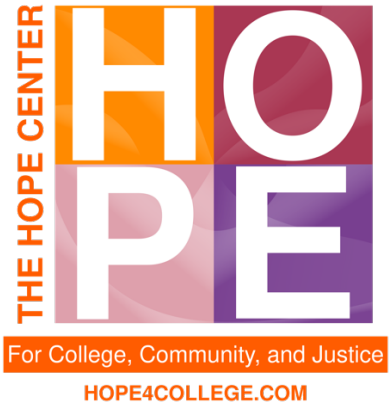

Does Rent-Free Community Housing Make a Difference in Higher Education Outcomes?

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June 2022

Executive Summary

This study provides one of the first causal estimates of the impact of housing on academic outcomes.[1] While college students are too often dismissed as a privileged and healthy part of the population, researchers increasingly observe housing insecurity among college students.[2] This problem worsened during the pandemic, underscoring the link between housing, employment, mental health, and wellness. Even in states like Florida where tuition costs are stable, basic needs expenditures and the stress associated with basic needs insecurity can negatively impact college students' success academically as well as their well-being during and after college.

Housing is of particular importance as a critical basic need for today's undergraduate students. The study takes place before and during the ongoing pandemic, thus providing a unique opportunity to understand the short-term impacts of housing on belongingness, mental health, and academic outcomes for the five cohorts studied (Fall 2018 through Spring 2021 housing scholarship applicants). Additionally, we can examine longer-term impacts of housing net the impact of the pandemic on a variety of student outcomes resulting from a mixed-methods design.

Because it is difficult and often impossible to fully measure the many pre-college and college-year factors which may contribute to student outcomes, Randomized Control Trial(RCT) is a preferred "gold standard" for evaluation studies, notably for college completion.[3] Triangulated data include admissions application information, a base-year survey at the time of application (response rate: 81%), and a follow-up survey and stratified random sample of interview respondents.

We conduct this analysis with these questions in mind:

1) Does this scholarship influence student well-being as measured by belongingness, mental health, and/or financial wellness?
2) Does the provision of a housing scholarship have an impact on student retention or completion?

The evaluation aims to assess the "education for life" housing intervention model: rent-free housing and community living for students who receive the scholarship, carefully isolating the effect of housing in comparison to eligible applicants who do not move into this scholarship housing community. Baseline data indicate this population experienced challenges with mental health and financial wellness (including basic needs insecurity) at the time of application.

Findings from the study suggest that these rent-free community housing supports provide greater financial well-being, mental health, and postsecondary educational impacts. More specifically:

- Reduced need for paid employment,
- Reduced perceived stress, and
- Enhanced retention and graduation in terms following assignment.

Overall, the housing program appears to serve a population that is academically strong at the start but with considerable financial and health needs. Considerations for implementation and scale are discussed for community programs.

Further investigation may allow greater insights into the longer-term impacts of the scholarship program, as most students were still enrolled and on target but had not yet finished college. Our mixed-methods data suggest potentially distinct impacts for STEM students as well as for students whose housing was interrupted during the pandemic.

Introduction

Housing is a core component of well-being. This is true for everyone, including college students who are too often dismissed as a privileged and healthy segment of the population but are increasingly found to be housing insecure.[4] The pandemic has underscored the link between housing, employment, mental health, and wellness.[5] In the wake of COVID-related job losses, housing insecurity and homelessness rapidly increased for college students and their families.[6] Likewise, it is anticipated that mental health deteriorates with the loss of housing and employment in addition to the direct consequences of COVID infection.[7] What is often lost in these conversations is the fact that recent estimates show over 40% of students attending college are housing insecure or homeless.[8] Given these realities, housing has the potential to impact academic outcomes and economic stability for our nation.

Academic performance is also closely tied to housing. In early childhood, homelessness has been associated with lower academic readiness.[9] The relationship between homelessness and academic performance continues throughout the K-12 system. For example, academic outcomes and behavior were negatively associated with being homeless in a study of children in a shelter system.[10] While there is less scholarship on the impact of homelessness in higher education, Maslow's hierarchy of needs suggests that without housing security, homelessness will impact outcomes for students from preschool through graduate school.[11] A recent study of a southeastern university finds that psychological well-being and food insecurity are associated with GPA.[12]

Without housing, many factors of an academic trajectory in higher education may be impacted, such as sense of belonging, anxiety, and stress. Sense of belonging and community on campus have been shown to have strong connections to self-efficacy and improved mental health, including reduced anxiety, depression, and stress.[13] These outcomes are also connected to improved well-being in terms of economic and academic outcomes.[14] Receiving various types of support from one's institution is tied to students' sense of belonging, mental health, and fiscal wellness. These factors are interrelated and influenced by fiscal and other supports. Importantly, these connections appear to be particularly important for structurally minoritized students—including women, LGBTQ+ students, and Black, Indigenous, and other students of color.[15] Support in the form of housing appears to positively impact students' connection to their institution and sense of belonging as shown in a study of housing supports in Tacoma, Washington.[16]

While evidence of the link between housing and positive outcomes for students is strong, it is not causal. This study provides one of the first causal estimates of the impact of housing on academic outcomes.[17] The study takes place before and during the ongoing pandemic, thus providing a unique opportunity to understand the short-term

impacts of housing on belongingness, mental health, and academic outcomes. Additionally, we examine the longer-term impacts of housing net the impact of the pandemic on a variety of student outcomes resulting from a mixed-methods design.

With this design, we investigate the following questions:

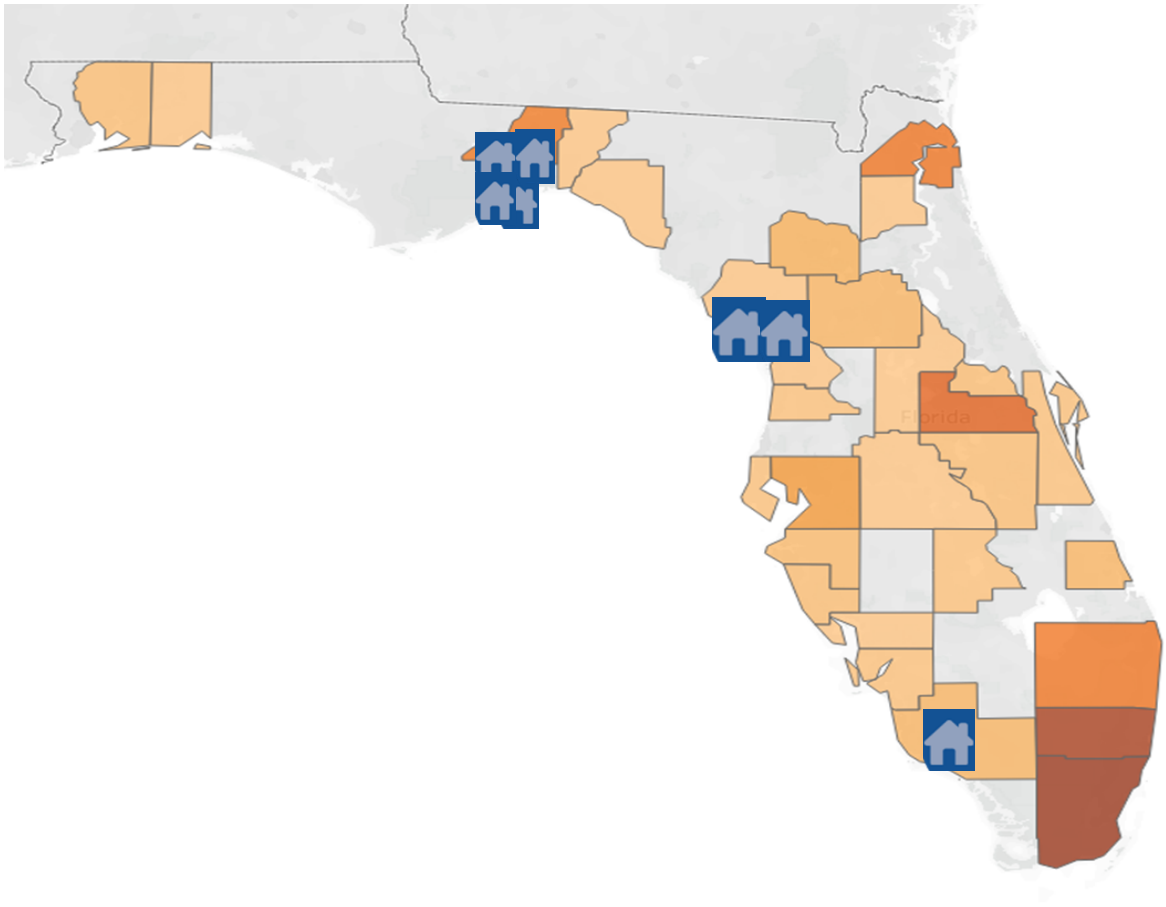
1) Does this scholarship influence student well-being as measured by belongingness, mental health, and/or financial wellness?
2) Does the provision of a housing scholarship have an impact on student retention or completion?

Setting and Implementation

Intervention

This study focuses on the "education for life" housing intervention model which is constituted by rent-free housing and community living. This program is provided to students across the state of Florida by the Southern Scholarship Foundation (SSF) in single-sex housing.[18] This program has been provided for 69 years and has strong community support. To date, each location marked (see Figure 1) has at least one house, for men and women. The sizes of these houses and their available housing slots vary based on the institution with which they are connected.[19]

Figure 1: Distribution of program across Florida



Note: House icons designate locations of houses, by campus. Color saturation represents the percentage share of applicants from a given county. Counties of residence with the highest share of applicants are in dark orange (e.g., Broward and Miami-Dade counties in the Southeast), whereas those with fewer are in comparatively lighter colors. Counties without applicants in the randomized analytic sample are in light pink.

As can be seen in the map above, the program draws unevenly from across Florida and likely does in some ways that work against equity. Notably, when compared

to U.S. Census Bureau 2020 and American Community Survey 2021 data on race/ethnicity and family income, Southern Scholarship Foundation houses are in more economically advantaged counties and regions. Fifty percent or higher shares of these counties' population identify as White, non-Hispanic. There are in some cases more acute needs at the census block and zip code level—notably in Tallahassee where the four out of seven partner campuses are located; these unmet needs intensified during the pandemic.[20] Yet housing insecure applicants' counties of residence tend to be more structurally disadvantaged than those where the program housing is located—primarily in the northern panhandle and north-central interior of the state. Meanwhile, most applicants attended high school in southeastern counties several hours away, for example, attending high school in Broward and Miami-Dade counties. Notably, students living in these counties also encountered more acute effects from the pandemic than those in the northern stretches of the state.[21] Widening students' access to an evidence-based program across Florida could more fully address their needs.

Figure 2 shows that at baseline, 22% of applicants self-report having experienced one or more indicators of homelessness (e.g., sleeping at a shelter or a public park) in the past 12 months.[22] Importantly, as food and housing insecurity often happen together, the intervention program's attention to rent-free college housing also attends to community meal preparation and eating. Table 1 displays student food insecurity at baseline, whereby none of the applicants report high security, and most report either low or very low food security.

FIGURE 2
STUDENT EXPERIENCES WITH HOMELESSNESS AT TIME OF APPLICATION

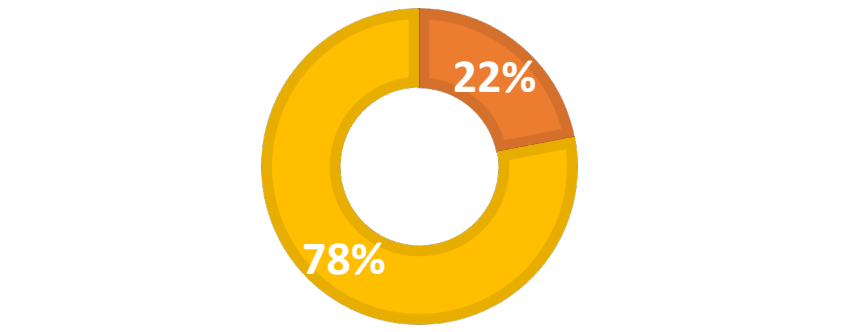


TABLE 1. Housing and Food Insecurity among Applicants to Rent-Free College Housing Program

	All Randomized	
	%	SE
Food insecure (marginal, low, or very low security)		
Very low food security	39.8	1.8
Low food security	42.6	1.8
Marginal food security	17.6	1.2
High food security	0.0	0.0
N (Survey responses)	1,120	

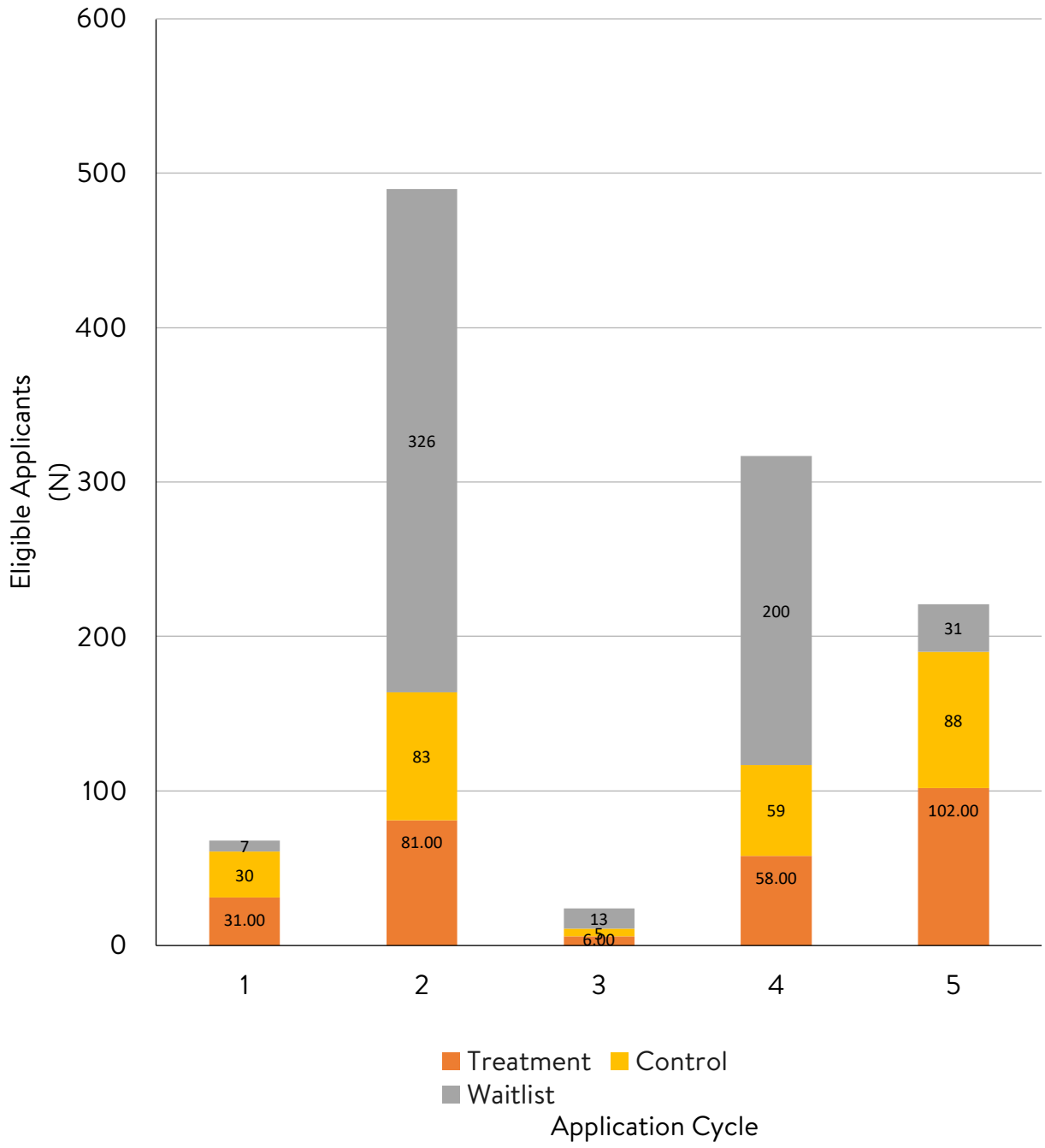
Source I Baseline survey of applicants

Notes I Data on housing insecurity and homelessness at Time of Application. Homeless within the last 12 months is derived from Hope Center Real College Survey measures. Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). N(valid, randomized cases)= 1,120 for all students (283 assigned treatment and 269 assigned control). T-tests assessing group-level differences between the control and treatment groups were statistically insignificant (p<.05) across all 10 imputations for housing and across 8/10 imputation data sets for food insecurity. Additional analyses on reapplicants found treatment students who reapplied were more disadvantaged than those who applied only once. Reapplications from the control group were excluded from consideration, and therefore not included in the analysis.

For the program, students are invited to apply through word-of-mouth, student advisors, social media and other advertising, high school counselors, and campus and community programs offering synergistic support. Applications are reviewed each semester for housing in the upcoming term. The program has limited slots and is often over-subscribed, providing the need for fair and equitable decision-making regarding the awarding of scholarships.[23] Southern Scholarship Foundation also runs a waitlist to ensure that if students chose not to use the housing scholarship, another student has the opportunity.[24]

In this evaluation, we randomized an eligible sample of 1,120 unique students into three groups of applicants across five cohorts, distributed among the three groups: treatment (n=283), control (n=269), and waitlist (n=577).[25] Five hundred fifty-two unique students were randomized to treatment or control conditions. Cohort size varies by semester (fall applicants for spring move-ins are fewer) and year, as the number of spaces available constrains the number of students we could assign to treatment and control each cycle. Applicants complete informed consent to participate in the randomized evaluation study at the time of application. Figure 3 displays the number of applicants and their status in each cohort throughout the study (see Appendix 2b for details on the total number of waitlisted or control students ultimately treated).

FIGURE 3: Eligible Applicants by Application Cycle and Treatment Status

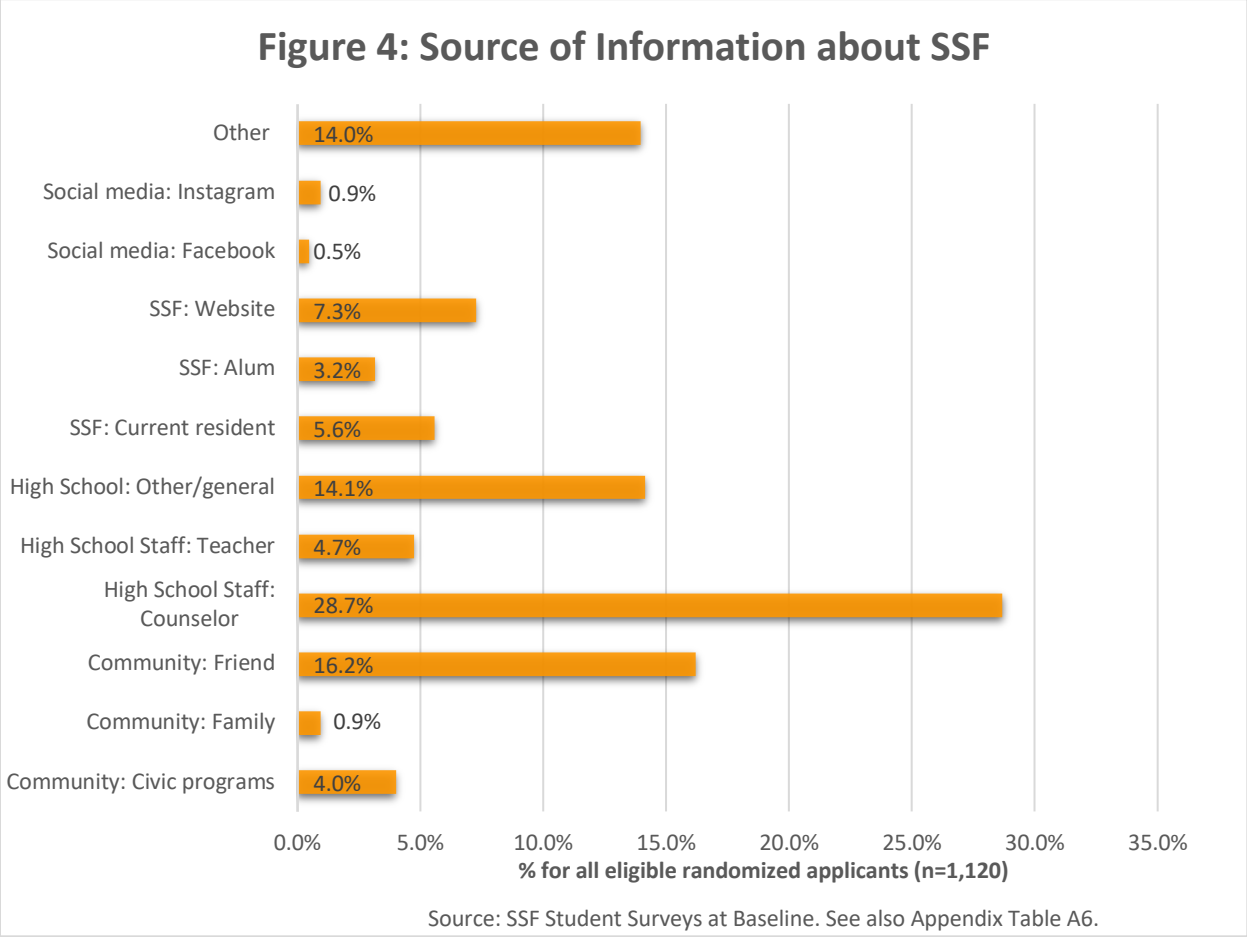


Source: SSF Application Data. See as a reference Appendix Table 2b: Assignment by Treatment Cohort.

However, across our data, we see the potential for more systemic recruitment. While typically oversubscribed for their available housing slots, students often learn about SSF through individual or programmatic contacts. This shows not only the importance that others played in educating the students about the scholarship, but also that SSF is a known entity that has a strong network and reputation. This pattern also indicates that students are either not aware of, searching for, or applying for scholarships on their own even when there is a clear financial need, as we observed in the students' qualitative and quantitative responses to the application, surveys, and interviews. Throughout the intervention, we worked with SSF to expand and refine recruitment efforts to ensure the maximum possible number of students knew of the program.

Applicants to the Program

In Figure 4, we show students' experiences with the application process. Notably, most students report learning about the program from a school staff member, especially their guidance counselor. At school, this might be their high school counselor (28.7%), teacher (4.7%), or another individual (14.1%). Some students also had community connectors to the SSF scholarship, including friends (16.2%), family (0.9%), and civic programs they participated in (4.0%), some of which had existing relationships and/or partnerships with SSF. Southern Scholarship Foundation alumni and current students were also engaged in the recruitment process, responsible for 3.2% and 5.6% of applicants' self-reported sources of information about SSF. A human connection seems to matter.



Recent efforts by SSF program staff to enhance the website and social media presence of the program as well as other outreach efforts in local news media and student blog posts notwithstanding, these outlets collectively represent less than 10% of students' self-reported information about the program. Interviews with applicants suggest that online searches for general terms like "Florida scholarships" were what attracted many of our interviewees to the program, a haphazard search process that may represent a sizeable share of the 14.0% of applicants who reported an "other" way they learned about SSF. Given the limited information our rent-free housing scholarship-eligible randomized applicants seemed to have about how to find and apply for scholarships and other forms of aid, it is perhaps striking that most students report either (1) no human guidance about SSF or financial aid when starting their search or (2) more commonly a typically single individual introducing them to financial aid information. These gatekeepers—counselors in particular—appear important to the continued implementation and recruitment for the program. Moreover, there seem to be opportunities for greater engagement from other school and community actors, including teachers, program staff, and institutional partners in student affairs and financial aid if the program desires to reach a larger group of students.

Table 2. Baseline Characteristics by Applicant Group

			All	Waitlist	Control	Treatment	Difference (C-T) in SD units
%	Race/ethnicity (%)	Female	75.5	78.1	69.7	75.8	0.18
		Asian, non-Hispanic	3.9	3.3	4.2	4.9	0.10
		Black, non-Hispanic	51.3	52.4	51.3	48.9	0.06
		Hispanic or Latina/o/x	28.1	24.8	31.4	31.8	0.01
		White	10.3	13.3	6.9	7.6	0.06
		Two or more race groups	4.5	4.7	4.2	4.2	0.01
		Other race	1.9	1.5	1.9	2.7	0.20
		LGBTQ+	14.7	14.3	14.6	15.6	0.04
		Self-reported Disability	5.7	6.2	5.1	5.3	0.04
		First-Generation College	74.4	74.7	76.7	71.1	0.17
		First-Year College Student	16.6	15.5	17.2	18.2	0.04
		STEM Major	41.5	37.8	44.8	45.8	0.02
		Less than or Equal to Zero EFC	56.7	55.8	59.4	55.8	0.09
		Applicant GPA (4.0 Scale)	3.6	3.6	3.6	3.6	0.00
$		Parent Income ($)	35,900	35,399	35,911	36,927	0.00
N			1,120	568	269	283	

Source | Program application data and baseline survey data.
Notes | Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). Survey responses are the source of LGBTQ+ (in combination with application-reported pronouns) and completion of any missing information on gender or race/ethnicity for study participants. Cumulative percentages may not add up to 100 due to rounding. Baseline equivalence ("Difference") was estimated using Hedges G or Cox's Index as appropriate, consistent with What Works Clearinghouse standards. Standard errors of the difference between treatment and control are evaluated using two-tailed t-tests for equal variances across two groups. We consider baseline equivalence of effect size < 0.10 to be statistically significant.

Limitations and Challenges Associated with COVID-19

The project encountered complications due to the pandemic beginning in spring 2020. With respect to the study, response rates for completed surveys declined, as documented in Appendix—Table A6. Concerning the program and randomization, many selected students also deferred their move-in for Fall 2020 to Spring 2021, further reducing the number of available spaces for new residents. The volume of applications declined for the Spring 2021 recruitment cycle because of students' uncertainties about the pandemic and university policies about in-person learning. Southern Scholarship Foundation also designated one room in each scholarship house for COVID recovery, reducing capacity to 90%. This also reduced the number of scholarships available. Finally, for Cohort 5 applicants, SSF program staff reported higher shares of

applications they considered need-eligible who fell above FAFSA-calculated estimates of family income and expected family contribution were more variable.[26] The evaluation team participated in eligibility screening discussions by SSF staff, documented these decisions, and successfully balanced these income measures in randomization baseline equivalence tests among this and all other cohorts.

Sample

This study begins in the spring 2018 application cycle and continues through five terms to ensure a sample large enough to identify meaningful impacts of the program on academic outcomes. In Table 2, we display their overall characteristics as well as variation between our control and treatment groups.

This is a highly and intersectionally diverse, primarily first-generation and female student population. Southern Scholarship Foundation students have high financial need (mostly under $5,000 Expected Family Contribution [EFC] on FAFSA) and come from diverse backgrounds across the state of Florida. As shown in Table 2 above, just over half of applicants self-identify as Black, non-Hispanic; 28.1% identify as Latina/o/x, 4.5% identify as Multiracial (not including Latina/o/x), and 1.9% identify as another race, including American Indian, South Asian, and Middle Eastern. Seventy-four-point four percent report being the first generation to attend college. Fourteen-point-seven percent self-identified as LGBTQ+. In addition, 5.7% of applicants self-reported having a disability (e.g., sensory, learning). Only 16.6% are applying to be first-year college students, signifying as we learned elsewhere that many students do not enter the scholarship program as first-time first year in college students, but rather learned about the program after coming to college with limited financial aid or a change in their academic or financial status.

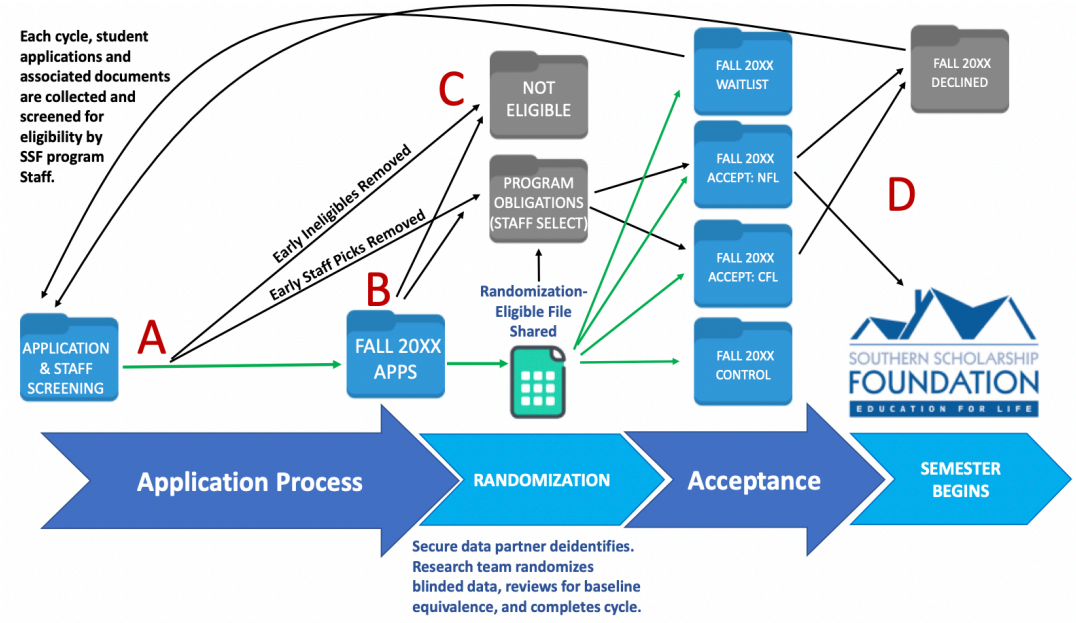
Given what we learned about how students hear about the program this is not surprising. While the students are in the historically traditional college age range and are applying for single-sex housing that does not allow families, partners, or children, some are transferring colleges or are applying for a second time to try to attain rent-free college housing. Despite some wider variation in parental income during the COVID-19 period, applicants still had on average $1,419 EFC, which would likely be lower if negative EFC estimates were captured in the application process.[27] Indeed, the modal EFC was zero across cohorts (56.7% for all randomized applicants) and treatment/control groups (55.8% and 59.4%, respectively). Appendix Table A7 further details participant characteristics, by treatment type. Next, we turn to our methodological approach to the study of rent-free housing scholarships for students with these demonstrated financial needs.

Methodology

Randomization

To accurately estimate how the rent-free housing intervention affects student outcomes, we conducted a randomized control trial (RCT) experiment. Given the limited number of spots available at each of the locations in each term, we conducted randomization across five cycles, blocking on gender within each location due to the need to assign students by gender to specific houses across the various locations.[28] Figure 5 captures the process from application to treatment.

FIGURE 5: Implementation of Randomization Process, from Program Application to Scholarship Decision



Analytic Approach

We employed multiple methodologies in the evaluation to understand both the overall impact of the program on academic outcomes but also the mechanisms through which these impacts work. The evaluation team drew a stratified random sample of interviewees in 2019 from the eligible Cohort 1 and 2 applicants who participated in the survey. This resulted in a total of 15 interviews (7 treatment, 8 control; see Appendix Table A5 for details on interviewee characteristics). We used a semi-structured questionnaire specific to the treatment or control group for these follow-up interviews, using an iterative multi-stage coding strategy. In addition, we followed up in the fall of 2020 with a balanced sample of Cohort 1 respondents (2 treatment, 2 control, balanced

by gender) to examine their longer-term outcomes, including those experienced during the pandemic.

To examine moderation and mediation on the academic impacts identified through administrative data, we conducted a baseline and up to three follow-up surveys (varying by entry cohort). Follow-up surveys were administered to students several months after assignment to treatment or control (see Appendix Table A3 for the timeline of survey administration; response rates by group are reported in Appendix Table A6). To assess the impacts of rent-free and community housing on students' well-being (RQ1—including financial health, mental health, and sense of belonging), we employed OLS or logistic regression, depending on the nature of the dependent variable.

Multiple imputation was used where baseline characteristics were missing, following What Works Clearinghouse best practices for estimation, resulting in 1,120 students randomized to treatment, control, or waitlist conditions throughout the study.[29]

To examine the impact of the housing scholarship on student achievement, we collected admissions application information, administrative data on placement from SSF, and academic follow-up data from the National Student Clearinghouse (NSC) repository.

For the analyses of the survey and NSC data on academic achievement, we use regression based on the following equation to identify the treatment impact.

$$(1) \qquad Y_i = \alpha + \beta * \text{Accepted}_i + X_i + \varepsilon_i$$

In this equation, y_i refers to the outcome for student *i*; Accepted_i indicates whether the students received an offer for housing or "treatment"; X_i is an indicator for unbalanced student-level covariates at baseline (i.e., gender, other race/ethnicity, and first-generation college status); and ε_i is a student-specific random error term.

The coefficient beta (β) in Equation (1) represents the causal effect of being accepted to the program. This is known as an intent-to-treat (ITT) estimate and represents the impact of being accepted only. It is possible and has been shown in other studies discussed earlier that the basic needs support may have an impact on well-being and academic outcomes. However, as we are also interested in the impact of this community-based, rent-free *housing*, we also estimate an adjusted average treatment-on-the-treated (ToT) effect as well, comparing those who were randomized to treatment and complied (accepted the treatment) to control compliers, who were not randomized to treatment and were not housed.

Results

We use administrative, survey, and interview data to examine additional measures of student success such as health, financial, and basic needs security. Previous research described earlier shows strong evidence that having one's basic needs met is a precursor to academic success. Thus, we examine the influence of the housing scholarship on these factors first. Before presenting the results of the RCT, we have qualitative data to set the context of what SSF applicants are struggling with.

Financial Security

SSF applicants operate under a great deal of pressure to gain a better economic footing. This is evidenced by their tendency to select majors that are vocational and career-focused. This is increasingly common among low-income and first-generation students. Forty-one percent of students selected STEM majors, not including additional students selecting Nursing (12%), Pharmacy (2%), or Pre-Medical (under 1%) majors. Careers are a central focus of their college studies. For some, that means financial sacrifices to accept unpaid internships. For others, it means sacrifices to pay lab fees and other additional costs associated with STEM programming. The interview data suggest that students are consciously thinking about and planning for careers and the post-college stability associated with them, even when their career plans may otherwise appear haphazard or not fully informed. For example, one woman admitted to the SSF program said:

"I know that I want to do an internship while I'm in school so that I can put my feet in the front door as soon as I graduate, so I can have a little job in front of me, so I don't have to be scurrying around looking for a job."

Students worry that even with the plans in place, internships may still not lead to jobs. A man in the SSF program who is studying engineering explained:

"I hope, right now, with these internships, hopefully, one at Lockheed and, right after college, hope to get a job somewhere with a decent salary pay, with something I enjoy doing I guess, not just tedious tasks over and over again. But, that is what I want to happen, but I feel like it might not even happen that way. It might just take a crazy turn. I feel like something never goes your way."

Many limited opportunities for scholarships or financial aid, especially if they are not U.S. citizens—a common issue in Florida. Students also need help coping with the timing of bills and financial aid.[30]

A majority of students interviewed captured financial aid from two or more

sources. Some students had access to work-study, housing assistance, and FSU's CARE program, while other students qualified for the Pell Grant but then became ineligible with no additional support. For example, a student in Cohort 1 (white, female, STEM) qualified for the Pell Grant but then lost eligibility and did not qualify for any other scholarships or loans. Another student (Hispanic/Latinx, male, STEM) qualified for the Pell Grant, two university-sponsored grants for academic costs, and both un/subsidized loans to cover rent. From the treatment group in Cohort 1, one student (Hispanic/Latinx, female, non-STEM) qualified for the CARE grant, work-study, and some university-sponsored scholarships to cover on-campus housing. Another student (Black/African American, male, STEM) relied solely on the SSF scholarship. Four students acquired student loan debt to balance costs if they did not have access to another sizeable award like the Florida Bright Futures Program, SSF, or a similar comprehensive scholarship.

We also probed the scholarship and financial aid search in the interviews to better understand how students became aware of SSF as a financial resource. They showed a largely haphazard nature to the financial aid search it seems, consistent with past research on college search models among low-income prospective college students, as being less guided and structured than those of their more advantaged peers.[31] Some students talked matter-of-factly about "Googling scholarships" or self-directed internet searches (see Table 3; 20.0% of interviewees), and 26.7% did not identify any specific supports for scholarship searches as compared to college or financial aid generally. Most students did not apply for scholarships other than SSF nor receive help on their college/FAFSA applications. Meanwhile, 40.0% discussed a program or significant others who connected them to SSF or another scholarship opportunity. For many, that connector was Florida State University's Center for Academic Retention and Enhancement (CARE) program, a comprehensive, high-touch intervention program that offers its own academic and financial benefits. It would be advantageous to have a similar series of connectors and synergistic support structures at other campuses, including in particular the community college sites. The interview reflects these patterns and application data described earlier, where on average 59.6% of applicants surveyed reported either a counselor, friend, SSF alum or current resident, or another personal referral to the program.

Table 3. Implementation: Scholarship Application Experiences for Interviewees		
From Qualitative, Individual Interviews		
Primary Source of Information in Scholarship Search	Online search engine	20.0%
	Campus site or instructions (following admission and/or other financial aid offer)	13.3%
	School program	20.0%
	School staff: teacher, counselor, etc.	13.3%
	School or program peers: Word of mouth	6.7%
	Other or None identified	26.7%
Primary College and Financial Aid Application Support	Applicant had help from school program or organization	46.7%
	Applicant had help from school or program peers	13.3%
	Applicant had help from a specific person(s): teacher, counselor, family member	40.0%

Notes: Data source is SSF Study interview data. Interviews were drawn from a stratified random sample of applicants randomized to treatment or control conditions on the scholarship (n=15), and were interviewed 6 months to a year after application.

Impact Analysis: Mental Health and Belongingness

Baseline

Drawing on findings from our baseline surveys collected following students' completion of housing scholarship applications, we observed high rates of anxiety and negative affect among SSF program applicants, likely connected to the financial stressors mentioned above. More than 60% of students in the Fall 2018 cycle indicated thoughts and behaviors associated with suicidality (this triggered additional support from the evaluation team). Table 4 shows most students had experienced adverse experiences in childhood before applying to the program, with just over 13% experiencing four or more (e.g., physical abuse, sexual abuse, rape, parental divorce). They report moderate levels of stress on average, consistently across gender and race groups. Most students surveyed experience anxiety, and about 60% report feeling down, depressed, or hopeless. Notably, about 1 in 10 students said that they feel this way nearly every day. When looking across cohorts as well as across race/ethnicity and gender, the incidence was lower on generalized anxiety and perceived stress.

Table 4. Mental Health Among Participants

Mean Percent (%)									
Generalized Anxiety Disorder Scale									
	All (n=1120)	Women (n=870)	Men (n=304)	Black (n=625)	White (n=164)	Asian (n=48)	Latinx (n=329)	Two or More (n=55)	Other (n=37)
Minimal Depression	47.8	43.47	59.59	50.82	44.90	27.78	47.09	40.00	47.83
Mild Depression	28.18	29.73	26.42	27.17	28.57	36.11	31.07	16.67	26.09
Moderate Depression	16.6	19.07	8.29	15.46	17.35	30.56	15.53	30.00	8.70
Severe Depression	7.42	7.73	5.7	6.56	9.18	5.56	6.31	13.33	17.39
Modified Perceived Stress Scale (Range 0-16)									
	All (n=1120)	Women (n=870)	Men (n=304)	Black (n=625)	White (n=164)	Asian (n=48)	Latinx (n=329)	Two or More (n=55)	Other (n=37)
Mean	8.45	8.37	8.66	8.54	8.32	8.21	8.52	8.40	8.95
Adverse Experiences in Childhood Scale (%)									
None	28.99	27.59	31.58	26.93	31.96	50.00	27.59	20.00	34.78
1-3 Adverse Experiences	57.72	58.45	57.36	60.88	47.29	41.67	60.10	46.66	52.17
4 or Higher Adverse Experiences	13.29	13.97	11.05	12.18	20.62	8.33	27.59	33.33	13.04

Source: SSF Baseline Survey, Cohorts 1-5.

Notes: Results above represent the factors students self-reported as contributing to their need for free college housing. Student applicants represent survey respondents in all cohorts who completed an SSF housing application and enrolled in the study (1,120).

Follow-up Data

Using the follow-up survey in Table 5a, we examine the impact of housing on students' sense of well-being and mental stress, with a focus on their relationship to their campus. This specific table shows an analysis narrowed strictly to students who complied with their assigned category—the best-case scenario. These were treatment-assigned students who took the scholarship and were placed in SSF housing the following term and control-assigned students who did not live in SSF housing. Appendix Table B-2 includes more detailed reporting on the Intent-to-Treat estimates (adjusted and unadjusted) for treatment and control students. We also show unadjusted and adjusted impacts for all treatment- and control-assigned students in Appendix Table B-

Table 5a. Adjusted Treatment-on-the-Treated (TOT) Effect of Being Issued Rent-Free Housing at SSF

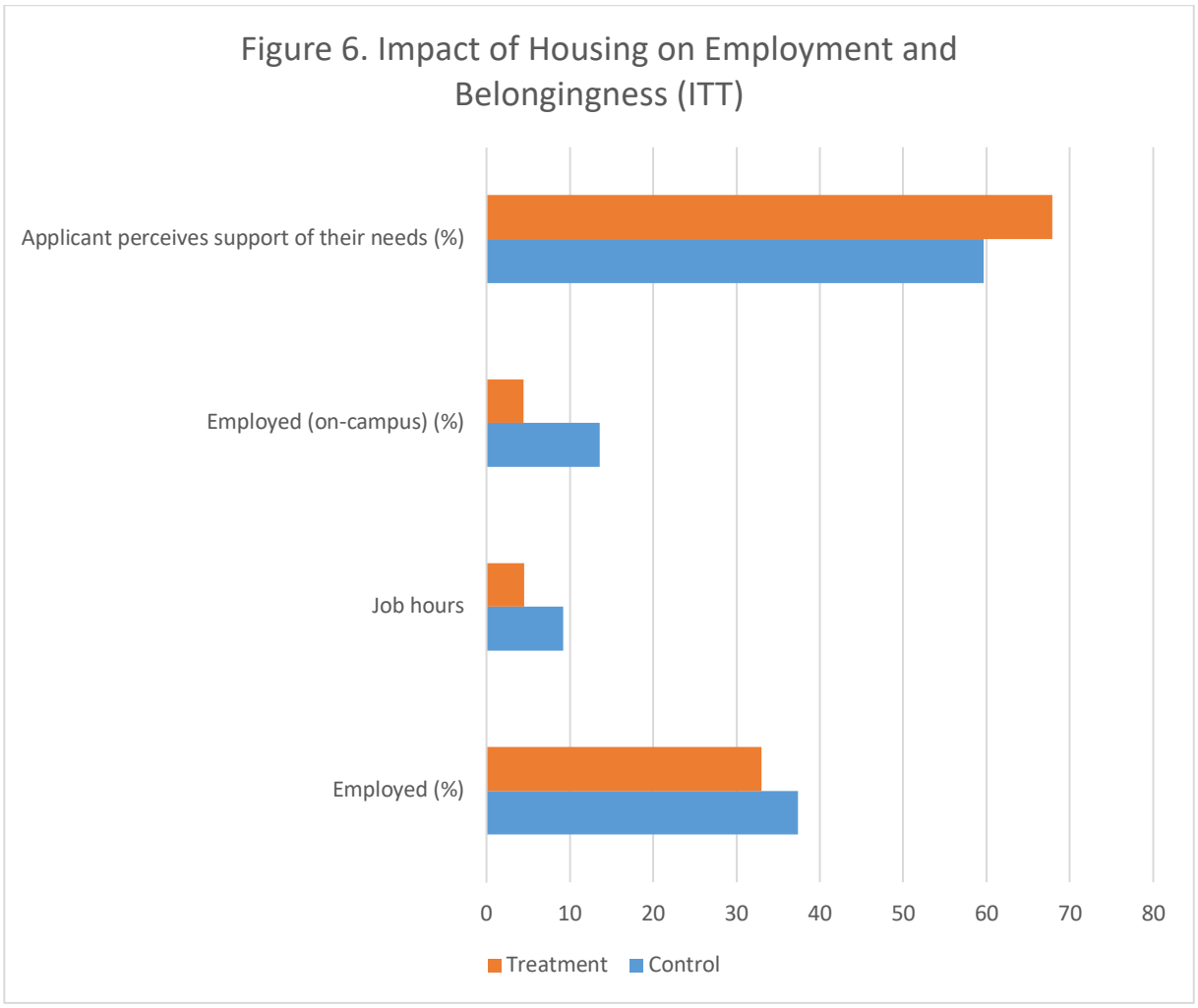
	Adjusted			
	SSF Impact (Coef.)	SE (Standard Error)	p value	N
Follow-up 1 Outcomes				
Food Security: Very Low (%)	/	/	/	/
Homelessness (HSS scale) %	**1.47**	**1.16**	**0.21**	**267**
Employment (%)	**-0.44**	**0.35**	**0.21**	**152**
Feels sense of belonging (1-5)	0.12	0.16	0.46	146
Perceived stress (0 to 16 scale)	0.11	0.28	0.71	145
Applicant perceives campus as generally supportive of their needs (%)	0.22	0.35	0.52	146
Applicant perceives campus as supportive of financial needs (%)	-0.40	0.38	0.29	145
Applicant perceives campus as supportive of non-academic needs (%)	0.32	0.38	0.41	146
Enrolled in subsequent term (%)	0.17	0.22	0.42	448
Enrolled Following Assignment (%)	0.21	0.27	0.44	448
Most Recent Follow-Up Outcomes				
Food Security: Very Low (%)	/	/	/	/
Homeless (HSS scale) %	0.36	0.51	0.48	391
Employment (%)	**-0.43**	**0.34**	**0.21**	**152**
Feels sense of belonging (1-5)	**0.20**	**0.14**	**0.17**	**146**
Perceived stress (0 to 16 scale)	**-0.44**	**0.31**	**0.17**	**145**
Applicant perceives campus as generally supportive of their needs (%)	**0.52**	**0.36**	**0.16**	**146**
Applicant perceives campus as supportive of financial needs (%)	-0.40	0.38	0.29	145
Applicant perceives campus as supportive of non-academic needs (%)	0.33	0.39	0.40	146
Term credits completed	0.21	0.26	0.41	448
Enrolled or Graduated (%)	0.50	0.62	0.42	393

Source: SSF Study survey data

Notes: Source is SSF survey and administrative data. All estimates are for compliers only (those assigned to treatment who received a scholarship, and those who were assigned control who did not receive a scholarship). Term impacts are derived from linear regression models. Enrollment and graduation impacts are derived from logistic regression models. Note: Impact is calculated from logistic/ linear regression models; in logistic models designated by the (%), slopes are log-odds coefficients. Bolded items reflect significant differences in the means based on regression analysis controlling for gender, first-generation college status and Other race. Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). No outcomes were imputed; samplExamining the Impact of Emergency Aid at Dallas Collegee varies based on total respondents for the survey item.Follow-up 1 refers to the academic term immediately following randomization, and Follow-up 2 refers to the academic term immediately after Follow-up 1. See Appendix Table XB for unadjusted results. / represents cells in which estimation could not be completed.

We see a near-consistent balance between follow-up responses for treatment and control groups, as shown in Table 5a. We assessed students' outcomes on their first follow-up survey (between Spring 2019 and Spring 2021) and their most recent follow-up survey. Other than weekly hours worked—lower for treatment students—there are no significant differences by treatment group at the time of follow-up 1, even when accounting for covariates and controls noted in the table. It may be that, for treatment students, their support relationships and sense of belonging are centered in the houses and housing program overall, rather than with their (often large and decentralized) college campuses. We explore these issues further below. We cannot directly compare connection to the *house* between non-SSF participants and SSF participants. We explore this possibility further in this report and elsewhere in our evaluation research.

We do however see employment impacts at Follow-ups 1 and 2. As shown in both the analyses reported in Table 5A and Appendix Table B-2, students in the treatment group are less likely to be engaged in paid employment than their counterparts in the control group. At follow-up time 2, we also see lower stress, more self-perceived support of their needs by their campus, and higher sense of belonging on campus. Importantly, the estimates above are for those students *accepted* to the program who also used the program. Appendix Table B-2 includes more detailed reporting on the intent-to-treat estimates (adjusted and unadjusted) for treatment and control students. We dig deeper into these patterns in Figure 6 derived from estimates reported more fully in Table B-2. We see that, at Follow-up 1, 4-12 months after assignment, students in the treatment group work 4.7 hours less per week than their control group peers ($p<0.01$), and are 9.1% less likely to hold an on-campus job than their control group peers ($p<0.05$).



Source | Survey of SSF Applicants
Notes | Employment measures from follow-up 1. Perceptions of support from most recent follow-up wave. Bolded items reflect significant differences in the means based on regression analysis controlling for gender, first-generation college status, and Other race. See Appendix 45 for adjusted and unadjusted estimates.

These findings suggest that the financial and community supports allow scholarship recipients to hold reduced employment responsibilities and have greater time and flexibility to study. As we will discuss when we turn to our STEM-specific analyses, this may also include greater opportunities to work in the unpaid internships and volunteer research opportunities that are common in STEM fields (recall 41% of our applicants intended STEM majors).

Academic Outcomes

Perhaps because SSF applicants are by nature of the program eligibility criteria already strong academically and positioned for success in college, we find null effects overall when assessing change for program participants between baseline and 12 or more months later. Table 5a reports these outcomes with an adjusted average treatment effect on the treated across all five cohorts, and Table 5b shows the impact of being accepted into the program on academic outcomes.[32] Appendix Table B3 shows the unadjusted ITT estimates for participation on academic outcomes, and Appendix Table A9 displays the outcomes for participants at baseline and a term or more following treatment.

Table 5b. Adjusted Intent-to-treat Estimates of Participation on Academic Outcomes

	Mean		SSF Impact						
	Control	Treatment	Unadjusted Coefficient	SE (standard error)	pvalue	Adjusted Coefficient	SE (standard error)	pvalue	N
Graduated (%)	**18.8**	**24.8**	**34.21**	**22.48**	**0.13**	**0.35**	**0.23**	**0.12**	**472**
Graduated or Enrolled (%)	**96.1**	**98.4**	**0.86**	**0.61**	**0.16**	**0.90**	**0.61**	**0.14**	**472**
Enrolled term following assignment (%)	81.9	81.9	0.01	0.22	0.95	0.00	0.22	0.99	552
Enrolled at all following assignment (%)	83.4	82.6	-0.04	0.23	0.86	-0.06	0.23	0.80	552
Total terms enrolled	4.4	4.5	0.06	0.24	0.81	0.05	0.24	0.85	552
Total terms enrolled post-assignment	35.3	39.3	-0.11	0.23	0.62	0.17	0.19	0.37	472

Notes: Source is National Student Clearinghouse administrative data. Term impacts are derived from linear regression models. Enrollment and graduation impacts are derived from logistic regression models. Note: Impact is calculated from logistic/ linear regression models; in logistic models designated by the (%), slopes are log-odds coefficients. Bolded items reflect significant differences in the means based on regression analysis controlling for gender, first-generation college status and Other race. Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). No outcomes were imputed; sample varies based on total respondants for the survey item. Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). No outcomes were imputed; sample varies based on total respondants for the outcome variable. Graduated represents the percentage point difference between students in the treatment group and control group who had completed a degree or certificate. See Appendix Table B-4 for adjusted and unadjusted results by cohort. / represents cells in which estimation could not be completed. Total terms enrolled includes only terms since the beginning of the study (Spring 2019 onward).

Across cohorts, as of Fall 2021, 96.1% of the control and 98.4% of the treatment have enrolled or graduated, according to our National Clearinghouse student records culled from the data archive for study purposes (*b*=0.90, p=0.14). Treatment students are found to have an advantage over the control group in the number of terms completed following assignment, although these differences are not statistically significant. Graduation (*b*=0.35, p=0.12) was the area where the effects of the scholarship were the most positive, favoring the treatment group, such that SSF recipients had a 6.0 percentage point advantage in graduating from at least one postsecondary institution. Beyond these figures, program participants interviewed also report feeling supported at their institutions, both before and after entering the program. Interestingly, the perceived support area with the highest growth between application and follow-up is on their campus's general support of their needs, which aligns with the SSF program's intentional efforts in response to our early results: to support staff and students' mental health with additional staff training and student resources.

We use a cohort analysis to examine these patterns more deeply as well as the impact of COVID-19 on our outcomes. These data are reported in Appendix Table B-4. Cohort 3 was sufficiently small that its adjusted analyses are not all sufficiently reliable to report here. All other cohorts are shown in their entirety. The biggest ITT effects found, indicating impact, were positive. The models also tended to find significant and negative effects for first-generational status. For Cohort 4, treatment students had a 20 percentage point advantage in graduation over the control group (33.0% vs. 13.0%; p=0.02). For Cohort 5, there is an increase in the treatment group in total terms enrolled post-assignment, equivalent to an extra 0.16 term (p=0.09). There are some marginally significant findings in Cohort 2, the first cohort to be randomized, which found a slight advantage for control students in enrollment following treatment (next term and overall) and in the number of terms enrolled post-assignment. For this cohort, there was an opportunity to enroll in SSF housing pre-pandemic in the Fall of 2019, but students' residential patterns varied widely beginning in March 2020, as students were sent home following COVID, and not all returned to SSF housing. This cohort also had a higher decline rate than other cohorts (Appendix Table A4), which may further partially explain these comparatively negative effects for Cohort 2. Otherwise, the cohort analyses do not signal the effects of the pandemic on the scale or direction of impact beyond the

potential enhancement of comparative stability and support treatment students may have in enrolling in and finishing their studies during a period of massive economic, personal, and academic upheaval in the wake of the pandemic.

STEM students

In the investigation of how the housing scholarship affects students across programs, we encountered evidence in the qualitative interviews about the additional stresses and expectations STEM students face concerning time, food, and work—both paid and unpaid. Given this and the large share of our experimental sample that applied to earn degrees in STEM fields when seeking out the scholarship, we now turn to a conditional analysis of the scholarship's effect on STEM and non-STEM majors.

As shown in Table 6a, among the students who apply to enter or continue in STEM majors, we find overall more acute extensions of the ITT effects reported earlier with respect to well-being. Most notably, the lower likelihood of employment on campus and fewer hours employed have significant effects. Specifically, non-STEM students in the treatment group are less likely to have an on-campus job than their control group peers, who work more whether on- or off-campus ($p=0.07$). This pattern holds at the time of the most recent follow-up as well ($p=0.03$). Also, at follow-up time 1, treatment students in STEM majors work 3.53 hours less weekly than their control group counterparts and those in non-STEM majors work 5.56 hours less weekly than their control group peers (b treatment effect = -5.6; $p<0.02$). The interaction term for STEM major is nonsignificant.

Table 6a. Intent-to-treat Estimates for STEM and non-STEM Students

	STEM Mean		Non-STEM Mean						
	Control	Treatment	Control	Treatment	SSF impact (coefficient)	SE (standard error)	STEM major (coeff)	STEM major X Treatment	p value (interaction)
Employment (%)	39.21	25.99	35.96	38.36	0.10	0.41	0.18	-0.71	0.80
Employment (hours/week)	**8.52**	**4.99**	**9.69**	**4.13**	**-5.56**	**2.42**	**-1.24**	**2.04**	**0.58**
Employment (on-campus/university) %	**14.25**	**8.15**	**12.89**	**1.91**	**-2.04**	**1.10**	**0.25**	**1.40**	**0.30**
Applicant perceives support of financial needs (%)	77.87	79.41	75.92	68.28	-0.39	0.47	-0.07	0.48	0.52
Applicant perceives support of non-academic needs (e.g., living expenses) (%)	63.94	71.80	72.36	70.12	-0.11	0.46	-0.28	0.48	0.48
Feels sense of belonging (1-5 scale)	3.46	3.49	3.56	3.70	0.14	0.19	-0.05	-0.11	0.70
Perceived stress (0 to 16 scale)	**9.40**	**8.91**	**8.76**	**9.20**	**0.44**	**0.36**	**0.66**	**-0.93**	**0.09**
Applicant perceives support of their needs (%)	58.29	64.16	60.84	70.53	0.44	0.44	-0.21	-0.18	0.78
Moderate or Severe Depression[a]	85.11	81.78	83.53	80.94	-0.18	0.55	0.18	-0.06	0.94
Most Recent Follow-Up Outcomes									
Employment (%)	41.52	35.84	42.39	38.32	-0.17	-0.17	0.01	-0.07	0.68
Employment (hours/week)	**10.14**	**5.55**	**11.39**	**5.80**	**-5.59**	**2.59**	**-1.28**	**0.99**	**0.80**
Employment (on-campus/university) %	13.84	10.27	8.06	9.73	1.00	0.71	0.84	-0.56	0.58
Applicant perceives support of financial needs (%)	80.70	74.19	73.47	64.62	-0.42	0.45	0.27	0.04	0.96
Applicant perceives support of non-academic needs (e.g., living expenses) (%)	72.51	74.10	71.13	71.14	0.00	0.45	0.02	0.08	0.91
Feels sense of belonging (1-5 scale)	3.46	3.56	3.57	3.68	0.11	0.18	-0.08	-0.01	0.97
Perceived stress (0 to 16 scale)	**9.33**	**8.54**	**9.09**	**9.10**	**0.01**	**0.39**	**0.26**	**-0.81**	**0.17**
Applicant perceives support of their needs (%)	**60.56**	**69.66**	**62.63**	**76.66**	**0.68**	**0.45**	**-0.14**	**-0.27**	**0.69**
Moderate or Severe Depression	85.11	81.78	83.53	80.94	-0.18	0.55	0.18	-0.06	0.94

Notes: Source is SSF survey and administrative data. Impact is calculated from logistic/ linear regression models; in logistic models designated by the (%), slopes are log-odds coefficients. Bolded items reflect significant differences in the means based on regression analysis controlling for gender, first-generation college status and Other race, as well as STEM major at application and an interaction term between treatment and STEM major. Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). No outcomes were imputed; sample varies based on total respondants for the survey item.Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). No outcomes were imputed; sample varies based on total respondants for the survey item. Follow-up 1 refers to the academic term immediately following randomization, and Follow-up 2 refers to the academic term immediately after Follow-up 1. See Appendixfor unadjusted results. / represents cells in which estimation could not be completed. Perceived support variables in the follow-up were asked on a 1 (very much) to 5 (not at all) scale. Percentages represent respondents reporting some (3) or higher levels of support.

In the investigation of how the housing scholarship affects students across programs, we encountered evidence in the qualitative interviews about the additional stresses and expectations STEM students face concerning time, food, and work—both paid and unpaid. Given this and the large share of our experimental sample that applied to earn degrees in STEM fields when seeking out the scholarship, we now turn to a conditional analysis of the scholarship's effect on STEM and non-STEM majors.

As shown in Table 6a, among the students who apply to enter or continue in STEM majors, we find overall more acute extensions of the ITT effects reported earlier with respect to well-being. Most notably, the lower likelihood of employment on campus and fewer hours employed have significant effects. Specifically, non-STEM students in the treatment group are less likely to have an on-campus job than their control group peers, who work more whether on- or off-campus ($p=0.07$). This pattern holds at the time of the most recent follow-up as well ($p=0.03$). Also, at follow-up time 1, treatment students in STEM majors work 3.53 hours less weekly than their control group counterparts and those in non-STEM majors work 5.56 hours less weekly than their control group peers ($b_{\text{treatment effect}} = -5.6$; $p<0.02$). The interaction term for STEM major is nonsignificant.

These higher work responsibilities among the control group may be associated with stress. At Follow-up 1, we observe less perceived stress among the STEM treatment vs. control students, observing marginally significant effects for the main effects of the treatment ($b_{\text{treatment effect}} = -5.6$; $p=0.02$) and STEM major intent ($b_{\text{STEM major}} = -0.6$; $p<0.10$) and of the interaction term ($b_{\text{treatment x STEM}} = -0.9$; $p<0.10$). At Follow-up 2, we again see less perceived stress among the STEM students who were assigned treatment, with a significant interaction term ($b_{\text{treatment x STEM}} = -0.8$; $p<0.17$). Meanwhile, employment hours are lower for treatment vs. control students with STEM (4.59 hours less) and non-STEM majors (5.59 hours less) ($b_{\text{treatment effect}} = -5.6$; $p=0.03$ overall). Descriptively, there is a 2.6-hour decline in the hours worked by STEM treatment students from time 1 to time 2 by 2.6.

When we turn to a ToT analysis of compliers (treatment accepted scholarship; control did not take the scholarship), we generally see stronger effects at the second time point, where the direction holds but the magnitude and significance increase. For example, the effect of the scholarship on hours worked per week is significant beyond $p<.001$ level on employment hours worked per week at times 1 and 2, favoring treated students. The difference in hours worked per week associated with the effect of housing is larger, from 6.7 hours to 8.5 hours less for STEM scholarship vs. STEM non-scholarship students. We also see significant effects on employment at both time points, with a larger and more significant difference in employment at time 2 and especially at time 1, whereby STEM scholarship students have a 24.6 percentage point lower chance of paid employment. Importantly, the significance of perceived stress reduction on STEM scholarship students (vs. STEM control students) is significant to the $p<0.07$ level at time 2. Unadjusted estimates are reported in Table B-5.

Table 6b. Treatment-on-the-Treated (ToT) Estimates of Being Issued Rent-Free Housing at SSF among Entering STEM majors

	Adjusted			
	SSF Impact (coef.)	SE (Standard Error)	p value	N
Follow-up 1 Outcomes				
Food Security: Very Low (%)	/	/	/	/
Homeless (HSS Scale) %	/	/	/	/
Employment (%)	**-1.33**	**0.60**	**0.03**	**69**
Hours worked/week	**-6.73**	**2.24**	**0.00**	**66**
Feels sense of belonging (1-5)	-0.01	0.24	0.98	68
Perceived stress (0 to 16 scale)	**-0.47**	**0.36**	**0.20**	**68**
Applicant perceives campus as generally supportive of their needs (%)	-0.08	0.51	0.88	67
Applicant perceives campus as supportive of financial needs (%)	-0.29	0.60	0.63	64
Applicant perceives campus as supportive of non-academic needs (%)	0.40	0.56	0.47	67
Enrolled in subsequent term (%)	-0.21	0.44	0.64	195
Enrolled Following Assignment (%)	-0.21	0.44	0.64	195
Most Recent Follow-Up Outcomes				
Food Security: Very Low (%)	/	/	/	/
Homeless (HSS Scale) %	-0.16	0.73	0.82	175
Employment (%)	**-0.92**	**0.55**	**0.10**	**69**
Hours worked/week	**-8.47**	**2.48**	**0.00**	**66**
Feels sense of belonging (1-5)	0.06	0.23	0.80	68
Perceived stress (0 to 16 scale)	**-0.87**	**0.47**	**0.07**	**68**
Applicant perceives campus as generally supportive of their needs (%)	0.14	0.52	0.79	67
Applicant perceives campus as supportive of financial needs (%)	-0.29	0.60	0.63	64
Applicant perceives campus as supportive of non-academic needs (%)	0.14	0.59	0.82	67
Total terms completed	0.09	0.42	0.82	195
Enrolled or Graduated (%)	0.59	1.18	0.62	117

Notes: Source is SSF survey and NSC administrative data. All estimates are for compliers only (those assigned to treatment who received a scholarship, and those who were assigned control who did not receive a scholarship). Continuous outcomes are modeled using OLS, and dichotomous outcomes are modeled using logistic regression. Impact is calculated from logistic/ linear regression models; in logistic models designated by the (%), slopes are log-odds coefficients. Bolded items reflect significant differences in the means based on regression analysis controlling for gender, first-generation college status and Other race, as well as STEM major at application and an interaction term between treatment and STEM major. Missing data have been imputed using multiple imputation with regression as recommended by What Works Clearinghouse (2020). No outcomes were imputed; sample varies based on total respondants for the survey item. First Follow-up refers to the academic term and survey immediately following randomization, and Most Recent Follow-Up refers to the last follow-up term on record for applicants via survey or NSC data. Perceived support variables in the follow-up were asked on a 1 (very much) to 5 (not at all) scale. Percentages represent respondents reporting some (3) or higher levels of support. Cells with a "/" reflect outcomes with too few responses to accurately estimate. Associates degree and certificate outcomes are not presented due to small n's. Enrolled or Graduated represents the percentage point difference between students in the treatment group and control group who were currently enrolled or who had completed a degree or certificate. See Appendix B-5 for unadjusted results.

As with our experimental sample overall, the academic outcomes to date were generally non-significant. However, there may be lagged effects from the stress and time challenges associated with needing to take on paid work on top of majors that generally require longer hours of study, unpaid or volunteer lab work, and generally exacting hours.[33] This is perhaps especially important for the COVID-affected recent cohorts for whom we only have short-term academic outcomes, and for whom there may be bigger consequences of not having access to in-person science and technology instruction and learning.

Even before COVID, when students typically studied and ate on and around campus, STEM courses and labs at times seemed to constrain SSF students' availability to form social connections as well as their ability to have shared mealtimes with their peers.

For example, Dante was a student who transferred into SSF his second year after starting in on-campus housing. At the end of the first semester in campus housing, when studying for finals and spending long hours in engineering labs, he frequently skipped lunch after running out of meal swipes and not being able to get help from his family in South Florida. He relayed over the course of two interviews (pre- and post-COVID) that his happiest time was in his SSF scholarship house. Still, he lamented that the demands of managing course scheduling and cross-campus transportation from his house to class and back meant he used the house pantry and refrigerator to grab and go for some meals rather than eating at the house the other students living there.

Discussion

Findings Summary

This randomized control trial study of a housing scholarship experimental intervention (rent-free and community living) has thus far been found to positively affect students' well-being, especially with respect to the need for and extent of paid employment, perceived stress, and perceived campus support. These effects are stronger to a degree among the students who complied with their assigned treatment category and those who enrolled in STEM majors. Students experienced mental health and basic needs insecurity (food and housing) challenges overall, but these experiences did not measurably improve for the treatment group during the window studied. This is perhaps in part because of the concurrent pandemic that disrupted the delivery of housing services partway through the study: students went home in March 2020, and many in the treatment group did not return to SSF housing until Fall 2021 if at all.[34]

Academic effects from housing may take a longer window of time to observe, especially during external challenges such as those which we witnessed during the study window to date. We found muted effects on academic outcomes generally, but multiple descriptively positive effects for treated students and some statistically measurable positive effects, notably for enrollment in the subsequent term and graduation. Overall, our eligible sample of students that applied to SSF housing started as strongly qualified students with 3.0 GPA minimums and college acceptances in hand, and thus differences between control and treatment students in these outcomes may remain unsubstantial. Students eligible for SSF in our study graduated at a rate of 21.0%.

Implementation

We followed this work with the collection of local Florida resources for basic needs support, by county, and sharing the information and website with SSF. Correspondingly, they developed and posted resources by campus linked to their program website. As noted in the main report, SSF added multiple pieces of training for their house management staff following the findings in our report. These program enhancements may prove timely to help the program serve the needs of a student population undergoing a pandemic depression that affects their career preparation and searching as well as, more immediately, their well-being and learning as college students.

Our interviews provided deeper understandings of students' emotional well-being as well. Even with SSF's support, students express the need for additional help. The SSF team has incorporated our findings to date into their training materials with student affairs staff, as well as campus relationships and lobbying for greater mental health and

well-being support. The SSF team responded promptly this past fall to our reporting and formative assessment feedback about student stress and health.

Limitations

While COVID impacted all aspects of higher education throughout this study, our analyses suggest it had minimal impact on the specific outcomes measured here. However, it remains an open question if there were unmeasured changes we cannot account for. Given that the landscape of higher education continues to change in response to the pandemic, we recommend continuing to take these findings as an example of how these types of programs work. It is unlikely there will be a return to previous practices and students continue to attend college despite these challenges. In addition to COVID's direct effects on students, their families, their colleges, and the housing program, the study period is also associated with skyrocketing housing costs and a crisis of affordability in the housing market, including in Florida and the specific college towns where our study students are enrolled (i.e., Tallahassee, Gainesville). These challenges may especially affect the control group in normal times but could also affect our treatment students who took time away from SSF during the pandemic. Moreover, missing data on some outcomes results in a smaller analytic sample, especially for focused analysis of subpopulations such as STEM students, those who received the treatment, and specific cohorts.

Contributions to Research and Policy

We find that the offer of housing support, and the actual support of that housing, have positive impacts on student mental health, financial stress, and sense of belonging. However, academic impacts are less definitive. These findings echo some other findings on programs that support students' basic needs.[35] As noted earlier, it is likely that students motivated to apply for support programs such as these may already have multiple ways in which they are different from students that do not. This challenge makes it difficult to identify differences in achievement between those that apply whether they were served. Finally, this study—embedded in a period of wider national and local basic needs insecurity challenges for college students—suggests the potential for greater partnerships between such community-based support programs and college campuses. Campus partners who provide aligned services can be, as we reported here with the CARE program, strategic partners in supporting students' belongingness, mental health, financial well-being, and academic supports. Such synergistic efforts seem poised to enhance the accessibility of services to support the first-generation college and/or otherwise structurally disadvantaged students studied here, who applied for rent-free community housing with the Southern Scholarship Foundation.

Notes and Endnotes

[1] See Goldrick-Rab, S., Baker-Smith, C., Clark, K., Dahl, S., Brescia, S., & Williams, T. (2021). *A first look at impacts of the college housing assistance program at Tacoma community college* for another causal examination of housing supports.

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[16] Goldrick-Rab et al. (2021).
[17] See Goldrick-Rab, Baker-Smith, Clark, Dahl, & Williams (2021) for another causal examination of housing supports.
[18] Of note, the evaluation does not specifically examine the impact on students identifying as transgender, though further study would be advisable. Prior to the evaluation study, applicants were asked to submit traditional pronouns relating to how they would like to be addressed (e.g., Mr., Miss, Ms.). Subsequently, the guidance and use of pronouns has shifted to be more gender inclusive. At the time of the last applicant cohort studied (Spring 2021), there was at least one transgender applicant who was permitted to apply to a house associated with their gender identity rather than gender assigned at birth. Gender and sexual identity are discussed further below.
[19] See Appendix Table 1 for a list of institutional block groups by gender and randomization status by cohort, and Appendix Table 2 for list of institutions and their demographics based on IPEDS.
[20] Gallagher, M. (2021). *The meal deficit metric project: Measuring missing meals at a granular level across Leon County, Florida*. Mari Gallagher Research & Consulting Group; Florida Department of Agriculture and Consumer Services. (2022). *COVID-19: Unveiling its impact on food insecurity in Florida*. In COVID-FoodInsecurityImpact-Infographic (Ed.). Tallahassee, FL.
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[22] We balance on application measures at the time of randomization, including expected family contribution and family income. Basic needs security items are drawn from the surveys conducted at the time of application, but deidentified and subsequently analyzed after the 1-week randomization period closes. There are modest but not statistically significant differences between treatment and control, such that for example 83.7% of the control group and 81.3% of the treatment group report very low or low food security and are not used in the examination of baseline equivalence.
[23] There were more spots available than those filled by treatment students. Firstly, randomization was only conducted for *open* spots, not those already held by a student. Second, there were some program exceptions that held initially open spots and thus reduced the number of spots open for randomization. Exceptions took the form of special population exceptions, sibling exceptions, etc.
[24] There are many reasons a student may turn down the scholarship. See Appendix Table A4 for more details on admission probability and crossover by cycle. Staff reported that their previously used selection interviews were labor-intensive means to select scholarship students as opportunities to communicate about expectations about the housing scholarship program. Upon moving to randomized assignment of scholarships for eligible students, with less student contact prior to selection, staff reported to the evaluation team that some students did not fully understand the communal living expectations (e.g., chores, shared mealtimes). This reporting aligns with interview data, where treatment students interviewed who declined the survey offered varied, often personally specific reasons why they declined. These ranged from concerns about being able to practice their instrument and walking distance from the music studios as compared to on-campus residence hall, concerns about roommate and community chore dynamics, to concerns about location and safety. In some cases, concerns arose from word-of-mouth discussions with peers and others not on the SSF staff and might have been alleviated with direct

engagement of supports. Interviews were conducted with the first two cohorts of students, in year 1 of the study. Since then, recruitment and outreach materials were updated by staff to support greater yield of scholarship offers.

[25] Because students may re-apply each term if they are rejected or waitlisted in a previous term total unique students are not equal to total applicants.

[26] Exceptions to the $7,500 EFC cutoff were assessed on the basis of student essays and additional applicant documentation, reported to the evaluation team as being associated with family job losses or other financial stressors not fully captured in the FAFSA.

[27] Kelchen, R. (2015). *Financial need and aid volatility among students with zero expected family contribution*. Journal of Student Financial Aid; Kelchen, R. (2017). *The distributional and cost implications of negative expected family contributions*. Journal of Student Financial Aid.

[28] We developed 17 fine-grained categorizations to capture with nuance what happened to applicants each cycle as recorded by individualized recordings of students by the SSF staff and our secure data partner – these included in some cases subgroups within these groupings. We collapsed these categories across randomization cycles to focus our analyses on students "ever assigned to treatment/scholarship" and those "ever assigned control." In addition to other variables used for reliability checks, we also assessed those students "ever housed," irrespective of their path from randomized applicant to SSF-housed student in a ToT analysis reported in addition to the primary experimental analyses. See Appendix Table B-3 and Table 6b for details. There are no major problems with crossover post-randomization from control group to treatment group, across both the fall and spring randomizations. There was, however, movement between waitlist and treatment than in previous cycles, as students - particularly in the larger spring pool – did not accept the scholarship award as noted above, necessitating the use of the randomly assigned waitlist pool. Waitlist students are not categorized as treated and are thus not present in the analysis. This movement reduces the potential impact on the treatment group, as fewer students assigned to treatment actually experienced the treatment than anticipated. Some of this movement may affect our impact estimates as it is possible that students that re-apply are receiving a different type of "treatment" than those that secured housing after only one application.

[29] We did not impute outcome data, following best practices and What Works Clearinghouse Standards v.5. Therefore, the number of cases in a given model may vary depending on the outcome, if there is item-level missingness on that measure. As with any longitudinal study, even without a pandemic affecting response rates, follow-up responses were lower than the baseline but still appropriate for estimation. See also Table A5 noted above and text discussion and table notes for specific analyses following.

[30] Britt, S. L., Ammerman, D. A., Barrett, S. F., & Jones, S. (2017). *Student loans, financial stress, and college student retention*. Journal of Student Financial Aid; Broton, K. M., Goldrick-Rab, S., & Benson, J. (2016). *Working for college: The causal impacts of financial grants on undergraduate employment*. Educational Evaluation and Policy Analysis.

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[32] These are broken out in Appendix Table B-4 by cohort, given the differential opportunity to graduate for earlier and later cohorts, and to consider the potential effects of COVID-19 which began during the application cycle for cohort 4 and as well as earlier and later cohorts' experiences leading up to, during, and beyond college enrollment.

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[35] Goldrick-Rab et al., 2021.