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Supporting Young People's Food Security:

CalFresh Participation
During and After High School

**HUIZHI GONG, JENNIFER HOGG, SARAH HOOVER,
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Executive Summary

The transition from high school to early adulthood is a time when students must learn how to handle elements of daily life independently, and is a particularly challenging time to experience food insecurity. Students who previously had access to food benefits in high school, such as the Supplemental Nutrition Assistance Program (SNAP), may have trouble retaining that support, particularly if they move away from home and must re-apply on their own. Eligibility rules that apply only to college students may also present another barrier. Connecting more young people to the public benefits they're eligible for may help them to succeed in college or their early careers.

The California Policy Lab (CPL) partnered with California's education systems and social services agencies to build a linked database of student-level administrative data on student enrollment, financial aid, and SNAP participation (called CalFresh in California) to make research on this topic possible. This report provides new insights on participation in CalFresh during the final years of high school and the first few years after high school, and the factors that influence whether students continue to receive benefits. In this report, we focus on the public high school graduating classes of 2015–2021.

Key Findings

1. In California, over a quarter (28%) of students in the graduating classes of 2015–2021 participated in CalFresh at some point during high school, and 19% participated during their senior year.
2. Two years after their high school graduation, fewer than half (47%) of students who participated during their senior year of high school were still participating in CalFresh.
3. Among students who enroll in college immediately after high school, those who go to the University of California (UC) are more likely to continue participating in CalFresh than students who attend a California Community College (CCC). This is due, in part, to the fact that UC students are more likely to remain eligible for CalFresh than CCC students.
4. The high school classes of 2020 and 2021, who graduated during the pandemic, were more likely than earlier cohorts to continue accessing CalFresh upon entering college. This may be due to pandemic-era policies that increased the amount of monthly benefits and made it easier to enroll (and stay enrolled) in CalFresh.

5. Students who participated in CalFresh for a longer period of time in high school were more likely to continue participating in college. In addition, we find significant variation in who stays enrolled in CalFresh during college by race and ethnicity and indicators of disadvantage, which has implications for outreach efforts.
6. Of students who stopped participating in CalFresh when they entered college, we estimate that more than half (60%) were still eligible. Many of the remaining 40% were no longer eligible because of the “Student Rule” that makes it harder for college students to qualify.

1. Introduction

Students who are hungry have trouble learning and succeeding in school. In 2014, an estimated 20.9 percent of children (under 18) nationwide lived in households that experienced food insecurity (Coleman-Jensen et al., 2015). There is growing awareness that college students are also affected by food insecurity, with an estimated 23% of all U.S. college students reporting that they are food insecure (GAO, 2024). Among community college students, the share is higher; between 42% and 56% of community college students reported being food insecure each year between 2015 and 2020 (Goldrick-Rab et al., 2019). Food insecurity rates are higher for African American, Hispanic, and first-generation students (Henry, 2017; Goldrick-Rab et al., 2015; Nazmi et al., 2018).

For college students, food insecurity negatively impacts academic performance, in addition to their physical, mental, and social health (Alaimo et al., 2001; Broton & Goldrick-Rab, 2016; Jyoti et al., 2005). Food insecure community college students are more likely to report low GPAs than food secure students (Maroto et al., 2015) and among UC students, food insecurity was found to be directly related to lower student GPAs (Martinez et al., 2020). However, programs that address younger students' food security, such as school meals and family nutrition benefits (SNAP, known as CalFresh in California), have shown positive impacts on student success (Gassman-Pines & Bellows, 2018; Bailey et al., 2020; Hoynes et al., 2016).

The transition from high school to college or career — a time of high-stakes decisions that will affect long-term success — may be a particularly consequential period to experience food insecurity. Low-income high school students face a number of challenges in determining how to afford college, and in navigating their housing, transportation, and financial aid options (Castleman & Page, 2020). Students from low-income families who had access to CalFresh but move out of their parent's home will need to navigate applying on their own if they want to continue receiving this support. Many studies evaluate the impact of interventions to ease academic and financial barriers during this transition, but few focus on this transition as a critical period for student's basic needs (Page, 2016). While there are growing efforts to provide services (campus basic needs centers, connecting students to CalFresh benefits) to help college students meet their basic needs, there has been less focus on student needs and service use (and continuity) during the high school to college transition. There are only a few estimates of CalFresh participation rates for K–12 and college students (Danielson & Bohn, 2017; Perez et al., 2024), and to our knowledge, the overlap in participation during this transition period has not been examined.

This report seeks to better understand student access to CalFresh during the transition from high school by answering the following research questions:

1. How much continuity is there in CalFresh participation during the transition from high school to college or other post-high school activities? How does this vary over time, and across different groups of students? Are there student characteristics that are sufficiently predictive of continuity (or lack thereof) to be useful in designing CalFresh outreach efforts focused on new college students?
2. Among students who attend college after high school, how many are eligible for CalFresh while in college, and how many were eligible in high school? How do these relate to each other, and how do they each relate to CalFresh participation during the transition?

California, like other states, devotes substantial resources to connect more eligible students to CalFresh.¹ This report provides policymakers, higher education administrators, student groups, and community-based organizations with more information about which students may need more support to stay connected to benefits.

¹ This includes six laws enacted in the last three years alone: (1) AB 396 broadens the set of Local Programs to Increase Employability (LPIE) that qualify students for CalFresh; (2) AB 1329 requires counties to designate a staff liaison to encourage greater college student participation; (3) AB 543 requires that colleges provide information on CalFresh as part of their new student orientation; (4) SB 641 imposes new requirements to minimize burden for applicants and requires improvements to data systems to better monitor student usage of CalFresh; (5) AB 2810 requires most colleges to inform students that they are income-eligible based on their FAFSAs; and (6) SB 129 allocates \$100 million to establish new basic needs centers and support existing centers across the community college system.

2. Data Sources

This study leverages the California Policy Lab's [Student Supports Dataset](#), a unique linked dataset of de-identified administrative data from five state agency partners, spanning from 2010–2022.² The five state agency partners include the California Department of Education (CDE), the California Department of Social Services (CDSS), the California Student Aid Commission (CSAC), the California Community Colleges Chancellor's Office (CCCCO), and the University of California Office of the President (UCOP). This database follows all California public high school students through their high school years and beyond, and their data is linked to their CalFresh participation (before and after high school graduation), college enrollment, financial aid application, and payment records.

To preserve privacy while enabling individual-level record linkage, CPL developed a hashed linkage methodology (Fu et al., 2022). Each partner agency encrypts the personally identifiable information (PII) from their system using an irreversible hashing algorithm. They transmit the data to CPL containing the encrypted identifiers but not the original PII, and we link data together using these encrypted identifiers. Our hashing and linkage code is open-source and available on GitHub. For more information on our Linkage Methodology, see [Appendix A](#).

² In this report, we focus on California public high school graduates in the classes of 2015–2021, as this sample includes the most complete data for our analysis.

3. Methodology

To answer our first research question, we show the share of California students participating in CalFresh during high school and document the share that appears on a CalFresh case in the two years following high school graduation. We describe what share appears to be new cases, versus a continuation of cases that originated while the students were in high school. We focus on annual participation measures by academic years. For example, we measure the share of students who participate in CalFresh during their senior year by counting all students who appear on a CalFresh case for any month between July before senior year to June of senior year. We measure the share of students participating in the first year after high school graduation by counting students with any participation between January and June of the year after graduation. We exclude participation in July to December after high school graduation to account for “holdover cases” — students who remain on their families’ cases over the summer after high school but then leave those cases in the fall. In section 4, under “Defining CalFresh Continuity,” we provide more information on our analysis of these cases and how we came to this definition. We measure the share of students participating in the second year after high school graduation by counting students with any participation between July the year following graduation and June two years after graduation.

From section 5 through the remainder of the report, we focus on the college-going population. Our descriptive analysis sample includes students who graduated from a public California high school in 2015–2021 and participated in CalFresh their senior year, and then went to a UC, CCC, or received a Cal Grant at a California State University (CSU) within one academic year (referred to as “college students” throughout the report).³ For some descriptive analyses, the variables are derived from the Free Application for Federal Student Aid (FAFSA) data and are thus restricted to FAFSA-filers, which we specify accordingly in the figure and table samples. We show how continuity varies across several student demographic and situational factors, focusing on those factors which we hypothesize would significantly impact continuity, using regression analysis. Specifically, we fit a logistic regression model to measure the correlation between college system (UC or CCC), moving counties, and housing plans and CalFresh participation in the first two years of college, controlling for student, family, and high school background characteristics. The regression sample is limited to those students who went immediately from high school to a UC or CCC (referred to as “UC and CCC students” throughout the report).

³ This includes all California college students we observe in our data, which does not include CSU students who did not receive a Cal Grant or students who attend private institutions. About half of all CSU students receive a Cal Grant each year.

$$\text{logit}(Y) = a + \beta_1(\text{student chars}) + \beta_2(\text{family chars}) + \beta_3(\text{case length}) + \beta_4(\text{HS chars}) + \beta_5(\text{filed FAFSA}) + \beta_6(\text{graduating class}) + \beta_7(\text{segment}) + \beta_8(\text{college and HS in same county}) + \beta_9(\text{college housing status})$$

We choose our specific explanatory variables because we expect they may influence whether a student stays on CalFresh in college. Students who move to new counties would need to interact with a new county social services office to retain benefits, which could be more challenging than students who stay in the same county. Outreach efforts may differ across systems and campuses. And our past work shows that a student's housing situation is an important determinant of their CalFresh eligibility (Rothstein et al., 2024).

To answer our second research question, we build upon our eligibility estimator for California college students that maps fields in the college administrative records and the FAFSA to the complex criteria for student CalFresh eligibility (Rothstein et al., 2024). We use this estimator to measure CalFresh eligibility in college among students who attended a California public high school and enroll in a CCC or UC after graduation.

We similarly measure the share of students who were eligible during their senior year of high school, modifying our eligibility estimator to simulate family eligibility. We are able to do this because students who file FAFSAs report their families' circumstances and incomes during high school.

We classify a high school student as eligible for CalFresh if they meet the following criteria:

1. Citizenship: The student is a U.S. citizen or eligible non-citizen (e.g., legal permanent resident)
2. Income eligibility: The student's household's income is below the gross income threshold
3. Safe harbors: The student's household does not meet the income eligibility criteria, but they satisfy any of the other criteria that might make them eligible or that change the eligibility criteria (such as having an elderly or disabled household member or receiving other safety-net benefits)⁴

[Appendix B](#) discusses how we approximate each of these decisions and the data elements that contribute to each. In section 6 of this report, we summarize pre- and post-matriculation eligibility and participation to understand how changes in participation are related to changes in eligibility.

⁴ College student eligibility also depends on CalFresh student status and student exemptions.

It is important to note that we do not directly observe many elements of CalFresh eligibility because we do not have data on CalFresh applications. We can only approximate the eligibility criteria with the data that we have available, and consequently, our eligibility assessments are imperfect. They cannot, and are not intended to, support determinations of individual students' eligibility, which they will sometimes get wrong (in both directions). After extensive analyses, however, we are confident that our estimates are reasonably accurate for the purpose of measuring overall eligibility rates. See Rothstein et al. (2024) for further discussion.

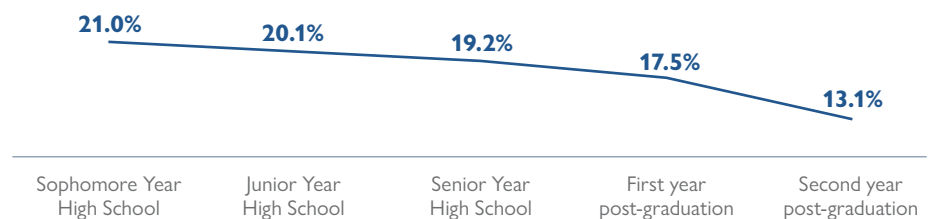
4. Continuity in CalFresh Participation After High School

We begin this section by reviewing overall trends in CalFresh participation during the high school to post-high school transition. We then focus on factors that influence whether students who participated in high school continue after graduation, including students who do not go on to college.

CalFresh participation during and after high school

Of the 3.1 million students who graduated from a California public high school during the 2015–2021 time period, over a quarter (27.8%) participated in CalFresh at some point while in high school. However, CalFresh participation rates decline slightly as students progress through high school, and then more rapidly in the two years after graduation (Figure 1).

FIGURE 1. Share of individuals participating in CalFresh, by year relative to high school graduation



Sample: California high school graduates (Classes of 2015–2021). Note that the “first year post-graduation” time frame counts only participation from December to June (to avoid including “holdover cases”), whereas other measures count participation anytime in the July to June period.

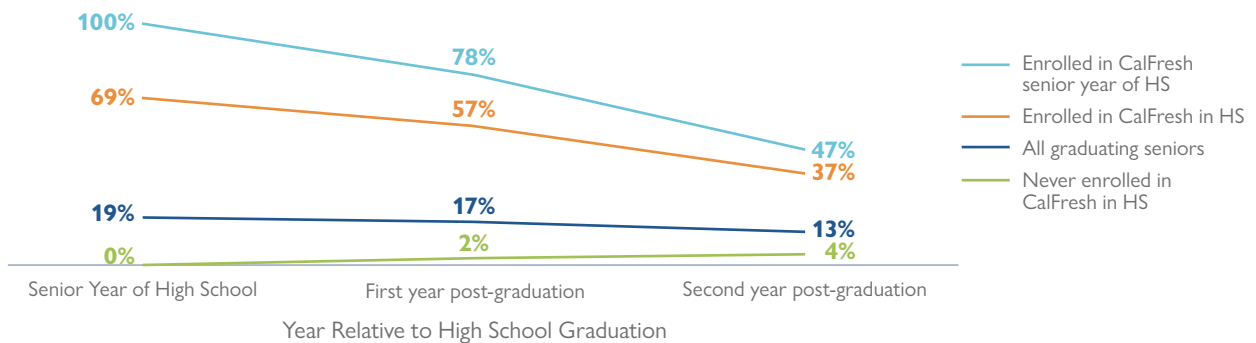
Students who participate in CalFresh in high school are much more likely to continue participating afterwards. More than three-quarters of students who participate in CalFresh during their senior year of high school continue to participate the following year (78.4%) (Figure 2).⁵ However, by the second year, post-graduation, fewer than half (47.4%) are still participating. Among students who participate in CalFresh at any point during high school, slightly more than half (57.3%) participate the year after graduating, and a third (37.4%) participate in the second year after graduating.

⁵ This participation rate, and all of those that follow, define “first year participation” as participation during January–June of the calendar year following high school and does not include “holdover” cases from July to Dec in the year immediately after graduation, as described in section 3.

The magnitude of this decline, particularly from the first year post-high school to the second, is striking. This may happen because some students continue to live at home the year after high school graduation but then move away during that first year and do not successfully enroll on their own. Alternatively, some of these students may earn enough income by the second year, post-high school so that they no longer qualify, or they become ineligible for some other reason.⁶

The share of individuals who never participated in CalFresh in high school who do participate after graduating is quite low (2.1% in the first year after high school and 3.7% the following year) (Figure 2). Nevertheless, because the group of individuals who don't participate in high school is quite large, these individuals account for one-fifth of CalFresh participants in the second year, post-graduation.

FIGURE 2. Share of individuals participating in CalFresh two years after high school, by high school CalFresh participation



Sample: California high school graduates (Classes of 2015–2021). Note that the “first year post-graduation” time frame counts only participation from December to June, where other measures count participation anytime in the July to June period.

Population sizes: All graduating seniors (N=3,131,417); Enrolled in CalFresh in High School (N=871,584); Enrolled in CalFresh senior year (N=601,329); Never enrolled in CalFresh in High School (N=2,259,833).

Defining CalFresh continuity

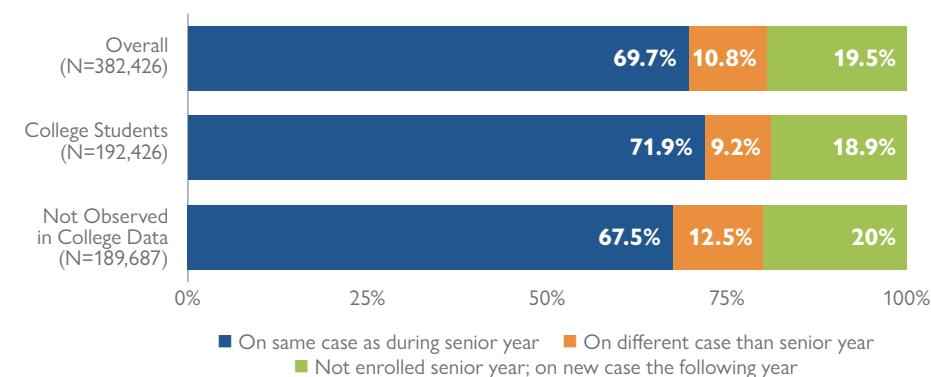
Students who move away from home after high school may still appear on their family’s CalFresh case for a period of time. Families are required to provide updated household information at periodic recertifications (six months after enrolling and annually after that) and may also volunteer any updates in between recertifications.⁷ Therefore, a student may appear to be on their family’s case for several months after they leave home before records are updated and they are removed from their family’s case. Conversely, some individuals continue to live at home after high school and directly benefit from their family’s CalFresh case.

⁶ This could include enrolling in college after a “gap year” and not having a college student exemption required to remain eligible or being subject to the “Able-Bodied Adults Without Dependents” case length restrictions.

⁷ If the family also participates in CalWORKs, they are required to update this information within 10 days of any changes. During the height of the COVID-19 pandemic, some of the recertification requirements were waived.

More than two out of three young people (69.7%) who appear on a CalFresh case in the year following high school graduation are still on their family's case (Figure 3). About 11% are individuals switching from an old case to a new case, and the remaining 19.5% are recent high school graduates on new cases who had not participated in CalFresh during their senior year of high school.

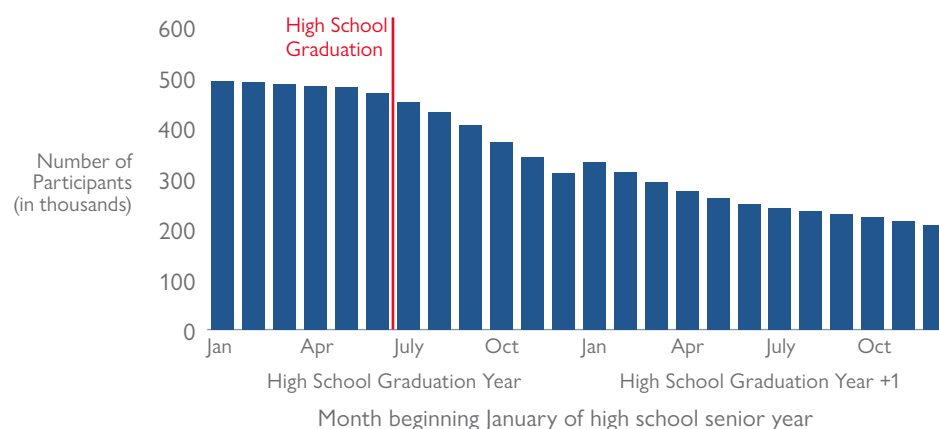
Figure 3. CalFresh case type among CalFresh participants in first academic year after high school, by postsecondary enrollment



Sample: California high school graduates (classes of 2015–2021) who participate in CalFresh in July of their high school graduation year through the following June.

For recent high school graduates on a family CalFresh case during the year after high school, participation falls most sharply in the summer and early fall months after high school (Figure 4). This may reflect the gradual process of removing these recent graduates from the family case as they move away from home.

FIGURE 4. Number of CalFresh participants remaining on an existing family case, by month



Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh during their senior year (July to June) and at least one month of the academic year afterwards (July to June).

To focus on individuals who are receiving CalFresh benefits after high school, we therefore do not consider participation in the summer and fall after graduation (July to December) in the remainder of the report and **define first year post-graduation CalFresh participation as participation in January to June in the year after graduation.** By this time, most students who would be considered separate households for CalFresh purposes will no longer be on their family's CalFresh case.

Section five examines factors that influence CalFresh continuity. **Students who we consider having “CalFresh continuity” during this transition are those who participate in CalFresh their senior year of high school and also participate within the first two years post-high school (not counting July–Dec during the first year, as mentioned above).**

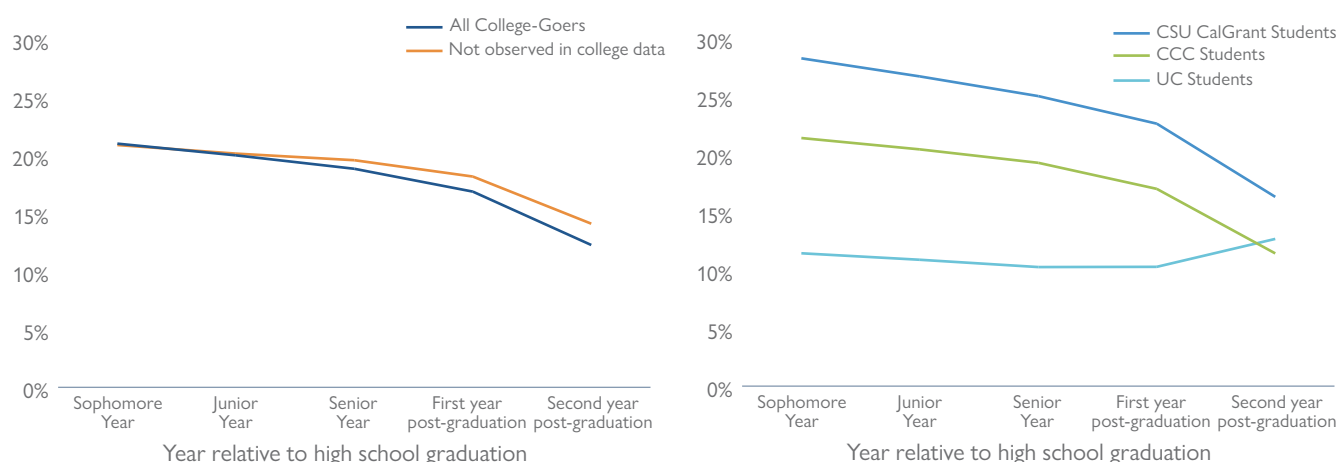
5. Examining Factors Influencing CalFresh Continuity

This section examines whether there are student characteristics that are predictive of CalFresh continuity, which can help inform outreach efforts. These characteristics include whether a student attends college and where, their living arrangements, graduating class, and student demographics.

College-going & college choice

Students who appear in our college data are slightly less likely to participate in CalFresh in the two years following high school graduation than those who do not. The participation rates of the two groups are similar in high school; college-bound students are slightly more likely to participate as sophomores, and slightly less likely to participate as juniors or seniors, but the differences are very small. After graduation, participation drops by about 7 percentage points for college-bound students (blue line in [Figure 5a](#)) and by 6 percentage points for those we do not observe going on to college (orange line in [Figure 5a](#)) in the first two years after high school. The difference is small, but consistent across demographic groups.

FIGURES 5A AND B. Share of individuals participating in CalFresh, by postsecondary education enrollment and year relative to graduation



Sample: California high school graduates (Classes of 2015–2021)

Participation rates vary more substantially by college system (UC, CCC, or CSU), and UC-bound students participate at higher rates in college than in high school ([Figure 5b](#)). Among students who go on to attend a UC, participation in high school is low but increases during the transition, from 10% of senior-year students to 13% two years later. By contrast, both CCC students and California State University (CSU) students (of whom we can observe only those who receive Cal Grants) have higher participation rates in high school but

their rates decline following high school graduation. The population of students who attend the different higher education systems differ in ways that impact CalFresh participation (for example, students who attend UC tend to come from higher-income families), however, our regression analysis controls for many of these factors and the sample is limited to students who participated in CalFresh in high school. We find that compared to attending a CCC, attending a UC is still associated with a 6 percentage-point increase in the probability of retaining CalFresh benefits after high school (see [Appendix D](#) for detailed regression results).

This difference by system is driven by two primary factors. The first is that **UC students are more likely to remain eligible in college than CCC students.** In fact, students who go on to attend a UC are more likely to be eligible for CalFresh in college than they were in high school; the same is not true of CCC students. As discussed below in section 6 and in the companion report (Rothstein et al., 2024), higher UC eligibility reflects differences in housing situations and qualification for benefits, not higher student need. The second is that UC campuses opened more formalized basic needs centers around 2017, after which there was a marked increase in take-up among eligible students (Rothstein et al., 2024). Recent legislation (AB 132) invested more resources in CCC basic needs services, which may affect these results going forward.

Predictors of CalFresh continuity among college students

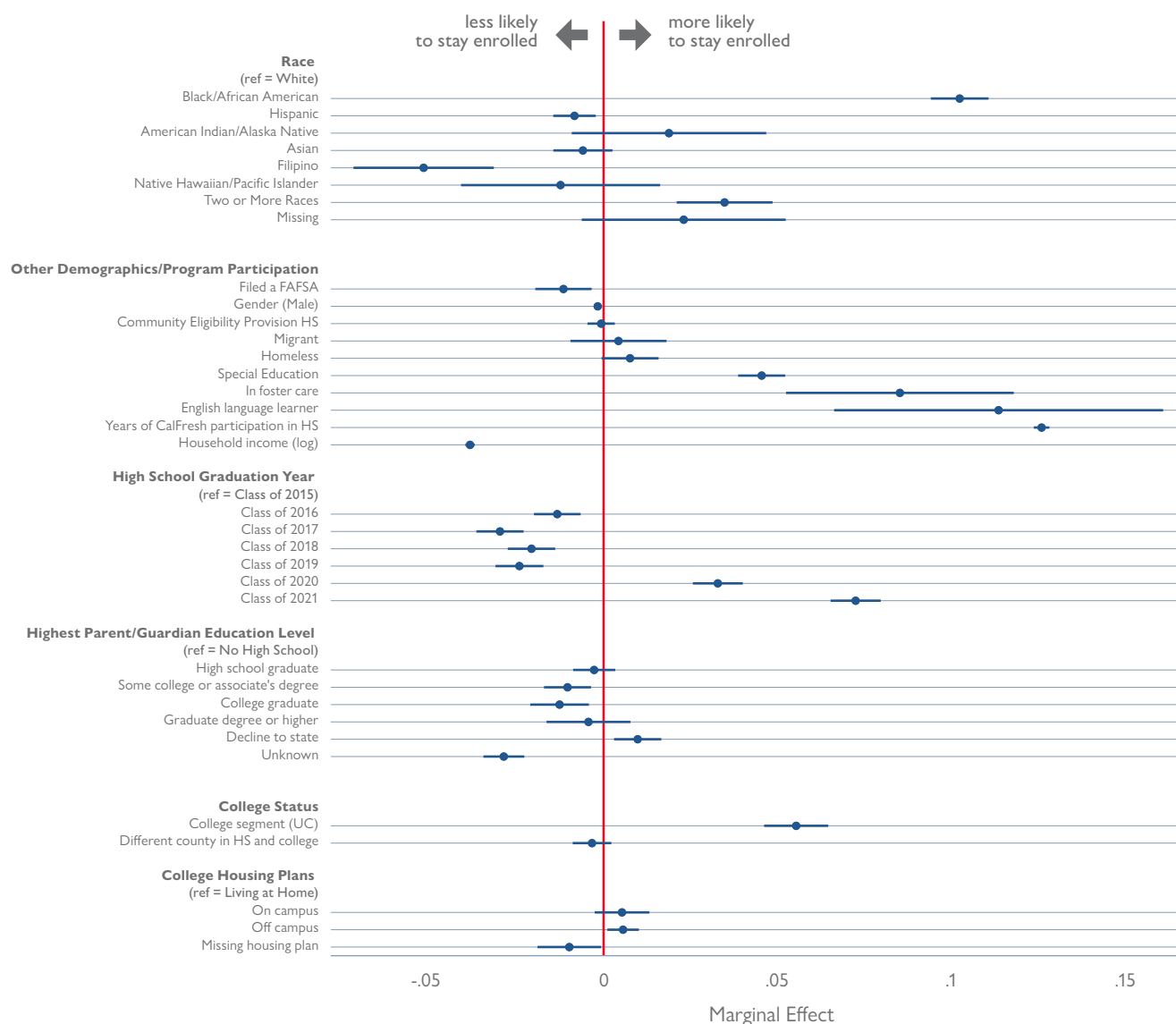
The remainder of the report focuses on the college-going population specifically. Among students who participated in CalFresh in their senior year of high school and went on to a UC or CCC, **the length of participation in CalFresh in high school is the most predictive factor of CalFresh participation in college.** In addition, students who graduated high school during the pandemic were more likely to continue accessing benefits. As discussed above, UC students are more likely to retain benefits than CCC students. We also find significant variation by race and ethnicity and other student demographics, as well as graduating class. We find a very small positive effect of living off campus, compared to other living arrangements. We do not find that college CalFresh participation varies significantly by whether a student moves to a different county for college.

[Figure 6](#) summarizes the marginal effects of the covariates included in our logistic regression model (specified in section 3) and gives a sense for the relative magnitude of each of these predictors, and whether they are statistically significantly different from zero. The specific values of the marginal effects can be found in [Appendix D](#). In addition, we stratified these results by college system and we present the system-specific marginal effects in [Appendix E](#).

The marginal effect is the percentage point change in the probability of continuing to participate in CalFresh in the first two years of college. So, for example, the

Special Education marginal effect is 0.046 which means that being designated as receiving special education services in high school is associated with a 4.6 percentage point increase in the probability of participating in CalFresh in the first two years of college, holding all else equal.⁸ The covariates whose lines do not overlap with zero — marked as the vertical red line — are statistically significant. We discuss these results in more detail in the sections that follow.

FIGURE 6. Association between student characteristics and CalFresh continuity, logit analysis



Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh senior year and attended a CCC or UC within one academic year.

8 All but two of the variables included in this model are binary (yes/no) variables. The two exceptions are log income (measured as annual family income) and length of CalFresh participation in high school (measured in years). The interpretation of these two effects is slightly different. For log income, the marginal effect size of -0.038 means that a 1% increase in gross income is associated with a 3.8 percentage point decrease in the probability of continuing to use CalFresh in college. For length of participation in CalFresh in high school, a marginal effect of 0.126 means that an additional year of participation in high school is associated with a 12.6 percentage point increase in the probability of continuing to use CalFresh in college.

High school case length

Students whose household participated in CalFresh for a longer period during high school are more likely to participate during the transition to college. An additional year of CalFresh participation in high school is associated with a 12.6 percentage point increase in the probability of retaining benefits in college.

High school graduation cohort

Students who graduated high school during the pandemic (classes of 2020 and 2021) were more likely than students from earlier cohorts to continue participating in CalFresh upon entering college. During the pandemic, Congress and the USDA suspended certain administrative requirements to apply for and stay enrolled in SNAP, such as application and recertification interviews.⁹ This flexibility may have made it easier for eligible students to continue participating in CalFresh during this transition period. In addition, the benefit amount of SNAP/CalFresh payments increased significantly.¹⁰ Among UC and CCC students, CalFresh benefits increased by \$120 a month per person, on average, during the pandemic (Perez et al., 2025) such that UC undergrads were receiving \$303 a month, and CCC students received \$245 a month. The increased generosity of the program and the lower burdens to retain benefits may have contributed to the higher continuity in this period. Finally, more college students became eligible for CalFresh during the pandemic after two exemptions were temporarily added. This special eligibility rule is discussed more in section 6.¹¹ [Appendix C](#) displays participation rates by high school graduation cohort.

College living arrangements

Continuity rates are remarkably similar for students who live with parents, live on campus, and live off campus during college ([Table 1](#)). The overall regression results reveal a small positive effect of living off campus on continuity (0.6 percentage points more likely to continue using CalFresh than those who remain at home). The stratified results by college system are more informative, and indicate that **for UC students, there are no significant differences by living arrangement, whereas CCC students are more likely to continue participating in CalFresh if they move away from home (on or off campus) ([Appendix E](#)).**

⁹ <https://cdss.ca.gov/Portals/9/Additional-Resources/Letters-and-Notices/ACWDL/2020/CL-10-21-20.pdf>

¹⁰ <https://fns-prod.azureedge.us/sites/default/files/resource-files/SNAP-COVID-EmergencyAllotmentsGuidance.pdf>

¹¹ These temporary exemptions include having Zero Expected Family Contribution (0EFC) on your FAFSA and being eligible for Work Study.

TABLE 1. Share of UC or CCC college students participating in CalFresh within two years of high school, by college living arrangement

	ENROLLED IN CALFRESH	
	First year post-graduation (%)	Second year post-graduation (%)
Living with Parent (N=147,279)	78.2	42.3
Off Campus (N=71,687)	79.1	45.9
On Campus (N=54,732)	79.1	46.3

Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh senior year and filed a FAFSA and attended a CCC or UC within one academic year.

This may seem counterintuitive, as students who continue to live with their parents during college can remain on their parents' CalFresh cases, while those who move out must establish their own cases to remain in the program. However, for students who live at home, once they turn 18, any income they earn starts counting toward their family's income for CalFresh purposes, which could push the family over the threshold of CalFresh eligibility. These results suggest that for students living on their own, the increased chances of eligibility (because only their income counts) may outweigh the administrative hurdles of applying for CalFresh on their own. Finally, it is possible that some students who move out of their parent's home for college nevertheless remain on their parent's case, though in principle this should be corrected at the next recertification.

Moving to a different county

In California, public benefits are administered by counties, and moving between counties may create friction when applying for CalFresh. Students who remain in the county where they attended high school may be able to leverage their family's knowledge of that county's process, while students who move would need to identify their new county office and learn how they process CalFresh applications. If a student started their own case prior to moving, they would need to apply for an inter-county transfer.

We do not find that remaining in one's county makes a meaningful difference for CalFresh continuity among UC and CCC students. The share of students participating in CalFresh after high school appears similar between movers and non-movers, and staying in the same county is not a statistically significant predictor of continuity, holding other related factors such as living situation constant. In fact, moving counties between high school and college is positively associated with CalFresh continuity, a difference that is mostly driven by UC students, which we show in [Appendix E](#).

TABLE 2. Share of CCC and UC students participating in CalFresh within two years of high school, by inter-county movement

	ENROLLED IN CALFRESH	
	First Year Post-High School Graduation (%)	Second Year Post-High School Graduation (%)
Moved counties after high school (N=53,982)	77.2	46.0
Did not move counties after high school (N=214,498)	78.3	43.3

Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh senior year and attend a CCC or UC within one academic year

Differences in continuity by student background

Black/African American students and students who are multiracial are 10.3 and 3.5 percentage points more likely to continue participating in CalFresh in college than their White peers, respectively.¹² Among CCC students, Hispanic and Filipino students are less likely to continue participating compared to their White peers ([Appendix D](#)). Among UC students, the racial and ethnic differences are not statistically significant ([Appendix E](#)). It may be that language or other cultural factors present a unique barrier for Hispanic and Filipino CCC students. Additional research into the causes of these disparities could help inform targeted interventions to reduce the drop off in participation among these students. We also find that female students have higher continuity in CalFresh participation than their male peers.

Students whose families have relatively higher incomes in high school (albeit still low enough to qualify for CalFresh) were less likely to continue participating in college. In contrast, students with other specific indicators of disadvantage in high school (students experiencing homelessness, students in the foster care system, students receiving special education services, and students designated English language learners) are all more likely to continue participating in CalFresh. It may be that these students are better connected to systems or supports that help them to navigate and stay enrolled in CalFresh.

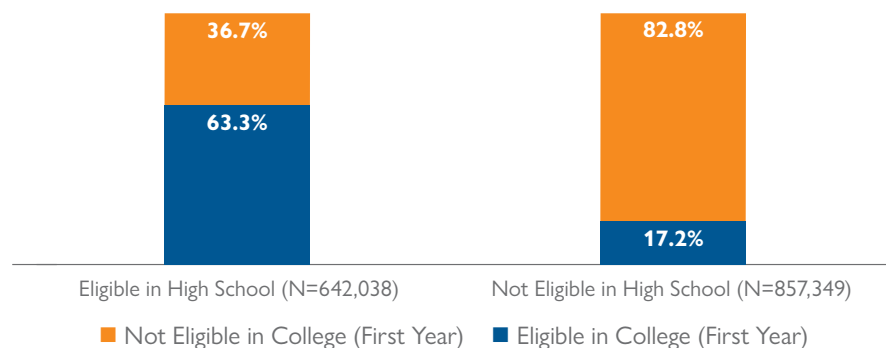
12 We rely on the racial and ethnic subgroups that are reported in the CDE administrative data, which are largely provided by parents/guardians.

6. The Role of Eligibility

Students can only continue participating in CalFresh in college if they are still eligible. However, college students face a specific set of CalFresh eligibility rules. In order to qualify for CalFresh, students who are enrolled more than half time in coursework must meet additional criteria known as “exemptions.” Examples of exemptions include being a student parent, participation in certain employment programs, and participation in federal or state work study. **In looking at students who participated in CalFresh during their senior year of high school and go on to college, we find that only 63% of them would meet an exemption during their first year of college.** The remaining 37% cannot qualify, even if their income remains low in college.

Whether due to exemptions or income, there is a shift in which students are eligible for CalFresh in college. Among students who are eligible for CalFresh in high school and who go straight to a UC or CCC, less than two-thirds continue to be eligible in college (Figure 7). That means that **over a third of students (37%) who are eligible their senior year and go on to college become ineligible once they enter college.** Conversely, about one in six students (17%) who are not eligible in high school become newly eligible in college. These students meet all the income and exemption criteria upon entering college but may not have as much knowledge of the program and may benefit from additional outreach.

FIGURE 7. CalFresh eligibility rates in high school and college among CCC and UC students



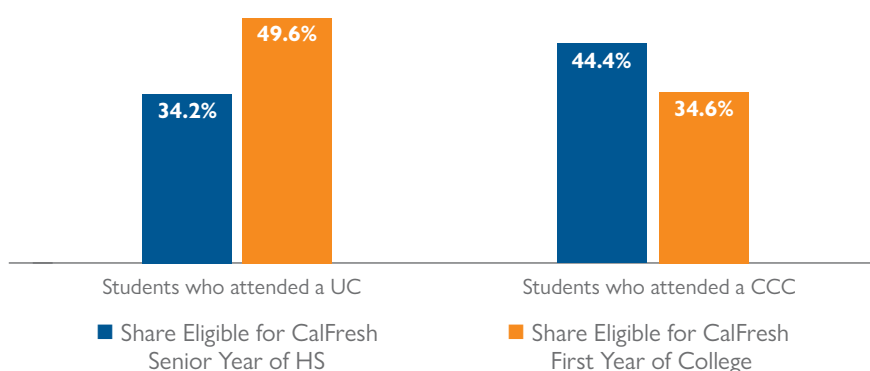
Sample: California high school graduates (Classes of 2015–2021) who attend a CCC or UC within one academic year.

It appears that changes in eligibility — namely, the loss of eligibility upon entering college — may play a major role in the drop off in participation we observe in the previous sections. Indeed, among students who participate in high school but who do not participate in college, we find that loss of eligibility accounts for 40% of this drop-off in participation. The other 60% of students appear to be eligible once they arrive at college, but they do not participate, which may

be a voluntary decision, or may reflect other barriers to participation including administrative complexity and stigma (Chavarin-Rivas et al., 2021).

Eligibility also differs by system. **For students who go on to attend a UC directly after high school, the share who are eligible for CalFresh increases once they enter college.** About one third of these students are eligible in high school (34%), compared to half in the first year of college (50%) (Figure 8). Conversely, 44% of students who go on to attend a CCC are eligible for CalFresh in high school. Once they enter college, that share drops to 35%.

FIGURE 8. CalFresh eligibility rates among CCC and UC students



Sample: California high school graduates (Classes of 2015–2021) who attend a CCC or UC within one academic year.

The higher eligibility rate among UC students is consistent with CPL’s prior research (Rothstein et al., 2024), which finds that UC students tend to come from higher income families (consistent with their lower eligibility in high school) but that a greater share of them are eligible for CalFresh in college because they are less likely to live with their parents than CCC students.¹³ One shortcoming of our approach is that students who participate in meal plans that cover over half of their meals — which is common for first-year students at UC — are not eligible for CalFresh. This is not something we are able to observe, and therefore, this is not incorporated into our estimates and the 49.6% figure is likely an over-estimate.¹⁴ However, students who we estimate to be eligible, but are in fact ineligible due to meal plan participation, will likely become eligible as soon as their meal plan ends.

13 The UC and CCC eligibility estimates we present here are different from the estimates presented in Rothstein et al., 2024 because the samples are different. This report focuses on students who graduated from a California public high school in 2015–2021 and went straight on to a UC or CCC. The prior report includes all UC and CCC students (including out-of-state, international, adult/returning/transfer students) and focuses on eligibility in Fall 2019.

14 We explored excluding first-year UC students planning to live on campus, but concluded that this did not align closely enough with the criterion, and that many such students did in fact participate in Cal Fresh (and therefore were presumptively eligible).

7. Conclusion

There is a significant decrease in CalFresh participation after high school graduation. Among recent California high school graduates whose families participated in CalFresh their senior year of high school, fewer than half still participate two years later. While some of these students may no longer need CalFresh, our report demonstrates that many continue to be eligible but do not participate, while others lose eligibility.

For students who go on to college, continued eligibility depends upon having a required college student exemption. More than a third of college students who received CalFresh in high school do not have an exemption and therefore can't continue participating. The federal "student rule," which put these extra requirements in place for CalFresh, was created to prevent college students who temporarily appear low-income from accessing public benefits while also receiving financial support from their parents. However, the calculations in this report focus on students who are eligible for CalFresh in high school based on their family's income. It is unlikely for most of these students that they will receive significant financial support from home. This suggests that the college exemption rules could be adjusted to include more students who lack the financial resources to ensure food security in college. For students who are still eligible, but stop participating, there is an opportunity for more focused outreach and assistance to keep them connected to CalFresh.

UC students are more likely to remain eligible than students who attend a California Community College. This is because UC students are more likely to apply for CalFresh by themselves, and not with their families, so only the student's income is considered for eligibility purposes. In addition, some exemptions to the federal student rule are only available to four-year college students.¹⁵ Given the particularly high rates of food insecurity among students enrolled in CCCs, and the role CCCs play in creating economic mobility for Californians, this phenomenon warrants further research and policy solutions.

Students who made the transition to college during the pandemic were more likely to continue participating. During this period there was less administrative burden, more exemptions to the student rule (which made more low-income students eligible), and higher monthly payments. Federal and state policymakers should consider what lessons can be drawn from the pandemic experience to reduce administrative burdens and ease eligibility for low-income students.

Students who are less likely to remain enrolled, such as CCC students who are Hispanic or Filipino, may benefit from focused assistance during this transition period. Alongside our partners, CPL is working to develop and test outreach strategies to connect more eligible students to CalFresh. The findings from this report will inform those efforts, which will provide new insights on how to close the take-up gap.

¹⁵ The TANF-funded Cal Grant A or B is an exemption to the student rule and is only available to students attending four-year institutions.

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The findings reported herein were performed with the permission of the California Department of Social Services. The opinions and conclusions expressed herein are solely those of the authors and should not be considered as representing the policy of the collaborating department, agency, or any department or agency of the California government.

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Appendices

We present in these appendices several additional analyses that provide context for our investigation and results. [Appendix A](#) explains the privacy-preserving linkage methodology. [Appendix B](#) describes the data used to estimate eligibility for CalFresh in high school. [Appendix C](#) displays the share of students participating in CalFresh during and after high school, separated by graduating class. [Appendix D](#) summarizes our logistic regression results. [Appendix E](#) displays the marginal effects of logistic regressions run separately by college system. [Appendix F](#) reports the share of students participating in CalFresh as high school seniors by student group.

Appendix A: Linkage methodology

Our project was designed to ensure maximal protection of the privacy of student data. To enable the analysis presented here, we developed an innovative hashed merge linkage methodology to link data from each agency without the need for them to transmit Personally Identifiable Information (PII). Under this procedure, the agencies do not share PII such as names and dates of birth. Rather, each agency hashes (encrypts) the PII that it holds, and transfers to CPL data that have the hashed IDs in place of the PII. Agencies use a hashing algorithm (SHA-256, specified in the Federal Information Processing Standards: FIPS 180-4, Secure Hash Standard) designed so that identical strings will always be assigned the same hashed string value, so that matches on hashed IDs are equivalent to matches on the underlying PII. Partner agencies agree on a key (secret passphrase) amongst themselves, not to be shared with researchers under any circumstances. This means that CPL does not have any way to re-identify the data, and thus the data CPL analyzes cannot be linked back to the students to whom it pertains.

To our knowledge, this procedure has been used rarely in the social sciences. We successfully implemented it in another large data linkage that involved CDSS and the California Franchise Tax Board (Linos et al., 2020) and have several others underway. For this project, we have conducted extensive data validation exercises to ensure that matches are accurate. Fu et al. (2022) provide further details and guidance about how to implement the approach in other settings.

The variables that are hashed were chosen to make it possible to identify both exact matches between datasets and flexible probabilistic matches that allow for discrepancies in information between datasets (e.g., an individual named “Jon” in one dataset and “Jonathan” in the other). To facilitate this, the agencies hashed not just the full identifier strings (names, birthdates, etc.) but also substrings

(e.g., the first three letters), phonetic equivalents, and likely erroneous strings (e.g., transpositions of digits in SSNs). This allows us to identify cases where, for example, the last names match exactly, the first names are spelled differently in the two data systems but are phonetically identical, and the SSNs are within one digit of each other, even though we will never have access to any of the underlying information. We provide a complete list of the hashed variables and their corresponding substrings below.

- First name and last name
 - First letter
 - First two letters
 - First four letters
 - Soundex (phonetic representation)
- Date of Birth
 - Day
 - Month
 - Year

We considered both perfect matches (i.e., an exact match on the full hashed string) and “fuzzy” matches (i.e., a match on one or more of the hashed sub-variables). “Fuzzy” match criteria were constructed so that any two strings that form a perfect match will also form a “fuzzy” match. Matches are assigned a score to indicate the strength of the match, with perfect matches being assigned the highest score.

For first names, we treated a match on the first four letters of the name the same as a “perfect” match. The full first name was not considered reliable, as some agencies reported the first and middle name together in a single field. Two strings were considered a “fuzzy” match if they shared the same soundex value or first two letters. For last names, the first four letters were also considered a “fuzzy” match, since the full string was used to identify perfect matches. A match on two of these subfields was assigned a higher score. Only perfect matches were considered for dates of birth.

Prior to linking across datasets, each dataset was first linked to itself. The California Community Colleges (CCC), Student Aid Commission (CSAC), University of California (UC), and Social Services (CDSS) datasets were also linked to each other prior to matching with the California Department of Education (CDE) data. A common identifier from this prior linkage was then used to identify individuals across these datasets. For more detail regarding the

methodology used to link these four datasets, please see Rothstein et al., 2024. The criteria used to match the CDE data to itself are as follows.

- A perfect match on the date of birth, the last name, and the first four letters of the first name
- A perfect match on the school identifier and date of birth, a perfect match on either the last name or the first four letters of the first name, and a “fuzzy” match on the remaining field

Two records were considered a match if they met one of these criteria or they shared the same CDE-provided identifier. An intermediate identifier was then created for the CDE data based on these results. The number of within-dataset matches identified at this stage are displayed below.

TABLE A1. Number of unique IDs in California Department of Education Data, 2010–2022

DATASET	# OF UNIQUE IDS PRIOR TO LINKING	# OF UNIQUE IDS WITH NON- MATCHING PII ¹⁶	# OF UNIQUE IDS AFTER LINKING
CDE	13,452,106	669	13,326,883

We then linked the CSAC, UC, CCC, and CDSS data to the CDE data. For all datasets except CDSS, the high school of attendance was used in addition to the hashed PII strings because SSNs were not available as a unique identifier within the CDE data. County was used for CDSS in lieu of the high school.

We employed Levenshtein distance (Levenshtein, 1966) to evaluate the high school of attendance, since the clear text high school name was available.¹⁷ We considered two school names to be a “fuzzy” match if their Levenshtein distance was less than five, or if one school name was a substring of the other. High school names were cleaned and stripped of non-alphanumeric characters prior to calculating the Levenshtein distance. The high school was not reported for transfer students in the UC data, special admit students (ie, dual-enrolled high school students) in the CCC data, and students older than 24 years old in the CCC data. CSAC also did not report the high school prior to 2012.¹⁸ These students were linked to the CDE data using only the available hashed PII strings.

¹⁶ “PII” here refers to the first four letters of the first name, the last name, and the date of birth.

¹⁷ The CDE and CCC datasets reported school identifiers, rather than school name. These identifiers were matched to the CDE directory to obtain the school name.

¹⁸ The state of residence was used as a proxy to identify students who attended high school in California for these years.

To reduce the possibility of false positives, we did not link graduate students, students who did not go to high school in California, and students who transferred to a California college from a foreign institution. All students from the CDE data were linked, however the school of attendance was considered only for high school students. All records from the CDSS data were included. The criteria used for matching are described below. For records that did not have a high school name reported, only the first set of criteria was considered.

- A perfect match on last name, the first four letters of the first name, and the date of birth
- A perfect match on the date of birth, a “fuzzy” match on the high school name, a perfect match on either the last name or the first four letters of the first name, and a “fuzzy” match on the remaining field

After identifying the initial set of matches using these criteria, a series of tie-breakers were implemented to select the preferred match when a CDE ID matched to multiple IDs from the other datasets. For multiple matches within the CSAC, CCC, and UC datasets, we selected the match or matches with the lowest Levenshtein distance between the school names. We also gave preference to matches that were identified using the second set of criteria in the above list. Within the CDSS data, we prioritized matches where the school county and county administering social services were the same. The below table displays the number of multiple matches before and after implementing these tie-breakers.

TABLE A2. **Multiple matches between CDE and the UC, CCC, and CSAC datasets**

NUMBER OF MATCHES (CSAC, CCC, UC, CDSS)	NUMBER OF UNIQUE IDS (CDE) AFTER INITIAL MATCH	NUMBER OF UNIQUE IDS (CDE) AFTER TIE-BREAK
1	7,905,660	8,105,884
2	658,111	527,393
3 or more	189,358	119,852
Total number of IDs	8,753,129	8,633,277

A common identifier was then assigned across the five datasets. To create this new identifier, we applied our linkage algorithm transitively. That is, if only one of two matches linked to a third observation, all three were considered to be a match.

To validate the accuracy of our matches, we estimated the proportion of California public high school graduates who attended the UC or CCC within one year of graduation using our linkage. We then compared our estimates to Ugo (2023). The results of this analysis are displayed below.

TABLE A3. **Percentage of California public high school graduates from class of 2020 attending UC and CCC institutions, CPL-estimated versus publicly available source**

	N	OUR ESTIMATES (%)	<u>UGO (2023)</u> (%)
Overall	449,891		
Attend UC	33,966	7.5	8
Attend CCC	176,225	39	32

Appendix B: Description of data used to determine CalFresh eligibility in high school

Our measures of eligibility are based on the combination of information obtained from enrollment records of the CDE and the two higher education systems, and information from FAFSAs, obtained from CSAC. Each of these datasets covers the full population of individuals in California that were recorded by the respective agencies in academic years 2014–15 through 2020–2021. [Table B.1](#) illustrates how data elements map to CalFresh eligibility criteria for high school students (see Rothstein et al., 2024 for information on how we determined CalFresh eligibility for college students). For eligibility criteria that are measured using FAFSA data (provided by CSAC), we pull from different FAFSA years depending on the data element. For example, some questions on the FAFSA reflect students' situations at the time of the application, others pertain to their situations during the academic year for which aid applies, while other questions on the FAFSA reflect information from the past. For this reason, we look at FAFSA submissions across several academic years to estimate CalFresh eligibility in a given academic year. For example, to estimate income eligibility for CalFresh in AY 2017–18, the FAFSA for AY 2019–20 would have relevant income information (because the AY 2019–20 FAFSA asks for income from the 2017 tax returns). The FAFSA submitted for AY 2017–18 would have the relevant household size for the AY 2017–18 because household size on the FAFSA reflects the year in which aid applies. Lastly, the FAFSA submitted for AY 2018–19 would have relevant information on citizenship status in AY 2017–18 because students typically complete FAFSAs for the upcoming year during the prior year, and the FAFSA asks about citizenship at the time of application. We use this approach of looking at FAFSA submissions across several academic years for each of the measures on the FAFSA (e.g., assets, housing situation, etc.) used to estimate CalFresh eligibility. If the ideal FAFSA is unavailable, we look to a FAFSA submitted in an earlier or later academic year.

TABLE B.1 **Details about data used to determined CalFresh eligibility (high school)**

CONCEPT	SOURCE	MEASURE NOTES AND LIMITATIONS
Citizenship	CDE, CCCCO, and UCOP	We include both citizens and eligible non-citizens (e.g., legal permanent residents)
Size of potential CalFresh case	FAFSA (CSAC) Number of people in parents' household	Limitation: FAFSA may not be available for the appropriate year — we use information from other years if needed.
Income eligibility	FAFSA (CSAC) Parent adjusted gross income Parent net income Parent assets Parent age	We use California's expanded income eligibility ceiling for all students. We assume that all students qualify for Modified Categorical Eligibility. This raises the gross income threshold to 200% of the poverty line (from 130%) and eliminates the net income test for all but households with an elderly member (60+). We apply the net income and resources test for students whose parents are considered elderly. We do not include student income, as income for individuals younger than 19 is not counted toward CalFresh eligibility determinations. Limitations: FAFSA may not be available for the appropriate year — we use information from other years if needed. AGI does not align exactly with CalFresh income concept.
CalWORKs, General Assistance, SSI	CDSS	A household is not subject to any income test if they already qualify for CalWORKs, General Assistance, or SSI. We observe CalWORKs participation in CDSS data, but do not observe General Assistance or SSI.

Appendix C: CalFresh Participation in High School and Post-graduation by Graduating Class

TABLE C1. Share of Students Participating in CalFresh, by Year relative to graduation and Graduating Class

	SOPHOMORE (%)	JUNIOR (%)	SENIOR (%)	FIRST YEAR POST-GRADUATION (%)	SECOND YEAR POST-GRADUATION (%)
Class of 2015 (N=90,952)	78.1	86.8	100	82.1	47.3
Class of 2016 (N=91,613)	79.2	87.4	100	78.4	45
Class of 2017 (N=87,457)	81	89.1	100	77.5	44.3
Class of 2018 (N=83,158)	82.8	88.6	100	77.1	44.5
Class of 2019 (N=83,623)	82.1	88.9	100	76.4	50.1
Class of 2020 (N=81,962)	77.4	81.8	100	82.0	49.3
Class of 2021 (N=82,564)	73.2	85.8	100	75.1	51.9

Sample: California high school graduates (Classes of 2015–2021)

Appendix D: Logistic regression results

TABLE D1. **Logistic regression results**

OUTCOME = ENROLLED IN CALFRESH WITHIN TWO YEARS POST-GRADUATION	MARGINAL EFFECTS
High School & Permanent Characteristics	
Race/ethnicity (ref race = White)	
Two or more	0.035** (0.007)
Hispanic	-0.008** (0.003)
American Indian/Alaska Native	0.019 (0.014)
Black/African American	0.103** (0.004)
Filipino	-0.052** (0.010)
Asian	-0.006 (0.004)
Native Hawaiian/Pacific Islander	-0.012 (0.015)
Missing	0.023 (0.015)

continued

OUTCOME = ENROLLED IN CALFRESH
WITHIN TWO YEARS POST-GRADUATION

MARGINAL EFFECTS

Other demographics/program participation

English language learner	0.114** (0.024)
Gender (Male)	-0.001** (0.000)
Special Education	0.046** (0.003)
Migrant	0.004 (0.007)
In foster care	0.085** (0.017)
Homeless	0.008* (0.004)
Household income (log)	-0.038** (0.007)
Length of CalFresh participation in HS	0.126** (0.001)
Community Eligibility Provision HS	0.000 (0.002)
Filed a FAFSA	-0.012** (0.004)

High School Graduation Year (ref category = 2015)

2016	-0.013** (0.003)
2017	-0.030** (0.003)
2018	-0.021** (0.003)
2019	-0.024** (0.004)
2020	0.033** (0.004)
2021	0.073** (0.004)

continued

OUTCOME = ENROLLED IN CALFRESH
WITHIN TWO YEARS POST-GRADUATION

MARGINAL EFFECTS

Highest Parent/Guardian Education Level (ref category = no high school)

Graduate degree or higher	-0.004 (0.006)
College graduate	-0.013** (0.004)
Some college or associate's degree	-0.010** (0.003)
High school graduate	-0.003 (0.003)
Decline to state	0.010* (0.003)
Unknown	-0.029** (0.003)

College Characteristics

College system (UC)	0.055** (0.005)
Different county in HS and college	-0.003 (0.003)

College Housing Plans (ref category = living at home)

Living on campus	0.005 (0.004)
Living off campus	0.006* (0.002)
Missing housing plan	-0.010* (0.005)

*p<0.05, **p<0.01

Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh senior year of high school and attended a CCC or UC within one academic year.

Note: We rely on the racial and ethnic subgroups that are reported in the CDE administrative data, which are largely provided by parents/guardians.

Appendix E: Logistic Regression Results Stratified by College System (UC and CCC)

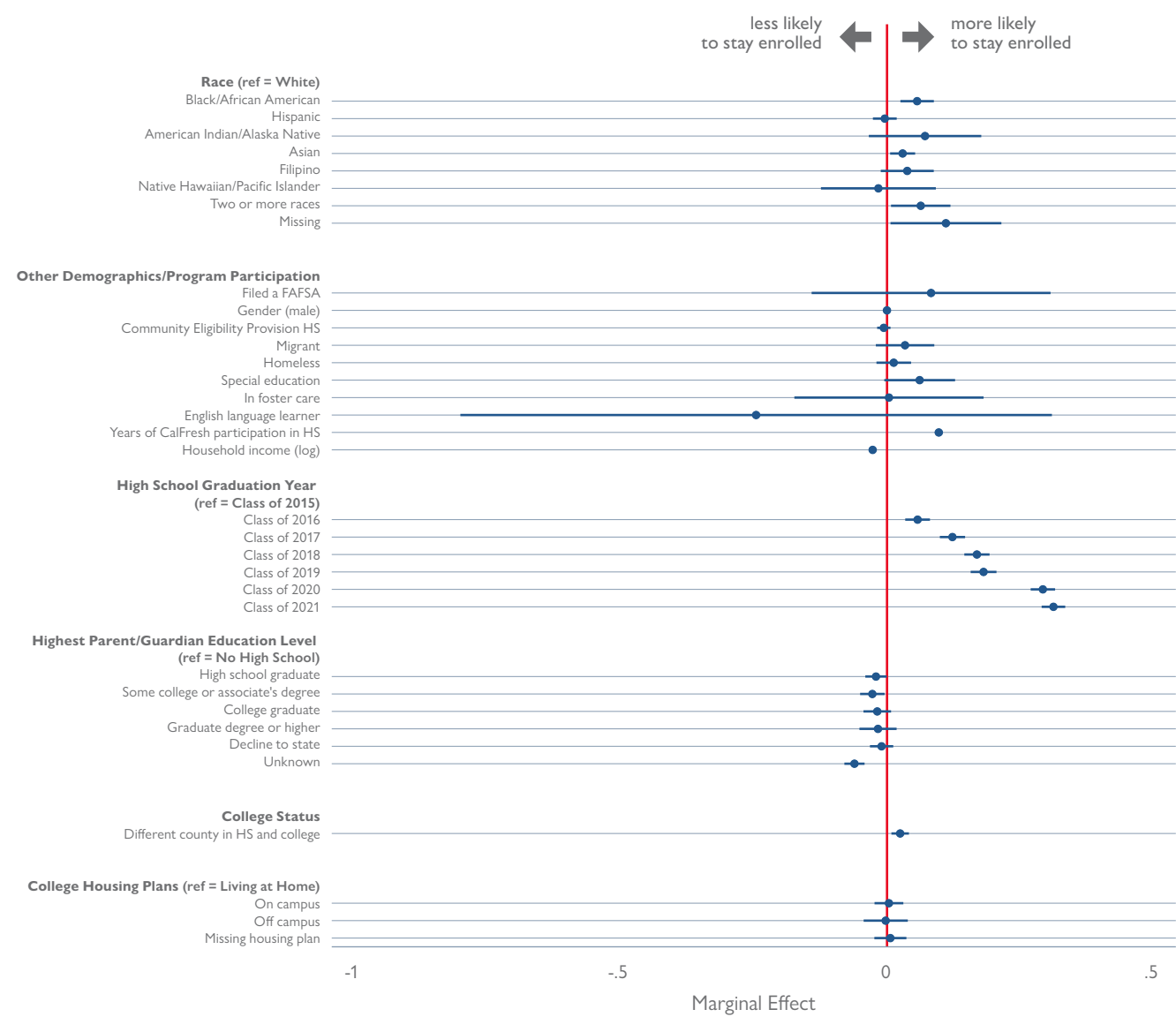
To understand whether different factors are differentially predictive of CalFresh continuity for CCC students and UC students, we stratified the logistic regression by college system. [Figure E.1](#) displays the marginal effects of the coefficients when restricted to UC students, and [Figure E.2](#) does the same for CCC students.

In general, the estimates for the CCC population and the overall estimates are similar, as these students make up a large share of the overall population.

For UC students, fewer factors are statistically significantly associated with CalFresh continuity. There is not a negative relationship between continuity and any of the race/ethnicity categories in the UC system. In addition, the indicators of disadvantage such as special education, English Language Learner, homelessness, and foster youth status are not positively associated with continuity for UC students. Moving to a different county between high school and college is actually positively associated with CalFresh continuity, which we do not observe in the overall results nor the CCC results. The small positive association between living off campus in the overall model is no longer significant when restricted to UC students.

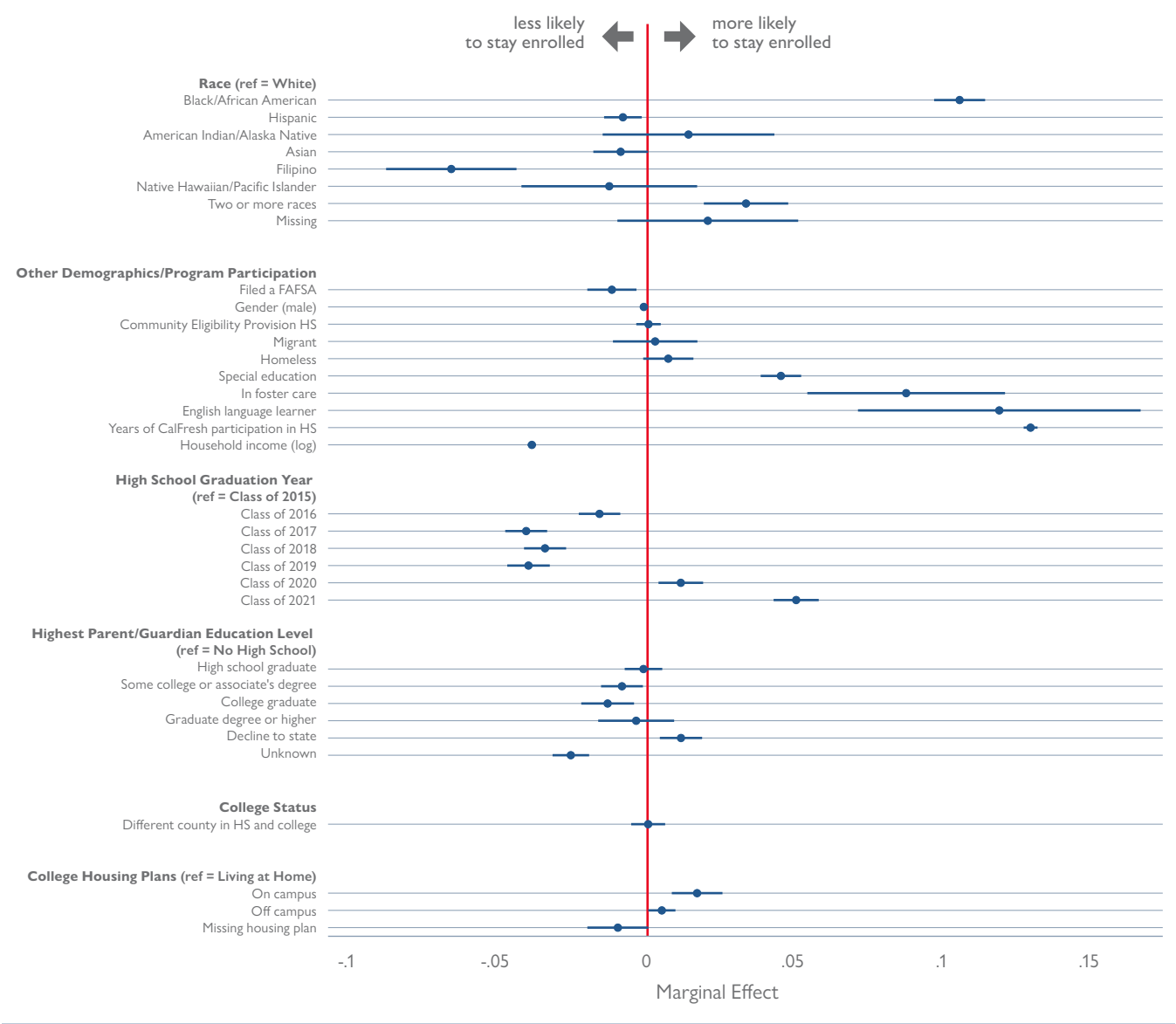
continued

FIGURE E.1. Association between student characteristics and CalFresh continuity, logit analysis restricted to UC students



Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh senior year and attended a UC within one academic year.

FIGURE E.2. Association between student characteristics and CalFresh continuity, logit analysis restricted to CCC students



Sample: California high school graduates (Classes of 2015–2021) who participated in CalFresh senior year and attended a CCC within one academic year.

Appendix F: CalFresh Participation Senior Year by Subgroup

Overall, 19% of California high schoolers in the graduating classes of 2015–2021 accessed CalFresh their senior year. Participation rates are higher among students who are Black/African American (35%), American Indian and Alaska Native (26%), or Hispanic (24%). The same is true of students who are economically disadvantaged (32%), those whose parent or guardian’s highest education is high school (27%) or less (33%), students in foster care (27%), and those who are experiencing homelessness (40%). It appears that senior year participation has declined slightly over time, from 20.5% in the Class of 2015 to 18.4% in the Class of 2021.

TABLE F.1. Share of students participating in CalFresh senior year of high school, by subgroup

	PARTICIPATING IN CALFRESH SENIOR YEAR OF HIGH SCHOOL (%)
Race/ethnicity	
Filipino (N=70,237)	7.2
Native Hawaiian/Pacific Islander (N=14,010)	21.6
White (N=651,482)	10.7
Asian (N=277,136)	12.1
Hispanic (N=1,429,247)	24.1
Two or more (N=87,420)	14.5
American Indian/Alaska Native (N=14,820)	25.6
Black/African American (N=159,540)	35.4
Socioeconomic Disadvantage (HS)	
Not economically disadvantaged (N=1,339,033)	1.7
Economically disadvantaged (N=1,792,384)	32.3
Community Eligibility Program (HS) (N=1,349,489)	24.8
Highest Education Level of Parent or Guardian	
Graduate degree or higher (N=284,893)	5.5
College graduate (N=414,760)	9.4
Some college or associate’s degree (N=449,187)	18.8
High school graduates (N=454,467)	26.5
Not a high school graduate (N=389,210)	32.8

continued

Other characteristics

Male (N=1,576,746)	18.3
Female (N=1,552,679)	20.1
Migrant (N=39,162)	29.9
Homeless (N=106,604)	40.1
English language learners (N=7,554)	16.7
Special education (N=312,325)	22.2
In foster care (N=19,808)	26.5

High School Graduation Year

2015 (N=442,876)	20.5
2016 (N=444,893)	20.6
2017 (N=444,160)	19.7
2018 (N=447,948)	18.6
2019 (N=453,686)	18.4
2020 (N=449,891)	18.2
2021 (N=447,963)	18.4

Sample: California high school graduates (Classes of 2015–2021)