	112	19.9%	24	20.7%	44	19.2%	42	21.4%	30	17.3%
Very low security (score = 5 - 6)	229	40.6%	52	44.8%	100	43.7%	75	38.3%	61	35.3%
<b>Food insecure (low and very low)</b>	<b>341</b>	<b>60.5%</b>	<b>76</b>	<b>66.5%</b>	<b>144</b>	<b>62.9%</b>	<b>117</b>	<b>59.7%</b>	<b>91</b>	<b>52.6%</b>
Affirmative responses to specific items in USDA 6-item food security scale: <sup>b</sup>										
The food that I bought didn't last and I didn't have money to get more. (n = 646)	404	62.5%	86	66.2%	165	63.2%	147	65.0%	105	54.4%
I couldn't afford to eat balanced meals. (n = 650)	428	65.8%	96	71.1%	176	66.9%	150	65.8%	115	59.0%
Did you ever cut the size of your meals or skip meals because there wasn't enough money for food? (n = 612)	292	47.7%	62	47.3%	126	50.8%	93	44.5%	78	41.5%
3 or more days: did you ever cut the size of your meals or skip meals because there wasn't enough money for food? (n = 604)	262	43.4%	58	45.0%	115	47.1%	88	42.5%	64	34.2%
Did you ever eat less than you felt you should because there wasn't enough money for food? (n = 613)	298	48.6%	71	54.6%	118	48.4%	99	46.3%	80	42.1%
Were you ever hungry but didn't eat because there wasn't enough money for food? (n = 616)	265	43.0%	57	43.2%	115	46.0%	82	38.9%	70	37.4%

Note. Food security status (food secure and food insecure) is in boldface. Missing data not included in frequencies and percentages in this table. The sum of frequencies across all colleges for each item (i.e. row) is larger than district-wide total count due to the respondents' ability to be enrolled at multiple colleges within the Peralta Community College District.

<sup>a</sup>Only includes respondents who answer all six items of the food security scale. <sup>b</sup>Respondents who indicated "Don't know" to an item were recoded as missing and were not included.

The extensiveness of housing issues encountered by Peralta students in the past 12 months are outlined in Table 7. Frankly, 83.9% of Peralta students experienced at least one form of housing insecurity or homelessness while only 16.1% of Peralta students reported being housing secure. In particular, 83.1% of Peralta students indicated that they had experienced at least one form of housing insecurity, with most reporting having shared a residence with another family (57%) or experienced a rent increase that made it difficult to pay their rent (45.3%). Nearly 2 in 5 Peralta students (40.9%) were unable to fully pay utilities on time and roughly 1 in 3 Peralta students (32.7%) were unable to fully pay rent or mortgage on time.

Homelessness is the most severe form of housing insecurity, and 30.2% of Peralta students surveyed indicated that they had one or more experiences associated with homelessness in the past 12 months. Roughly 1 in 5 Peralta students reported not knowing where they were going to sleep (20.7%) and not having a home (20.8%) during the past year. Of most concern, approximately 1 in 7 Peralta students (14%) indicated sleeping in an abandon building, car, or other place not meant as housing.

As with food insecurity, there was some variation in the rates of housing insecurity and homelessness across the four colleges. The prevalence of student housing insecurity across each college was 82.8% for College of Alameda, 85.8% for Berkeley City College, 85.0% for Laney College, and 78.1% for Merritt College. The prevalence of student homelessness across each college was 25.2% for College of Alameda, 32.4% for Berkeley City College, 28.5% for Laney College, and 25.5% for Merritt College.

Table 7

## Prevalence of Housing Insecurity Among Students, District-Wide and by College

Housing Security (past 12 months)	PCCD (n=603)		College of Alameda (n=128)		Berkeley City College (n=246)		Laney College (n=206)		Merritt College (n=186)	
	n	%	n	%	n	%	n	%	n	%
Housing secure	97	16.1%	21	16.4%	34	13.8%	29	14.1%	38	20.4%
<b>housing insecure or homeless<sup>a</sup></b>	<b>506</b>	<b>83.9%</b>	<b>107</b>	<b>83.6%</b>	<b>212</b>	<b>86.2%</b>	<b>177</b>	<b>85.9%</b>	<b>148</b>	<b>79.6%</b>
Affirmative responses to Housing Insecurity items (past 12 months):										
<b>Any of the below items (n = 603):</b>	<b>501</b>	<b>83.1%</b>	<b>106</b>	<b>82.8%</b>	<b>211</b>	<b>85.8%</b>	<b>175</b>	<b>85.0%</b>	<b>145</b>	<b>78.1%</b>
Have you experienced a rent increase that made it difficult to pay your rent? (n = 602)	273	45.3%	62	48.4%	116	47.2%	90	43.7%	73	39.5%
Have you been unable to pay the full amount of rent or mortgage on time? (n = 603)	197	32.7%	43	33.6%	72	29.3%	66	32.0%	58	31.2%
Have you been unable to pay the full amount of utilities (gas, oil, or electric bill) on time? (n = 602)	246	40.9%	49	38.6%	97	39.6%	76	37.1%	73	39.2%
Moved 2 or more times. (n = 591)	95	16.1%	15	11.9%	52	21.5%	25	12.4%	18	9.9%
Have you lived in shared residence with another family (related or unrelated)? (n = 603)	344	57.0%	83	64.8%	141	57.3%	121	58.7%	98	52.7%
Have you moved in with other people, even for a little while, due to financial problems? (n = 603)	180	29.9%	41	32.0%	77	31.3%	62	30.1%	39	21.0%
Affirmative responses to Homelessness items (past 12 months):										
<b>Any of the below items (n = 593):</b>	<b>179</b>	<b>30.2%</b>	<b>32</b>	<b>25.2%</b>	<b>79</b>	<b>32.4%</b>	<b>57</b>	<b>28.5%</b>	<b>47</b>	<b>25.5%</b>
Have you been thrown out of a home by someone in the household? (n = 593)	60	10.1%	9	7.1%	29	11.9%	20	10.0%	14	7.6%
Have you been evicted from a home by a landlord? (n = 593)	34	5.7%	7	5.5%	11	4.5%	12	6.0%	10	5.4%
Have you stayed in a shelter? (n = 593)	22	3.7%	7	5.5%	7	2.9%	7	3.5%	7	3.8%
Have you stayed in an abandoned building, in an automobile, or any other place not meant for regular housing, even for one night? (n = 593)	83	14.0%	13	10.2%	41	16.8%	27	13.5%	21	11.4%
Was there ever a time when you did not know where you were going to sleep at night, even for one night? (n = 593)	123	20.7%	20	15.7%	55	22.5%	40	20.0%	33	17.9%
Was there ever a time when you did not have a home? (n = 592)	123	20.8%	22	17.3%	48	19.7%	43	21.6%	33	17.9%

Note. Housing Insecurity and Homelessness prevalence are in boldface. Missing data not included in frequencies and percentages in this table. The sum of frequencies across all colleges for each item (i.e. row) is larger than district-wide total count due to the respondents' ability to be enrolled at multiple colleges within the Peralta Community College District.

<sup>a</sup>The insecure category includes respondents that are homeless (i.e. those who reported experiencing housing insecurity or homelessness).

Food insecurity and housing insecurity did not occur in isolation, rather many students in this sample tended to experience both conditions. Among food insecure Peralta students, 95.4% reported that they also experienced at least one form of housing insecurity or homelessness. Among housing insecure Peralta students, 69% also experienced food insecurity. Among homeless Peralta students, 87.7% also experienced food insecurity. In summary, these results uncover that a significant number of students at the Peralta Community College District experienced food and housing insecurity. These rates depict basic needs insecurity as being widespread, and highlight the specific food -and housing-related conditions serving as impediments for many Peralta students.

**Research question #2.** The second research question asked: What are the demographic characteristics of community college students experiencing food and housing insecurity? Descriptive data and chi-square tests were used to examine of the relationship between key demographic variables, and food and housing insecurity in order to determine potential disproportionate impact of these conditions among students. Key demographics variables among Peralta students related to food security status are presented first, followed by key demographic variables related to housing security status.

In relation to food insecurity, Table 8 presents key demographic characteristics by student food security status. Chi-squared analysis revealed a statistically significant relationship between race/ethnicity and food security status,  $\chi^2(6, N = 481) = 41.50, p < .001$ . African American (79.3%), Filipino and Pacific Islander/Native Hawaiian (77.8%),

Latino (67.9%), and multiracial (63%) students experienced food insecurity at higher rates than other student counterparts.

Moreover, there was a significant relationship between parental education level and food security status,  $\chi^2(4, N = 486) = 55.68, p < .001$ , evidenced by nearly three-fourths (75.5%) of Peralta students whose parents had a high school education or less having reported being food insecure compared to 29.3% of Peralta students whose parents possessed a graduate degree. Likewise, Peralta students who reported having children (69.6%) were more likely to be food insecure than students who did not have children (57.6%). The relationship between parenting status and food security status was significant,  $\chi^2(1, N = 501) = 5.82, p = .016$ .

Annual household income was significantly associated with food security status among Peralta students,  $\chi^2(6, N = 444) = 87.74, p < .001$ . Across income categories, Peralta students with an annual household income ranging from \$5,001 - \$15,000 had the highest rates of food insecurity (79.5%). However, it is worth noting that 1 in 10 Peralta students (10%) with an annual household income of \$100,001 or more experienced food insecurity. Gender, age, citizenship status, employment status, and hours worked while attending school were not significantly associated with food security status. An important observation is the lack of a statistically significant association between food insecurity and employment status,  $\chi^2(1, N = 501) = .67, p = .412$ . Among Peralta students who indicated that they were not employed, 57.6% reported being food insecure whereas among employed Peralta students, 61.3% report being food insecure.

Table 8  
*Demographic Characteristics and Student Food Security, District-Wide*

Demographic characteristic	Food secure		Food insecure <sup>a</sup>		<i>p</i> value( $\chi^2$ )
	n	%	n	%	
Gender (n = 502)					.336
Male	59	42.8%	79	57.2%	
Female	139	39.6%	212	60.4%	
Other	3	23.1%	10	76.9%	
Race/Ethnicity (n = 481)					< .001***
White	86	57.0%	65	43.0%	
Asian	28	52.8%	25	47.2%	
Black/African American	19	20.7%	73	79.3%	
Latino/Hispanic	35	32.1%	74	67.9%	
Filipino and Pacific Islander/ Native Hawaiian	4	22.2%	14	77.8%	
American Indian/Alaska Native	2	50.0%	2	50.0%	
More than one race/ethnicity	20	37.0%	34	63.0%	
Age (n = 499)					.245
18-24	75	37.1%	127	62.9%	
25-29	37	34.9%	69	65.1%	
30-34	24	41.4%	34	58.6%	
35-54	48	44.4%	60	55.6%	
55 and older	14	56.0%	11	44.0%	
Citizenship status (n = 500)					.554
U.S. citizen	176	40.7%	256	59.3%	
Permanent resident	12	34.3%	23	65.7%	
Not a U.S. or permanent resident	11	33.3%	22	66.7%	
Highest level of parental education (n = 486) <sup>b</sup>					< .001***
High school or less	34	24.5%	105	75.5%	
Some college but no degree	41	30.6%	93	69.4%	
Associate degree	17	37.8%	28	62.2%	
Bachelor's degree	50	53.8%	43	46.2%	
Graduate degree	53	70.7%	22	29.3%	
Student has children (n = 501)					.016*
No	166	43.0%	220	57.0%	
Yes	35	30.4%	80	69.6%	
Currently employed (n = 501)					.412
No	81	42.4%	110	57.6%	
Yes	120	38.7%	190	61.3%	
Hours worked per week while attending school (n = 310) <sup>c</sup>					.534
19 hours or less	43	42.2%	59	57.8%	
20 - 39 hours	48	35.3%	88	64.7%	
40 hours or more	29	40.3%	43	59.7%	
Annual household income (n = 444) <sup>b</sup>					< .001***
Less than \$5,000	15	21.4%	55	78.6%	
\$5,001 - \$15,000	18	20.5%	70	79.5%	
\$15,001 - \$25,000	25	28.7%	62	71.3%	
\$25,001 - \$50,000	34	35.1%	63	64.9%	
\$50,001 - \$75,000	24	64.9%	13	35.1%	
\$75,001 - \$100,000	16	64.0%	9	36.0%	
\$100,001 or more	36	90.0%	4	10.0%	

*Note.* Missing data not included in frequencies and percentages in this table. This table displays food security status (secure and insecure) frequencies and percentages among each type of demographic characteristic (i.e. each row).  $\chi^2$  *p* values compare the difference by key demographic characteristics and food security status.

<sup>a</sup> Food insecure includes low security and very low security. <sup>b</sup> Respondents who indicated "Don't know" were recoded as missing and not included. <sup>c</sup> This sample consists of those who reported being currently employed.

\* *p* < .05. \*\*\* *p* < .001.

In relation to housing insecurity, the demographic characteristics by housing status are displayed in Table 9. Most notably, all American Indian/Alaskan Native students (100%) in this sample and roughly 9 in 10 African American students (92.7%) reported experiencing housing insecurity. Latino students (84.7%) and multiracial students (89.8%) also experienced housing insecurity at higher rates than other student counterparts. When the race/ethnicity variable included all seven categories there was a significant association ( $p = .004$ ) with housing security status, however, the expected cell count violated the assumptions of the chi-square test. A follow-up chi-squared analysis conducted with only four categories for race/ethnicity—White, African American, Asian, and Latino—revealed that a significant relationship between race/ethnicity and housing security status remained corroborating a significant difference in housing insecurity rates for all race/ethnicity categories,  $\chi^2(3, N = 451) = 15.12, p = .002$ .

As found with food security status, there was also a significant relationship between parental education level and housing security status,  $\chi^2(4, N = 539) = 35.07, p < .001$ . Roughly 9 in 10 Peralta students (90.3%) whose parents had a high school education or less having reported being housing insecure compared to 63% of Peralta students whose parents possessed a graduate degree. Likewise, there was a significant relationship between annual household income and housing security status,  $\chi^2(6, N = 489) = 48.77, p < .001$ . Across income categories, nearly all of Peralta students (95.1%) who had an income less than \$5,000 were housing insecure, and 9 in 10 Peralta students (91.9%) whose income ranged from \$5,001 - \$15,000 were housing insecure.

Table 9  
*Demographic Characteristics and Student Housing Security, District-Wide*

Demographic characteristic	Housing secure		Housing insecure <sup>a</sup>		p value ( $\chi^2$ )
	n	%	n	%	
Gender (n = 560)					.191
Male	30	19.5%	124	80.5%	
Female	58	14.8%	334	85.2%	
Other	4	28.6%	10	71.4%	
Race/Ethnicity (n = 533)					.004**
White	42	25.9%	120	74.1%	
Asian	12	17.4%	57	82.6%	
Black/African American	7	7.3%	89	92.7%	
Latino/Hispanic	19	15.3%	105	84.7%	
Filipino and Pacific Islander/Native Hawaiian	3	16.7%	15	83.3%	
American Indian/Alaska Native	0	0.0%	5	100%	
More than one race/ethnicity	6	10.2%	53	89.8%	
Age (n = 556)					.011*
18-24	37	15.6%	200	84.4%	
25-29	9	8.0%	104	92.0%	
30-34	13	19.7%	53	80.3%	
35-54	23	20.5%	89	79.5%	
55 and older	9	32.1%	19	67.9%	
Citizenship status (n = 558)					.398
U.S. citizen	82	17.4%	390	82.6%	
Permanent resident	8	12.8%	41	87.2%	
Not a U.S. or permanent resident	4	10.3%	35	89.7%	
Highest level of parental education (n = 539) <sup>b</sup>					< .001***
High school or less	16	9.7%	149	90.3%	
Some college but no degree	16	11.1%	128	88.9%	
Associate degree	6	12.8%	41	87.2%	
Bachelor's degree	21	20.6%	81	79.4%	
Graduate degree	30	37.0%	51	63.0%	
Student has children (n = 559)					.537
No	74	17.0%	362	83.0%	
Yes	18	14.6%	105	85.4%	
Currently employed (n = 559)					.270
No	31	14.3%	186	85.7%	
Yes	61	17.8%	281	82.2%	
Hours worked per week while attending school (n = 342) <sup>c</sup>					.401
19 hours or less	21	18.7%	91	81.3%	
20 - 39 hours	23	15.0%	130	85.0%	
40 hours or more	17	22.1%	60	77.9%	
Annual household income (n = 489) <sup>b</sup>					< .001***
Less than \$5,000	4	4.9%	78	95.1%	
\$5,001 - \$15,000	8	8.1%	91	91.9%	
\$15,001 - \$25,000	12	12.1%	87	87.9%	
\$25,001 - \$50,000	15	14.3%	90	85.7%	
\$50,001 - \$75,000	10	26.3%	28	73.7%	
\$75,001 - \$100,000	7	28.0%	18	72.0%	
\$100,001 or more	19	46.3%	22	53.7%	

*Note.* Missing data not included in frequencies and percentages in this table. This table displays housing security status (secure and insecure) frequencies and percentages among each type of demographic characteristic (i.e. each row).  $\chi^2$  p values compare the difference by key demographic characteristics and housing security status.

<sup>a</sup>The insecure category includes respondents that are homeless (i.e. those who reported experiencing housing insecurity or homelessness). <sup>b</sup>Respondents who indicated "Don't know" were recoded as missing and not included. <sup>c</sup>This sample consists of those who reported being currently employed.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

There was a statically significant relationship between age and housing security status,  $\chi^2(4, N = 556) = 12.98, p = .011$ . Notably, the rate of housing insecurity was highest among Peralta students between the ages of 25-29 years (92%). Unlike with food insecurity, parenting status was not significantly associated with housing insecurity. Gender, citizenship status, employment status, or hours worked while attending school were also not significantly associated with housing security status. An important observation is the lack of a statistically significant association between housing insecurity and employment status,  $\chi^2(1, N = 559) = 1.22, p = .270$ . Among Peralta students who indicated that they were not employed, 85.7% reported being housing insecure whereas among employed Peralta students, 82.2% report being housing insecure. In summary, these results highlight race/ethnicity, parental education level, and annual household income as defining demographic variables related to food and housing insecurity. Moreover, parenting status was a key demographic indicator related to food insecurity only, while age was a key demographic indicator for housing insecurity.

**Research question #3.** The third research question asked: What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes? Chi-square tests were used to investigate the relationship between food and housing security status, and student and academic characteristics. These data are presented first. Next, results from t-tests analyses conducted to examine differences in academic behaviors and outcomes by food and housing security status are discussed. Finally, descriptive data on the self-reported educational impact of food and housing

insecurity on students are highlighted in order to explore the potential effects of basic needs insecurity on academic progress.

As detailed in Table 10, significant difference exist across all key student and academic characteristics, with the exception of enrollment at more than one Peralta college, when comparing food insecure students to food secure students. In terms of student characteristics, food insecure students (54.2%) were more likely to have reported receiving financial aid compared to food secure students (32%). The difference in financial aid recipient status was statistically significant,  $\chi^2(1, N = 512) = 24.51, p < .001$ . Similarly, there was a statistically significant difference in racially-minoritized student status reported,  $\chi^2(1, N = 481) = 35.60, p < .001$ , with food insecure students (68.6%) more likely to be a racially-minoritized student compared to food secure students (41.2%). In addition, there was a statistically significant difference in first-generation student status by food security status,  $\chi^2(1, N = 486) = 19.88, p < .001$ . Food insecure students (36.1%) reported being a first-generation college student at more than double the rate of food secure students (17.4%).

In contrast, food insecure students (16%) were less likely to have indicated Spring 2017 to be their first semester as a student at the Peralta Community College District compared to food secure students (24.8%). There was also a significant association between food security status and Spring 2017 unit load,  $\chi^2(1, N = 512) = 20.74, p < .001$ . Food insecure students (50.7%) were more likely to have reported being enrolled in 12 or more units (full-time status) compared to food secure students (41.3%).

Table 10  
*Food Security and Student/Academic Characteristics, District-Wide*

Student and academic characteristic	Food secure		Food insecure <sup>a</sup>		<i>p</i> value ( $\chi^2$ )
	n	%	n	%	
Financial Aid recipient (n = 512)					< .001***
No	140	68.0%	140	45.8%	
Yes	66	32.0%	166	54.2%	
Racially-minoritized student (n = 481) <sup>b</sup>					< .001***
No	114	58.8%	90	31.4%	
Yes	80	41.2%	197	68.6%	
First-generation college student (n = 486) <sup>cd</sup>					< .001***
No, parent attended college	161	82.6%	186	63.9%	
Yes, parent did not attend college	34	17.4%	105	36.1%	
Enrolled at more than one Peralta college (n = 564)					.458
No	170	76.2%	269	78.9%	
Yes	53	23.8%	72	21.1%	
First semester as Peralta student (n = 512)					.014*
No	155	75.2%	257	84.0%	
Yes	51	24.8%	49	16.0%	
Spring 2017 unit load (n = 512)					< .001***
12 or more unit	85	41.3%	155	50.7%	
6-11 units	72	35.0%	123	40.2%	
Less than 6 units	49	23.8%	28	9.2%	
Peralta GPA (n = 392) <sup>de</sup>					< .001***
3.5 - 4.0 (A/B)	99	66.4%	89	36.6%	
3.0 - 3.49 (B average)	24	16.1%	80	32.9%	
2.5 - 2.9 (B/C average)	14	9.4%	41	16.9%	
2.0 - 2.49 (C average)	10	6.7%	27	11.1%	
Less than 2.0 (D/F average)	2	1.3%	6	2.5%	
Suspend studies at least one semester (n = 403) <sup>e</sup>					.001**
No	104	69.3%	134	53.0%	
Yes	46	30.7%	119	47.0%	

*Note.* Missing data not included in frequencies and percentages in this table. This table displays the frequencies and percentages of various student and academic characteristics among food security status (i.e. each column).  $\chi^2$  *p* values compare the difference by food security status and key student and academic characteristics.

<sup>a</sup>Food insecure includes low security and very low security. <sup>b</sup>Racially-minoritized student is inclusive of Black/African American, Latino/Hispanic, Filipino, Pacific Islander, Native Hawaiian, and American Indian/Alaska Native, and more than one race/ethnicity. <sup>c</sup>Highest level of parental education used as a proxy for first-generation status defined by college attendance. <sup>d</sup>Respondents who indicated "Don't know" were recoded as missing and not included. <sup>e</sup>This sample consisted of respondents who indicated that Spring 2017 was not their first semester as a student at the Peralta Community College District.

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

In regards to academic characteristics, food security status was significantly associated with Peralta GPA,  $\chi^2(1, N = 392) = 33.11, p < .001$ . The majority of food insecure students (69.5%) reported a GPA within the 3.0 - 4.0 range which is indicative of being in good academic standing. However, students who were food insecure (36.6%) reported a GPA in the 3.5 - 4.0 category—highest academic performance—at roughly half the rate of food secure students (66.4%). Yet, food insecure students (11.1%) reported a GPA in the 2.0 - 2.49 category—the most academically at risk—at nearly double the rate of food secure students (6.7%). Food insecure students (47%) were more likely to have reported suspending their studies compared to food secure students (30.7%). This difference was statistically significant,  $\chi^2(1, N = 403) = 10.44, p < .001$ .

The relationship between housing security status and key student and academic characteristics is displayed in Table 11. As found with food insecurity, housing insecurity was not significantly associated with enrollment at more than one Peralta college. In terms of student characteristics, there was a significant association between financial aid recipient status and housing insecurity,  $\chi^2(1, N = 572) = 15.88, p < .001$ . Housing insecure students were more likely to have been receiving financial aid (49.7%) compared to housing secure students (27.4%). Likewise, there was a significant difference in racially-minoritized student status reported,  $\chi^2(1, N = 533) = 13.07, p < .001$ , with housing insecure students (60.1%) more likely to reported being e a racially-minoritized student compared to housing secure students (39.3%).

Table 11  
*Housing Security and Student/Academic Characteristics, District-Wide*

Student and academic characteristic	Housing secure		Housing insecure <sup>a</sup>		<i>p</i> value ( $\chi^2$ )
	n	%	n	%	
Financial Aid recipient (n = 572)					< .001***
No	69	72.6%	240	50.3%	
Yes	26	27.4%	237	49.7%	
Racially-minoritized student (n = 533) <sup>b</sup>					< .001***
No	54	60.7%	177	39.9%	
Yes	35	39.3%	267	60.1%	
First-generation college student (n = 539) <sup>cd</sup>					.005**
No, parent attended college	73	82.0%	301	66.9%	
Yes, parent did not attend college	16	18.0%	149	33.1%	
Enrolled at more than one Peralta college (n = 603)					.678
No	77	79.4%	392	77.5%	
Yes	20	20.6%	114	22.5%	
First semester as Peralta student (n = 573)					.555
No	74	77.9%	385	80.5%	
Yes	21	22.1%	93	19.5%	
Spring 2017 unit load (n = 574)					< .001***
12 or more unit	35	36.8%	240	50.1%	
6-11 units	30	31.6%	185	38.6%	
Less than 6 units	30	31.6%	54	11.3%	
Peralta GPA (n = 437) <sup>de</sup>					.035*
3.5 - 4.0 (A/B)	44	63.8%	160	43.5%	
3.0 - 3.49 (B average)	13	18.8%	109	29.6%	
2.5 - 2.9 (B/C average)	7	10.1%	53	14.4%	
2.0 - 2.49 (C average)	5	7.2%	38	10.3%	
Less than 2.0 (D/F average)	0	0.0%	8	2.2%	
Suspend studies at least one semester (n = 448) <sup>e</sup>					0.169
No	48	66.7%	218	58.0%	
Yes	24	33.3%	158	42.0%	

*Note.* Missing data not included in frequencies and percentages in this table. This table displays the frequencies and percentages of various student and academic characteristics among housing security status (i.e. each column).  $\chi^2$  *p* values compare the difference by housing security status and key student and academic characteristics.

<sup>a</sup>The insecure category includes respondents that are homeless (i.e. those who reported experiencing housing insecurity or homelessness). <sup>b</sup>Racially-minoritized student is inclusive of Black/African American, Latino/Hispanic, Filipino, Pacific Islander, Native Hawaiian, and American Indian/Alaska Native, and more than one race/ethnicity. <sup>c</sup>Highest level of parental education used as a proxy for first-generation status defined by college attendance. <sup>d</sup>Respondents who indicated "Don't know" were recoded as missing and not included. <sup>e</sup>This sample consisted of respondents who indicated that Spring 2017 was not their first semester as a student at the Peralta Community College District.

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

Moreover, the difference in first-generation college student status reported was statistically significant,  $\chi^2(1, N = 539) = 8.01, p = .005$ , with housing insecure students (33.1%) having reported being a first-generation college student at nearly twice the rate of housing secure students (18%). Unlikely with food security status, neither indicating Spring 2017 to be their first semester as a student at the Peralta Community College District nor suspending studies were not significantly associated with housing security status.

In regards to academic characteristics, there was a significant association between housing security status and Spring 2017 unit load,  $\chi^2(1, N = 574) = 20.30, p < .001$ . Housing insecure students (50.1%) were more likely to have reported being enrolled in 12 or more units (full-time status) compared to housing secure students (36.8%). Housing security status was significantly associated with Peralta GPA,  $\chi^2(1, N = 437) = 10.37, p < .001$ . The majority of housing insecure students (73.1%) reported a GPA within the 3.0 - 4.0 range reflecting being in good academic standing. However, students who were housing insecure (43.5%) reported a GPA in the 3.5 - 4.0 category—highest academic performance—at a much lower rate than housing secure students (63.8%). Yet, housing insecure students (10.7%) reported a GPA in the 2.0 - 2.49 category—the most academically at risk—at a higher rate than housing secure students (7.2%).

The impacts of food and housing insecurity on academic behaviors and outcomes are displayed on Table 12. In terms of academic behaviors, t-test analysis revealed a statistically significant difference in the mean hours per weeks spent on studying,

homework, and class projects by food security status,  $t(506) = -2.69, p = .007$ .

Specifically, food insecure students ( $M = 16.20, SD = 11.43$ ) spent more hours per week on studying, homework, and class projects than food secure students ( $M = 13.39, SD = 11.63$ ). Similarly, there was a statistically significant difference in the mean hours per weeks spent on studying, homework, and class project by housing security status,  $t(564) = -2.24, p = .026$ . In particular, housing insecure students ( $M = 15.63, SD = 11.32$ ) spent more hours per week on studying, homework, and class project than housing secure students ( $M = 12.75, SD = 12.08$ ).

In regards to academic outcomes, t-test analysis showed that there was no significant difference among food insecure students ( $M = 5.12, SD = 4.66$ ) and food secure students ( $M = 5.49, SD = 5.49$ ) in terms of total semesters enrolled at PCCD;  $t(401) = 0.70, p = .484$ . Likewise, there was no significant difference among housing insecure students ( $M = 5.14, SD = 4.67$ ) and housing secure students ( $M = 5.56, SD = 5.45$ ) in terms of total semesters enrolled at PCCD;  $t(446) = 0.68, p = .500$ .

Moreover, t-test analysis revealed that there was no significant difference,  $t(387) = 0.70, p = .484$ , in total course credits earned at PCCD among food insecure students ( $M = 41.36, SD = 32.94$ ) and food secure students ( $M = 44.15, SD = 45.03$ ). Relatedly, there was no significant difference among housing insecure students ( $M = 42.06, SD = 34.62$ ) and housing secure students ( $M = 43.91, SD = 49.55$ ) in terms of total course credits earned at PCCD;  $t(428) = .038, p = .705$ .

Table 12

*Impact of Food and Housing Insecurity on Academic Behaviors and Outcomes, District-Wide*

Academic behavior/outcome indicator	Secure		Insecure		MD	95% CI	p value (t-test)
	n	M(SD)	n	M(SD)			
Hours per week spent on studying, homework, and class projects							
Food (n = 508)	203	13.39 (11.63)	305	16.20 (11.43)	-2.81	[-4.86, -.76]	.007**
Housing (n = 566)	95	12.75 (12.07)	471	15.63 (11.32)	-2.88	[-5.40, -.38]	.026*
Total semesters enrolled at PCCD <sup>a</sup>							
Food (n = 403)	150	5.49 (5.49)	253	5.12 (4.66)	.36	[-.65, 1.37]	.484
Housing (n = 448)	72	5.56 (5.45)	376	5.14 (4.67)	.41	[-.79, 1.63]	.500
Total course credits earned at PCCD <sup>a</sup>							
Food (n = 389)	145	44.15 (45.03)	244	41.36 (32.94)	2.79	[-5.02, 10.59]	.484
Housing (n = 430)	70	43.91 (49.55)	360	42.06 (34.62)	1.85	[-7.76, 11.47]	.705

Note. *M* = mean. *SD* = standard deviation. MD = mean difference. CI = confidence interval. The food insecure category includes low security and very low security. The housing insecure category includes respondents that are homeless (i.e. those who reported experiencing housing insecurity or homelessness).

<sup>a</sup> This sample consisted of respondents who indicated that Spring 2017 was not their first semester as a student at the Peralta Community College District. T-test *p* values compare the difference by food and housing security status, and academic behaviors and outcomes.

\* *p* < .05. \*\* *p* < .01.

Finally, Table 13 highlights descriptive data on the self-reported educational impact of food and housing needs on students within the last 12 months. Among food insecure students, 65.2% reported that hunger or housing problems had an impact on their education. When asked about the specific impact caused by their hunger and housing problems, 88.7% of food insecure students reported not performing as well in their academics as they otherwise could have. In addition, more than two-thirds (68.7%) of food insecure students indicated missing a class and more than one-half (57%) of food insecure students reported dropping a class.

Table 13  
*Educational Impact of Food and Housing Needs on Insecure Students, Last 12 months*

	Food insecure respondents <sup>a</sup> (n = 302)		housing insecure respondents <sup>b</sup> (n = 471)	
	n	%	n	%
"Yes" response				
Have hunger or housing problems had an impact on your education? <sup>c</sup>	197	65.2%	238	50.5%
Have hunger or housing problems caused you to: <sup>d</sup>				
<b>Done any of the following:</b>	<b>191</b>	<b>97.9%</b>	<b>227</b>	<b>97.0%</b>
Miss a class	134	68.7%	151	64.5%
Miss a study session	139	71.6%	160	68.7%
Opt not to join an extracurricular activity	148	77.1%	173	74.9%
Not buy a required book	141	72.7%	162	69.5%
Drop a class	110	57.0%	127	54.7%
Not perform as well in your academics as you otherwise could have	172	88.7%	202	86.7%

*Note.* These questions refer to respondents' educational experience in general, within the indicated timeframe, and are not necessarily specific to their experience as a student at the Peralta Community College District. Missing data not included in frequencies and percentages in this table. Totals for those who reported doing any of the following are indicated in boldface. This table displays district-wide frequencies and percentages for each item among food insecure respondents and housing insecure respondents (i.e. each column).

<sup>a</sup>Food insecure includes low security and very low security. <sup>b</sup>The housing insecure category includes respondents that are homeless (i.e. those who reported experiencing housing insecurity or homelessness). <sup>c</sup>All survey respondents were directly asked about the impact of hunger and housing problems. <sup>d</sup>Follow-up questions about specific impact caused were only asked to those who responded "Yes" to the initial question about educational impact.

Among housing insecure students, 50.5% reported that hunger or housing problems had an impact on their education in the last 12 months. When asked about the specific impact caused by their hunger and housing problems, 86.7% of housing insecure students reported not performing as well in their academics as they otherwise could have. Additionally, nearly two-thirds (64.5%) of housing insecure students indicated missing a class and more than half (54.7%) of food insecure students reported dropping a class.

In summary, both food insecure and housing insecure students were more likely have reported receiving financial aid, being a racially-minoritized student, being a first-generation college student, and having unit load of 12 or more unit (full-time status) for Spring 2017 in comparison to their food secure and housing secure counterparts. In addition, food insecure students were more likely to have children, and more likely to report having suspended studies for at least one semester in comparison to food secure students.

Food insecure and housing insecure students reported having a Peralta GPA in the 3.5 - 4.0 category—highest academic performance—at significantly lower rates than food secure and housing secure students. Yet, food insecure and housing insecure students reported having a Peralta GPA in the 2.0 - 2.49 category—the most academically at risk—at higher rates than food secure and housing secure students. Food insecure and housing insecure students spent, on average, more hours per week on school-related tasks than secure student counterparts. Food insecure and housing insecure students had comparable outcomes to food secure and housing secure students in regards to total

semesters enrolled and total course credits earned at PCCD. A large number of food insecure and housing insecure students reported that food and housing needs impacted their education, and specifically their ability to perform well, attend class session, and remain enrolled in courses.

### **Summary of Results**

This chapter reported the findings from an online survey (N = 693) used to examine the following research questions within the Peralta Community College District:

1) To what extent do community college students experience food and housing insecurity? 2) What are the demographic characteristics of community college students experiencing food and housing insecurity? 3) What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes?

In response to the first question, the study found that 60.5% of Peralta students experienced food insecurity in the last 30 days, of which 40.6% of Peralta students indicated the lowest level of food security indicating that they experienced hunger. Fully, 83.9% of Peralta students experienced housing insecure or homelessness in the past 12 month. Explicitly, 83.1% of Peralta students experienced housing insecurity and 30.2% of Peralta students experienced homelessness in the past 12 months.

In response to the second question, race/ethnicity, parental education level, and annual household income were defining demographic variables significantly associated with student food and housing insecurity. In addition, parenting status was associated with food insecurity, while age was associated with for housing insecurity. Worth noting

is the lack of a statistically significant association between food and housing insecurity and employment status, given that students who were employed and unemployed reported similar rates of food and housing insecurity. In response to the third question, the study found that food insecure and housing insecure students differ from their counterparts across several student and academic characteristics. Moreover, the study found that food and housing insecurity impacted Peralta students' academic behaviors, performance, and outcomes across various indicators.

In conclusion, study findings illuminate the pervasiveness of student food and housing insecurity and shed light on the ways in which food and housing insecurity impact Peralta students' academic progress and outcomes. Conclusions drawn from the findings presented in this chapter are discussed in detail in Chapter Five.

## **Chapter 5: Discussion and Recommendations**

### **Overview**

The purpose of this study is to identify the food and housing needs among community college students, and explore how these needs potentially impact students' academic success. In particular, this study aims to assess the rates of student food and housing insecurity as well as highlight the characteristics and academic progress of students experiencing these conditions.

A quantitative case study design employing a cross-sectional survey was used to examine the following research questions within the Peralta Community College District:

1. To what extent do community college students experience food and housing insecurity?
2. What are the demographic characteristics of community college students experiencing food and housing insecurity?
3. What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes?

This chapter begins by interpreting the research findings in order to provide individualized information and recommendations to the research site—Peralta Community College District—while simultaneously extending the literature on food and housing insecurity among community college students. A discussion of the implications of these findings follows. The chapter concludes with recommendations for action and future research.

## **Interpretation of the Findings**

The study findings illuminate the pervasiveness of student food and housing insecurity and shed light on the ways in which food and housing insecurity impact Peralta students' academic progress and outcomes. A summary of the findings for each of the three research questions is provided here.

**Research question #1.** To what extent to which community college students experience food and housing insecurity?

As anticipated, there were a significant number of students at the Peralta Community College District who experienced food and housing insecurity. This research study found that 60.5% of Peralta students experienced food insecurity in the last 30 days. Of those students who were food insecure, 40.6% of Peralta students experienced “very low” food security—the most severe form of food insecurity—indicating that they experienced hunger. Fully, 83.9% of Peralta students experienced at least one form of housing insecurity or homelessness in the past 12 month. Explicitly, 83.1% of Peralta students experienced housing insecurity, and 30.2% of Peralta students experienced homelessness.

Given existing rates of food and housing insecurity among college students and considering the relatively high cost of living in California and the Bay Area in particular, this study hypothesized the following: The rates of food and housing insecurity among Peralta students will be comparable, if not higher, than the rates for community college students indicated in prior research. To investigate this proposition, Table 14 compares

the rates of food insecurity, housing insecurity, and homelessness among Peralta students to rates available for regional and national samples of community college students. This study's measurement of each construct (food insecurity, housing insecurity, and homelessness) closely resembled the instrumentation used in prior research conducted from which regional and national rates were obtain, thus allowing for comparisons between samples (Goldrick-Rab et al., 2015, 2017a, 2017b).

As expected, the rates for food insecurity (60.5%), housing insecurity (83.1%), and homelessness (30.2%) among Peralta students were significantly higher compared to the national rates for community college students (56%, 51%, and 14% respectively). Surprisingly, the rates for food insecurity, housing insecurity, and homelessness among Peralta students were also significantly higher than the rates for students at the Contra Costa Community College District (54.7%, 49.2%, and 14% respectively). However, limitations related to sample bias could be one explanation for PCCD's higher estimates of food and housing insecurity when compared to existing regional sample rates.

Table 14

*Comparison of Peralta Student Food Insecurity, Housing Insecurity, and Homelessness to Regional and National Samples*

Community college sample	Food insecurity	Housing insecurity	Homelessness
Peralta Community College District (N = 693)	60.5%	83.1%	30.2%
Contra Costa Community College District (N = 730), <i>regional</i> <sup>a</sup>	54.7%	49.2%	14.0%
U.S. Community Colleges (N = 33,934), <i>national</i> <sup>b</sup>	56.0%	51.0%	14.0%

*Note.* Regional and national rates of food insecurity, housing insecurity, and homelessness were derived from the same research study. Contra Costa Community College District data are a subsample of the national dataset.

<sup>a</sup>Percentages of food and housing insecurity for the Contra Costa Community College District were obtained from: Stoup, G. (2017, March 15). Assessing student food and housing needs. (4CD Research Briefs ed. 1, vol. 1). Martinez, CA: Contra Costa Community College District. <sup>b</sup>National percentages of food and housing insecurity were derived from Goldrick-Rab, S., Richardson, J., & Hernandez, A. (2017). Hungry and homeless in college: Results from a national study of basic needs insecurity in higher education. Madison, WI: Wisconsin HOPE Lab.

Nevertheless, the extent of housing insecurity and homelessness among Peralta students not only depicts the affordable housing crisis related to living in the San Francisco Bay Area, but also illuminates the adverse effect of increased gentrification in cities within Alameda County such as Oakland, California which pushes out low-income and racially-minoritized residents from their communities. Alameda County is the fastest growing county in the Bay Area, and Oakland has a 21% poverty rate placing it among the top three cities with the highest poverty rate in the Bay Area (Allen & Li, 2016). This is evidenced by the study finding that 46.6% of Peralta students in this sample reported that 50% or more of their total monthly income goes towards paying rent or mortgage. The high cost of living coupled with low wages and economic hardships make it particularly difficult for Peralta students to maintain stable housing, and serves as one explanation for the disproportionately high rates of housing insecurity and homelessness.

In short, the majority of Peralta students reported challenges with accessing sufficient, affordable, nutritious foods and securing regular, safe, affordable housing. Peralta students experienced disproportionately high rates of food and housing insecurity, and these rates were significantly higher relative to the rates of regional and national samples. This study represents Peralta Community College District's first ever investigation of the nutrition and housing challenges of its students. The severe levels of basic needs insecurity—as revealed through this study's finding of the prevalence of food and housing insecurity—are sobering as these conditions appear to be norm for Peralta students rather than the exception.

**Research question #2.** What are the demographic characteristics of community college students experiencing food and housing insecurity?

As postulated, there were significant demographic disparities in food and housing insecurity with some Peralta students being more likely than others to have reported experiencing these challenges. Specifically, race/ethnicity, parental education level, and annual household income were demographic variables significantly associated with both student food and housing insecurity. As shown in a previous research (Wood et al., 2016), African American students in this study also reported experiencing the highest rates of food and housing insecurity compared to other student counterparts. Contrary to prior research which reported that income was not associated with food insecurity (Gaines et al., 2014; Maroto et al., 2015), this study found a statistically significant association between annual household income and both food and housing insecurity.

It is worth noting that there was no statistically significant association between food and housing insecurity and employment status. In particular, 61.3% of employed Peralta students reported experiencing food insecurity and 82.2% of employed Peralta students reported experiencing housing insecurity. This finding alludes to the high cost of living and absence of livable wages that are necessary in order for student to meet their basic needs and afford their daily expenses.

In short, defining demographics for students experiencing food and housing insecurity resemble characteristics similar to key target student groups that are already the focus of equity efforts—culturally relevant learning communities, first year experience

(FYE) programs, and Extended Opportunity Programs and Services (EOPS)—providing an opportunity to embed food and housing resources into existing services for these populations. These findings corroborate widely known assertions when considering adverse impacts and equity issues in both the field of education and public health field alike – race, educational attainment, and money matter.

**Research question #3.** What are the impacts of food and housing insecurity on community college students' academic behaviors and outcomes?

There were several statistically significant relationships between food security status and housing security status, and student characteristics. More specifically, food insecure and housing insecure students were more likely to have reported being financial aid recipients, racially-minoritized students, first-generation college students, and being enrolled in 12 or more units (full-time status) compared to their food and housing secure counterparts.

In regards to academic performance, the majority of food insecure and housing insecure students reported a GPA within the 3.0 - 4.0 range reflecting being in good academic standing, albeit at lower proportions compared to their secure student counterparts. However, food insecure and housing insecure students reported having a Peralta GPA in the 2.0 - 2.49 category—the most academically at risk—at a higher rates than secure students. For these students, addressing food and housing needs are critical to retention given that they risk being on academic probation if they do not maintain an acceptable GPA. In terms of academic behaviors food insecure and housing insecure

students displayed strong academic habits given that they spent more hour per week on studying, homework, and class projects than their student counterparts.

In terms of academic outcomes, food insecure and housing insecure students faired comparably to food secure and housing secure students in regards to total semesters enrolled and course credits earned at PCCD. In terms of self-reported educational impact, nearly all food insecure students (97.9%) and housing insecure students (97%) who indicated that hunger and housing problems had an impact on their education in the last 12 months reported that these conditions caused them to do any of the following: either miss a class, miss a study session, not join an extracurricular activity, not buy a book, drop a class, or not perform as well in their academics as they otherwise could have.

Taken together, these results suggest that food and housing insecurity is widespread among Peralta students, and these conditions impact students' academic behaviors and outcomes. Firstly, these data infer that food insecure and housing insecure students must spend more time on school-related tasks in order to obtain academic outcomes—total semesters enrolled and credits earned—similar to their secure student counterparts. Secondly, food insecure and housing insecure students are tenacious evidenced by their full-time enrollment and comparable academic outcomes achieved. However, given food insecure and housing insecure students' self-reported impact of housing and food needs on their ability to perform well coupled with higher proportions in the academically at-risk GPA category, these data infer that food insecure and housing

insecure are not able to actualize their academic capabilities because of the unmet food and housing needs they are grappling with.

In short, food insecure and housing insecure students are attempting more units and working harder to achieve the same academic outcomes as their counterparts, but their academic performance is compromised in the process. These findings shed light on the ways in which food and housing insecurity impact Peralta students' academic progress and outcomes. Ultimately, these findings corroborate a clear need for systemic action ensuring that equitable institutional supports are put in place to meet all students' basic needs of food and shelter that are a prerequisite for academic success.

### **Implications**

Three major implications can be made based on the findings from this study. These implications were intended to transcend across the following areas: educational equity issues, educational leadership theory and practice, and educational policy.

**Acknowledge assets and build on students' strength.** At first glance, educators operating from a deficit-based approach (Yosso, 2005) will make the assumption that the findings from this study related to academic outcomes—total semesters enrolled and units earned—can be dismissed given the lack of a statistically significant difference between students experiencing food and housing insecurity and student that are not experiencing these conditions, thus questioning the true impact food and housing have on educational impact. Operating from this framework, however, would render food insecure and housing insecure students' achievement invisible or insignificant.

On the contrary, using an assets-based approach or strength-based perspective affords the opportunity to interpret the findings in a way that considers food and housing insecure students' various forms of capital, and particular their navigational capital (Yosso, 2005). Approaching food and housing insecurity from this understanding enables educators to reflect on the following proposition: *For food and housing insecure students in this study that showed comparable levels of academic progress in spite of the challenges they are encountering, what would actualization of their academic capabilities look like once the hindrances that come from these conditions are removed?* The study findings reveal that food insecure and housing insecure students are highly motivated students who can benefit greatly from simple, low-cost interventions. As such, institutions should not discount but rather consider these covert strengths and promote student success by building on those assets and skill sets while simultaneously addressing students' basic needs.

**Reconceptualize institutional approaches to student supports.** Shields and Mohan (2008) asserted that a socially just approach to education is aimed at redressing persistent inequities outside of schools. Moreover, Shields and Mohan (2008) called on new and different approaches to education that examine the wider social disparities resulting from the correlation among poverty, health, and educational achievement which create an uneven playing field for students. Still, addressing students' basic needs—and particularly those needs related to food and housing—are traditionally seen as being outside the scope of services offered by community colleges.

However, providing critical services to students experiencing food and housing insecurity is well within the purview of a community college's mission and capability but requires that institutional leaders redesign the institution's approach to student supports. Stanback Stroud (2015) privy's us to the successes and challenges for initiating such change in order to institutionalize a bundled services model that supports students' basic needs security:

“It is certainly important to recognize that some financial capability services are not typically colleges' areas of expertise, but those challenges are surmountable if we bring the right partners to the table. At Skyline College, we have demonstrated that strategies that promote financial well-being can successfully be incorporated into the typical operations of an institution of higher education, and that doing so contributes to student success” (p. 228)...“And yet it is not simple work to reconceptualize traditional student services, redefine the mission, and change the culture of an institution (p. 231).

Community colleges have the opportunity to enhance overall success by committing to institutional change that reconceptualizes the provision of student services. As such, institutional leaders must move away from the current individual-focused approach to education that is reliant on students' resilience and tenacity to a social justice approach that views addressing student's basic needs as part of student success and equity.

**Put policies into practice.** The California State Legislature has begun to prioritize the issue of college student hunger and homelessness as evidenced by the

recently enacted bills. Thus, there are four policies in place with critical implications for supporting efforts at the Peralta Community College District specifically, and California Community Colleges more broadly, to actively assist students with food and housing needs on campus.

- ***“Hunger Free Incentive Grants.”*** On June 27, 2017 Governor Brown and the California State Legislature signed a budget for the 2017-18 fiscal year that incentivizes public colleges to implement initiatives aimed at addressing college student hunger (Sumekh, 2017). As part of the budget allocation, each California community college is eligible to receive up to \$21,929.82 (\$2.5 million available amongst the 114 campuses) in one-time funds. These funds can be used to establish an on-campus pantry or develop a partnership with a local food bank to provide regular food distribution on campus. The funds can also be used to designate a person on campus to facilitate CalFresh enrollment (California’s implementation of the federal food stamp program - Supplemental Nutrition Assistance Program).
- ***Assembly Bill 1930 (Skinner) CalFresh: student eligibility.*** This bill was signed into law on September 28, 2014. The provisions of this bill indicates that community college students who are enrolled in the Extended Opportunity Programs and Services (EOPS) or provide proof of enrollment in a Workforce Innovation and Opportunity Act (WIOA) activity shall be eligible for CalFresh if they meet all other conditions of CalFresh eligibility (Bland, 2015).

- ***Assembly Bill 1747 (Weber) Food assistance: higher education students.*** This bill was signed into law on September 12, 2016 and encourages on-campus food vendors such as restaurants or cafeterias to participate in the Restaurant Meals Program which allows eligible CalFresh recipients who are homeless to purchase hot, prepared food from participating restaurants (Western Center for Law & Poverty, 2016). Alameda County is one of seven counties in California that participates in the RMP, and the Peralta Community College District must comply with the CalFresh RMP provision of this bill (Western Center for Law & Poverty, 2016).
- ***Assembly Bill 1995(William) Community colleges: homeless students access to shower facilities.*** This bill was signed into law on September 21, 2016 and indicates that governing boards must grant access to shower facilities to any homeless student enrolled in coursework, who has paid enrollment fees, and is in good standing (Keen & Associates, 2016). The governing board is required to determine a plan of action to implement the law given the stipulation provided.

To that extent, the online survey for this study contained an item that asked about food- and housing-related public benefits and services typical used by people who may be struggling to make ends meet as well as services unique to the Peralta Community College District. Table 15 illustrates the use of services among food and housing insecure students. Given state policies and this data, there are several implications for practice.

Table 15

*Use of Services Among Food Insecure and Housing Insecure Students, District-Wide*

Service/program use while enrolled as a Peralta student	Food insecure <sup>a</sup> (n = 341)		Housing insecure <sup>b</sup> (n = 506)	
	n	%	n	%
<b>Use of any food-related services</b>	<b>121</b>	<b>35.5%</b>	<b>159</b>	<b>31.4%</b>
CalFresh program (SNAP - food stamps)	82	24.0%	110	21.7%
WIC (nutritional assistance for women and children)	23	6.7%	31	6.1%
California Food Assistance Program (CFAP)	6	1.8%	7	1.4%
Receive free food or meals from church, food pantry, or soup kitchen	55	16.1%	69	13.6%
<b>Use of any housing-related services</b>	<b>65</b>	<b>19.1%</b>	<b>89</b>	<b>17.6%</b>
Housing assistance (subsidized housing, public housing vouchers)	30	8.8%	39	7.7%
Utility assistance programs	51	15.0%	70	13.8%
CalWORKs program	25	7.3%	28	5.5%
EOPS/CARE program	68	19.9%	82	16.2%
CAFYES Program (Foster youth)	4	1.2%	4	0.8%
Medi-Cal or other public health insurance	136	39.9%	192	37.9%
Student health services/Campus wellness center	58	17.0%	85	16.8%
<b>None of the above</b>	<b>112</b>	<b>32.8%</b>	<b>200</b>	<b>39.5%</b>

*Note.* Respondents were asked to consider service use at any time while enrolled as student at any college within the Peralta Community College District. Respondents were given the option to indicate "none of the above." Missing data not included in frequencies and percentages in this table. This table displays the frequencies and percentages for use of services among food insecure respondents and housing insecure respondents (i.e. column).

<sup>a</sup>The food insecure category includes low security and very low security. <sup>b</sup>The housing insecure category includes respondents that are homeless (i.e. those who reported experiencing housing insecurity or homelessness).

To begin, 32.8% of food insecure students and 39.5% of housing insecure students reported that they did not use any of the services or programs while enrolled as a Peralta student. The low rate of service utilization by students experiencing food and housing insecurity affords the opportunity for the Peralta Community College District to connect its students with existing resources. As an example, roughly 1 in 5 food insecure students (19.9%) reported having received services from the EOPS/CARE program and thus may potentially be eligible for CalFresh given the AB 1930 legislation in place. In addition, approximately 1 in 6 food insecure students (17%) and housing insecure students (16.8%) indicated having used the Peralta Student Health Services. Given the

fact that some food insecure and housing insecure students are already connect to key educational programs and health services on campus, these campus-based venues can serve as the starting points for institutional efforts to connect students in need with food and housing resources.

### **Recommendations for Action**

The recommendations presented were developed by taking into consider to the current institutional practices and services within the Peralta Community College District; however, these suggestions are also applicable to California community colleges more broadly.

**Raise awareness of students' basic needs insecurity.** Although this may come as intuitive to some, basic needs security has been restricted to other disciplines, such as Public Health and Sociology, and has only recently been investigated as legitimate student issue in the field of higher education. Moreover, basic needs security among college students is an emergent field and many best practices for assessing and addressing these needs are still being developed (Goldrick-Rab et al., 2017b). A precursor to action, therefore, is the acknowledgement that a matter of justifiable concern is at hand. Bringing to light the hidden issue of student hunger and homelessness will enable stakeholders to begin to work together to address student food and housing needs within an educational setting.

Sackett, Goldrick-Rab, and Broton (2016) asserted that support from the institution's leadership is important for coalition building and coordination on campus -

though administrators may not be familiar with the extent of students in need and how those needs affect students' ability to succeed. Furthermore, administrators can aid in explaining to stakeholder how supporting students' needs outside the classroom related to the institution's mission or why these efforts are worthwhile (Sackett et al., 2016). Given the lack of awareness, community colleges should fund case studies within their institutions to become cognizance of students' stories about food and housing insecurity, and better understand how these conditions effect students' academic experiences.

**Incorporate basic needs into student services provision.** Given the prevalence of food and housing insecurity among students, community colleges should develop short-and long-term institutional responses for addressing students' food and housing needs while normalizing basic needs services on campus. Community colleges should establish an "emergency-relief" initiative at each campus to address food insecurity. One viable option for providing immediate food assistance services on campus is to establish a campus food pantry. California community colleges should take advantage of the funds available through the Hunger Free Incentive Grants in order to establish an on-campus pantry. Institutions can reference the campus food pantry toolkit created by the College and University Food Bank Alliance (CUFBA) for guidance on how to get started (CUFBA, 2015). As a long-term strategy, institutions should hire a case manager or train existing staff to serve as the single point of contact (SPOC) for food and housing insecure students. This person could also serve as the designated institutional staff tasked with

staying informed about state policies related to food and housing that have stipulation for compliance by community college institutions.

**Invest in cross-sector collaboration and colocation of services.** As Wilson (2011) purported “it is likely that uncluttering the pathway to college will mean collaborations between federal departments, state and local social services agencies, community colleges, and universities” (p.74). The findings from this study reaffirm broader implications from the emerging local and national discussions of the importance in building bridges to work across sectors and leveraging public benefits access and economic self-sufficiency initiatives with efforts that support the community college completion agenda.

Previous research indicates that incorporating comprehensive or wraparound social services within community colleges can give students access to the support systems needed to mitigate the out-of-school barriers in order to meet their educational goals. A report by the Lumina Foundation called for efforts beyond financial aid in order to better assist low-income students and outlined six strategies for providing this support based on best practices at colleges across the country (Chaplot, Cooper, Johnstone, & Karandjeff, 2015). One of the strategies encompasses an effective financial support system for low-income students that establish a campus-based network of support services that will connect students to social services like public benefits, provide financial and career coaching, and offer services such as tax preparation and legal services.

Collocation of these financial and social services has occurred through various wraparound or bundled services models that have been implemented across numerous community colleges. Skyline College is one such institution spotlighted among best practices for its efforts to adopt a bundled services approach given the institution's participation in multiple initiatives: Center for Working Families (CWF) Community College Learning Network—currently referred to as the Working Student Success Network (Liston & Donnan, 2012); Benefit Access for College Completion (Price et al., 2014), and SparkPoint (Chaplot et al., 2015; Stanback Stroud, 2015). This institution serves as one instance that exemplifies how prioritizing students basic needs' as part of the overall mission coupled with vested leadership and cross-sector collaboration serves to facilitate the institutionalization of such comprehensive initiatives in efforts to keep students connected to benefits and services that promote student success.

The promise in connecting potentially eligible students to public benefits and services cannot be understated. Repositioning community colleges as a centralized hub for reaching students in need who may be experiencing food and housing insecurity will help minimize the barriers to accessing food and housing related assistance and ensure that eligible individuals are granted public benefits and able to more easily utilize them.

### **Recommendations for Further Study**

The recommendations for further study based on the research conducted are two-fold. The first set of recommendations center on the expansion of knowledge production pertaining to basic needs security among community college students. Although there is

an emerging body of research in this area, housing insecurity among community college students has been examined to a lesser degree than food insecurity. Additional research is needed to examine community college student housing insecurity and homelessness and its effect on student success in more depth. In addition, future research should consider the long-term effects of food and housing insecurity on academic outcomes such as degree completion and transfer rates. Lastly, future research should be approached from an assets-based perspective that focuses on the navigational capital and strengths that food and housing insecure students possess. This research should explore the nuances of persistence among food and housing insecure students to better understand *how* they navigate institutions and *make due* in spite of having unmet basic needs and limited access to resources and services.

The second set of recommendations aims to inform ways to bolster equitable practices. Many community colleges have begun to implement programs and innovative approaches in order to address student's basic needs. However, little data exist on the effectiveness of those models. Therefore, evaluations of existing program models and campus initiatives should be conducted so that community college leadership can move from awareness of these issues to taking action to address them and bring effective strategies to scale in order to be institutionalized among community colleges. In addition, future research should be conducted to understand the nuances of the organizational change process under which equitable program models that incorporate basic needs security were implemented.

## **Conclusion**

Poverty, health, and education are inextricably linked. As evidenced by the findings from this study, many community college students experience difficulties obtain nutritiously adequate and affordable meals and do not have secure living arrangements. In order to bolster the effects of retention and student success efforts, it is important that community colleges expand student services to more comprehensive models that address students' basic needs in order to help students overcome external circumstances that likely inhibit success. Frankly put, "Education alone will never end poverty, and educational practices will never be sufficient to ameliorate the impacts of poverty on educational attainment. A more effective approach may reside in the marriage of social and educational policy strategies" (Goldrick-Rab et al., 2013, p.3).

Now more than ever, community colleges must be intentional in the provision of services if institutions are to reduce major barriers to student progress, retention, performance, and achievement and fulfill their overarching mission. The findings from this study serve as call to action for uncovering and addressing the invisibility of a very pervasive issue impacting educational equity and student success. When it comes to students' basic needs security, this is not a time for complacency. Community colleges can no longer afford to conduct business as usual.

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## Appendix A

## Recruitment Email

*Email Subject line:* Student Food and Housing Survey - Invitation to Participate in a Graduate Student's Research Study

Hello, my name is Vanessa Mercado. I am a community college graduate, and am currently a doctoral student in Educational Leadership at San Francisco State University. I am conducting a research study on the food and housing needs of community college students during the Spring 2017 semester. I am writing to invite you to participate in my study because you are a student enrolled at a community college campus (Berkeley City College, College of Alameda, Laney College, Merritt College) within the Peralta Community College District this semester. The findings from this study will become part of a doctoral dissertation and may be published.

Participation in this research is completely voluntary, and your responses will be anonymous. Participation includes responding to a survey that asks questions about your access to food and eating habits as well as your living situation and housing-related experiences. It also includes some questions on your college experience, use of available services, and personal background. There may be some personal discomfort with the content of certain questions, but you may refuse to answer any question and can stop the survey at any time.

You must be 18 years of age or older to participate. The survey you receive should take approximately 10 minutes to complete. Your decision whether or not to participate in this research will not impact your standing at the community college you are attending.

If you have any questions, please feel free to contact me at [vmercado@mail.sfsu.edu](mailto:vmercado@mail.sfsu.edu).

If you would like to participate now, please click the link below to take the survey.

< *Survey link* >

Sincerely,

Vanessa Mercado, MPH  
Doctoral Student in Educational Leadership  
Graduate College of Education  
San Francisco State University

## Appendix B

### Implied Consent to Participate in Research

You have been invited to participate in this research study because you are a student enrolled at a community college campus (Berkeley City College, College of Alameda, Laney College, Merritt College) within the Peralta Community College District during the Spring 2017 semester.

The information gathered from this anonymous survey will be used to better understand the food and housing needs of community college students. Data collected from this study will be used for completion of a doctorate in educational leadership at San Francisco State University.

The survey questions will ask about your access to food and eating habits as well as your living situation and housing-related experiences. The survey also includes some questions on your college experience, use of available services, and personal background. There may be some personal discomfort with answering these questions, but you can answer only the questions you feel comfortable answering, and you may stop the survey at any time.

You must be 18 years of age or older to participate. There are no risks or benefits to you in participating in this survey. You may choose to participate or not. If you do not wish to participate, you may simply exit the survey, with no penalty to yourself.

If you elect to participate, **completion of the survey indicates your consent to the above conditions. Your decision whether or not to participate in this research will have no influence on your present or future status at San Francisco State University, or the community college you are attending.**

**Please print this page for your records.** The survey should take approximately 10 minutes to complete. Please answer all questions as honestly as possible when completing this survey. Any questions or concerns should be directed to the principal investigator, Vanessa Mercado, at [vmercado@mail.sfsu.edu](mailto:vmercado@mail.sfsu.edu) or the research advisor, Dr. Sheldon Gen, at [sgen@sfsu.edu](mailto:sgen@sfsu.edu).

## Appendix C

## Online Survey

\* Response to question is required

*[Italics provide a description of survey skip logic]*

**Eligibility Confirmation/ “Kick Out” Questions**

1. Are you 18 years or older?\*
  - Yes
  - No *[If response is “no” > end survey]*
  
2. Are you enrolled in any courses for the Spring 2017 semester?\*
  - Yes
  - No *[If response is “no” > end survey]*
  
3. Which community college campus(es) are you enrolled at for the Spring 2017 semester? \* *Check all that apply.*
  - Berkeley City College
  - College of Alameda
  - Laney College
  - Merritt College
  - None of the above *[If response is “none of the above” > end survey]*

*Participants who are ineligible will be redirected to a different screen and will receive the following text:*

**Thank you for being willing to participate. Unfortunately, you do not qualify for this study.**

*[ End of Survey ]*

*Participants who are eligible will be directed to the first section of the survey.*

**Section 1: Food Insecurity Questions**

**The following set of questions are related to your access to food and eating habits.**

4. In the last 30 days, would you say the following statement was often, sometimes, or never true for you?

**The food that I bought just didn't last and I didn't have money to get more.**

- Often true
- Sometimes true
- Never true
- Don't know

5. In the last 30 days, would you say the following statement was often, sometimes, or never true for you?

**I couldn't afford to eat balanced meals.**

- Often true
- Sometimes true
- Never true
- Don't know

6. In the last 30 days, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?

- Yes *[If "yes" to Q.6 then ask Q.7]*
- No
- Don't know

7. In the last 30 days, how many days did this happen?

\_\_\_\_\_ days

8. In the last 30 days, did you ever eat less than you felt you should because there wasn't enough money for food?

- Yes
- No
- Don't know

9. In the last 30 days, were you ever hungry but didn't eat because there wasn't enough money for food?

- Yes
- No
- Don't know

## Section 2: Housing Insecurity Questions

**The next set of questions are related to your living situation and housing-related experiences.**

10. In the past 12 months, have you experienced a rent increase that made it difficult to pay your rent?  
 Yes  No
11. In the past 12 months, have you been unable to pay the full amount of rent or mortgage on time?  
 Yes  No
12. In the past 12 months, have you been unable to pay the full amount of utilities (gas, oil, or electric bill) on time?  
 Yes  No
13. In the past 12 months, how many times have you moved?  
\_\_\_\_\_
14. In the past 12 months, have you lived in shared residence with another family (related or unrelated)?  
 Yes  No
15. In the past 12 months, have you moved in with other people, even for a little while, due to financial problems?  
 Yes  No

**Please indicate whether you have experienced any of the following at any point during the past 12 months:**

*Please indicate "yes" or "no" for each statement.*

16. Have you been thrown out of a home by someone in the household?  
 Yes  No
17. Have you been evicted from a home by a landlord?  
 Yes  No
18. Have you stayed in a shelter?  
 Yes  No

19. Have you stayed in an abandoned building, in an automobile, or any other place not meant for regular housing, even for one night?  
 Yes  No
20. Was there ever a time when you did not know where you were going to sleep at night, even for one night?  
 Yes  No
21. Was there ever a time when you did not have a home?  
 Yes  No

### Section 3: Coping Mechanisms Questions

**The following questions ask about your economic experiences and use of available services.**

22. Have you received services from any of the following programs at any time while enrolled at a community college campus (Berkeley City College, College of Alameda, Laney College, Merritt College) within the Peralta Community College District? *Check all that apply.*
- EBT/CalFresh Program (California's version of the federal food stamps program - Supplemental Nutrition Assistance Program (SNAP))
  - Supplemental Nutrition Program for Women, Infant, and Children (WIC)
  - California Food Assistance Program (CFAP)
  - Food from a church, food pantry, or soup kitchen
  - Housing Assistance (Subsidized housing, public housing, Housing Choice Voucher Program-Section 8, etc.)
  - Utility Assistance (PG&E Assistance (CARE program), Low Income Home Energy Assistance Program (LIHEAP), AT&T Lifeline, etc.)
  - CalWORKs Program
  - EOPS/CARE Program
  - Cooperating Agencies Foster Youth Educational Support (CAFYES) Program
  - Medi-Cal or other public health insurance (HealthPAC, FamilyPACT, Kaiser Child Health Plan, Alliance Group Care/IHSS)
  - Student Health Services/ Campus Wellness Center
  - None of the above

23. How much of your total household monthly income goes towards paying the rent/mortgage?
- 50% or more
  - Less than 50%
  - Don't know
  - Does not apply

#### Section 4: Student and Academic Characteristics Questions

**Please tell us about your college experience.**

24. How many units are you currently enrolled in for the Spring 2017 semester?
- 12 or more units
  - 6 -11 units
  - Less than 6 units
25. On average, how many hours per week do you spend studying, doing homework, or working on class projects? \_\_\_\_\_
26. Did you receive any form of Financial Aid (such as grants, scholarships, loans, work-study) for the Spring 2017 semester?
- Yes
  - No
27. Is Spring 2017 your first semester as a student at the Peralta Community College District (Berkeley City College, College of Alameda, Laney College, Merritt College)?
- Yes
  - No

*[If "No" to Q.27 ask the following Q.28 -Q.31 total semester, credits earned, suspend studies, GPA]*

28. How many semesters have you been enrolled at the Peralta Community College District (Berkeley City College, College of Alameda, Laney College, Merritt College)? \_\_\_\_\_
29. What is the estimated total number of course credits you have earned at the Peralta Community College District (Berkeley City College, College of Alameda, Laney College, Merritt College)? \_\_\_\_\_

30. Since you first enrolled at the Peralta Community College District (Berkeley City College, College of Alameda, Laney College, Merritt College), did you ever have to suspend your studies for at least one semester?

- Yes
- No

31. Which of the following best describes your overall Grade Point Average (GPA) at the Peralta Community College District (Berkeley City College, College of Alameda, Laney College, Merritt College)?

- 3.5 – 4.0 (A/B average)
- 3.0 – 3.49 (B average)
- 2.5 – 2.9 (B/C average)
- 2.0 – 2.49 (C average)
- Less than 2.0 (D/ F average)
- Don't know

**The next questions refer to your educational experience in general, within the indicated timeframe, and are not necessarily specific to your experience as a student at the Peralta Community College District.**

32. In the last 12 months, have hunger or housing problems had an impact on your education?

- Yes *[If "yes" to Q.32 then ask Q.33]*
- No

33. In the last 12 months, have hunger or housing problems caused you to do any of the following?

*Please indicate "yes" or "no" for each statement.*

- Miss a class
- Miss a study session
- Opt not to join an extracurricular activity
- Not buy a required textbook
- Drop a class
- Not perform as well in your academics as you otherwise could have

### Section 5: Demographics Questions

**Please tell us more about yourself.**

34. What is your age (in years)? \_\_\_\_\_
35. Please select the gender you most identify with:
- Male
  - Female
  - Transgender
  - None of the above
36. What is your race/ethnicity?
- Black/African American
  - Latino/Hispanic
  - Asian
  - Pacific Islander/Native Hawaiian
  - Filipino
  - American Indian/Alaska Native
  - White
  - More than one race/ethnicity
  - Other
37. What is your citizenship status?
- U.S. Citizen
  - Permanent Resident
  - Not a U.S. Citizen or permanent resident
- (If selected, Please indicate if any of the following apply to you:)
- International student
  - DREAMer /DACA student
38. What is the highest level of education completed by your parents/guardians?
- High school or less
  - Some college but no degree
  - Associate (two year) degree
  - Bachelor's (four year) degree
  - Graduate degree (e.g. master's, PhD, etc.)
  - Don't know

39. Do you have any children?

- Yes
- No

40. Are you employed?

- Yes
- No

*[If "Yes" to Q 40 on employment then ask the following Q.41 about hours worked]*

41. On average, how many hours per week do you work while attending school?

- Less than 10 hours
- 10 -14 hours
- 15 - 19 hours
- 20 - 24 hours
- 25 - 29 hours
- 30 - 34 hours
- 35 - 39 hours
- 40 hours or more

42. What is your annual household income?

- Less than \$5,000
- \$5,001 to \$15,000
- \$15,001 to \$25,000
- \$25,001 to \$50,000
- \$50,001 to \$75,000
- \$75,001 to \$100,000
- \$100,001 to \$125,000
- \$125,001 to \$150,000
- \$150,001 or more
- Don't know

**Your survey is now complete! Thank you for your participation.**

## Appendix D

### Resource Sheet

Below is a list of resources to get more information about local food and housing related programs and services, and to request assistance if you or someone you know has immediate, temporary food or housing need. **Please print this page for your records.**

#### **Emergency Shelter and Food**

If you are in need of immediate emergency shelter and/or food assistance, please contact:

*Eden Information and Referral:* For all community services in the East Bay, including emergency shelter and food, call 510-537-2710 or 510-537-2552.

*Bay Area Helpline:* For all community services in the Bay Area call 1-800-273-6222.

#### **211 Alameda County**

This is a free, non-emergency, confidential service that provides easy access for anyone who needs assistance with Health, Housing, & Human Services. Phone operators with multi-lingual capabilities are available 24 hours a day, 7 days to help connect you to services.

The Alameda County direct phone number is 510-537-2552.

Visit the 211 Eden Information & Referral “*Resource Finder*” webpage for more information <http://www.alamedaco.info/>

#### **Peralta Community College District’s Student Health Services**

<http://web.peralta.edu/health-services/>

\*Visit the Campus Wellness Center at any Peralta college (Berkeley City College, College of Alameda, Laney College and Merritt College) for health services available to all Peralta students at no additional cost.

#### **Alameda Social Services**

Alameda County Social Services Agency [www.alamedasocialservices.org](http://www.alamedasocialservices.org)

\*For more information about food and housing assistance programs contact the local county office.

Hours of Operation for all offices: Monday – Friday 8:30am - 5:00pm

**North County**

North Oakland Self Sufficiency Center  
2000 San Pablo Ave  
Oakland CA 94612  
510-891-0700

**Medi-Cal Center**

Enterprise Self Sufficiency Center  
8477 Enterprise Way  
Oakland CA 94621  
510-777-2300

**East County**

Eastmont Self-Sufficiency Center  
6955 Foothill Blvd Suite 100  
Oakland CA 94605  
510-383-5300

**South County**

Eden Area Multi-Service Center  
24100 Amador St  
Hayward CA 94544  
510-670-6000