

APRIL 2023



CCWT

CENTER FOR RESEARCH ON
College-Workforce Transitions

RESEARCH REPORT

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What are the longitudinal impacts of a college internship (during a pandemic)?
Findings from the College Internship Study on program participation, quality, equitable access, and student outcomes



Continuing Studies
UNIVERSITY OF WISCONSIN-MADISON

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Introduction

Internships are widely considered valuable co-curricular opportunities that have multiple benefits to students' academic, social, and post-graduate career success. In an era where debt and the rising cost of living is foremost on many students, parents, and postsecondary leaders' minds, it is notable that research has shown that college graduates with internship experiences are 13-14% more likely to be invited for job interviews (Baert et al., 2021; Nunley et al., 2016), 15% less likely to be unemployed (Silva et al., 2016), more than four times more likely to secure employment that fits their career aspirations (Callanan & Benzing, 2004), and have 6% higher income later in life (Margaryan et al., 2020) compared to those without any internship experience.

With evidence like this demonstrating the transformative effects of internships, they are now considered a “high-impact practice (HIP)” that many colleges strongly encourage students to pursue, or even require for graduation (Kuh, 2008). In fact, internships may be especially valuable for low-income, first-generation, and/or students of color, where work-based learning can prove to be a “door opener” to social mobility for populations that have traditionally faced barriers and outright discrimination when seeking entry into the labor market (Saniter & Siedler, 2014).

Yet there are many challenges to the widespread participation of college students, particularly underserved students from historically marginalized populations, in the modern college internship. One of the biggest challenges that colleges face is a lack of empirical data about internship prevalence, quality, and accessibility. Without rigorous and up-to-date information about these issues, faculty, staff, and campus leadership are “driving without a road map” when it comes to expanding and continuously improving these critical programs.

While internships are valuable opportunities with multiple benefits, colleges and universities tend to lack rigorous data on internship prevalence, quality, and equitable access.

The lack of data on internships is exacerbated by a tendency to view (and measure) these complex experiential learning programs as a “black box” where mere participation is assumed to be sufficient to achieve these outcomes, with little scrutiny about the programmatic details (e.g., supervision, tasks, modality) that lead to student success. Another limitation in the research on internships is the paucity of mixed-methods studies, which is an approach that can offer considerable benefits for policy development and daily campus practices (Johnson & Onwuegbuzie, 2004). Through the statistical analysis of quantitative data, ideally from large and representative datasets, a study can explore relationships among key variables of interest. Alternatively, qualitative data can provide fine-grained stories of individual students, where the texture of local, daily experience complements the necessarily more abstracted findings from surveys or large datasets.

Surprisingly, given the prospect that the effects of an internship would not be immediate nor singular, but would instead be long-lasting and multi-faceted, little research exists that examines the varied impacts of an internship on students' lives over time. Longitudinal research that tracks cohorts of students (and graduates)

over time can provide robust evidence on individuals' post-graduate outcomes while also accounting for the various contextual factors (e.g., pandemics, changing economic conditions) that affect student trajectories.

Along with long-standing concerns about the legality and ethics regarding unpaid labor, the prospect that internships act as yet another exclusionary gatekeeping mechanism in our society cannot be ignored.

Perhaps the greatest challenge, however, is the fact that only 30% of the nation's students take an internship during college (Baccalaureate & Beyond, 2022; Hora, 2022). Along with long-standing concerns about the legality and ethics regarding unpaid labor, the prospect that internships act as yet another exclusionary gatekeeping mechanism in our society cannot be ignored. But without data on the scale and nature of this problem, and the precise reasons that keep students from successfully pursuing an internship, employers, campus leaders, and policymakers will continually struggle to design effective and targeted interventions.

In response, the Center for Research on College-Workforce Transitions (CCWT) launched the College Internship Study (CIS) in 2018 to serve, "an auxiliary institutional research unit focused exclusively on internships," as one of our partner institutions declared. The CIS was designed to address the aforementioned data-related challenges and to provide campus stakeholders with rigorous yet actionable knowledge on how to improve the quality and accessibility of internship programs.

As the largest multi-institutional, longitudinal study of internships in the U.S., the CIS has engaged 14 colleges and universities around the country in a mixed-methods analysis of students' experiences (or lack thereof) with internship programs. With 6,138 survey responses and data from 412 interviews collected from 2018 to 2022, the CIS dataset represents one of the most comprehensive bodies of evidence on college internships, and one that documents the unanticipated impacts of the COVID-19 pandemic.

In addition, to capture student experiences with internships from a diversity of postsecondary institutions, geographic locations, and student identities, the CIS included four types of institutions of higher education: Historically Black Colleges or Universities (HBCU), Hispanic Serving Institutions (HSI), two-year colleges and four-year comprehensive universities in the study. Little empirical research on college internships focuses on students of color (SoCs) and inequality in work-based learning, and even fewer have addressed institutional characteristics – such as Minority Serving Institution (MSI) status – that may affect students' academic and career trajectories (Strayhorn, 2020). Thus, the CIS is one of the first studies to provide a comprehensive understanding of how race and institutional features shape SoCs' internship experiences.

The College Internship Study engaged 14 campuses from 2018 to 2022, collecting 6,138 survey responses and 412 interviews. In this report we focus on 554 survey recipients and 58 interviewees from 8 institutions who participated in all 3 waves of the study.

This report provides a summary of key findings from the longitudinal analyses across eight institutions that participated in the third and final wave of data collection. As an excerpt of the extensive dataset, this summary addresses the most pressing issues in college internship research and practice, as suggested in the Internship Scorecard (Hora et al., 2020). Developed for assessing the purpose, quality, and equity of internship programs, the Internship Scorecard provides a framework for this report to address three main issues of college internships: (a) access and barriers to internships, (b) internship program features and quality, and (c) effects of internships on post-graduate outcomes. Each of these issues are examined in this report, with special considerations for how the COVID-19 pandemic impacted student experiences in college, life, and work.

The report is organized in three parts and all results should be interpreted in light of key limitations with the study that include potential bias from the self-selection of institutions and students into the study.

Literature Review: What does the research literature say about the longitudinal impact of internships on college students?

The literature on internships is a rapidly growing body of research that spans countries, disciplines and professions, and research methods. Some common lines of inquiry include the impacts of internships on student outcomes such as employability and employment status (Nunley et al., 2016), wages (Saniter & Siedler, 2014), grades (Binder et al., 2015; Parker III et al., 2016), and developmental outcomes such as career thinking (Taylor, 1988) and adaptability in dealing with career planning and changes (Ocampo et al., 2020). In addition, research exists on potentially negative aspects of internships such as social-cultural barriers to internship participation (Hora et al., 2021), and the impacts of unpaid internships and their potential to exacerbate inequality (Crain, 2016; Curiale, 2010; Hora, 2022).

Most research on college internships is cross-sectional, providing a static “snapshot” in time of internship operations and impacts. Consequently, longitudinal studies are needed to measure and understand the long-term effects of internship participation for students.

While this research literature has established that college internships can entail positive academic, career, and developmental outcomes for students (Knouse & Fontenot, 2008), there are considerable gaps which limit our understanding of both the mechanisms and outcomes of internship participation (Hora et al., 2017). In particular, most research on college internships is cross-sectional, providing a static “snapshot” in time of internship operations and impacts. Consequently, longitudinal studies are needed to provide data that is useful to both theorize causal mechanisms that impact the outcomes of college internships, as well as to measure and understand the

long-term effects of internship participation for students (Tu, 2022). Several promising longitudinal studies on internships have been conducted, however, and here we briefly highlight key findings that should be considered as we interpret findings from the College Internship Study.

There is evidence from longitudinal studies that college internship participation has a positive impact on students’ GPA and other academic outcomes. For example, Binder et al.’s survey of 15,732 college students in the UK (2015) found that internships had stable academic benefits, such as final year GPA and degree classes

(e.g., whether students got an honors degree, first-class degree, second-class degree, etc.). These positive effects hold regardless of students' demographic and academic background (e.g., gender, ethnicity, and academic aptitude). According to Kilgo et al.'s survey of 2,212 students from 17 U.S. colleges and universities (2015), participating in an internship was a significant and positive predictor for the inclination to engage in critical thinking, moral reasoning, intercultural engagement, and socially responsible leadership.

There is also evidence from longitudinal studies that college internship participation has a positive impact on key labor market outcomes. In terms of wages, most studies (Jung & Lee, 2017; Margaryan et al., 2020; Oswald-Egg & Renold, 2021; Weiss et al., 2014) found that internship participation was associated with an increase in post-graduation wages; for example, Margaryan et al. (2020) found that internship participation increases compensation by about 6%. When it comes to employment outcomes, most studies found that internships led to a smoother transition to the labor market, such as a lower risk of unemployment during the first year of their careers (Margaryan et al., 2020; Neyt et al., 2019) and less job search time (about two months) for first employment (Oswald-Egg & Renold, 2021).

Interestingly, several studies (Jung and Lee, 2017; Klein & Weiss, 2011; Weiss et al., 2014) have found that internships that were required by the students' academic program conferred fewer labor market benefits than voluntary internships. Three longitudinal studies that traced participants' labor market outcomes for five years after graduation found that positive effects are no longer robustly significant for wages, unemployment, or employment position (Neyt et al., 2019; Oswald-Egg & Renold, 2021; Weiss et al., 2014). On the other hand, in contrast with students who did not participate in an internship, students who interned were more likely to remain employed five years after graduation (Neyt et al., 2019; Di Meglio et al., 2021).

One longitudinal study (Ocampo et al., 2020) measured the effects of internship participation on career adaptability, which is defined as the "readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions" (Savickas, 1997, p. 254). Career adaptability is composed of four psychological resources (i.e., concern, control, curiosity, and confidence) that are needed for individuals to overcome challenges, capture opportunities, and better transition to work. Ocampo et al. (2020) found that after taking part in an internship, all dimensions of career adaptability increased linearly. In contrast, students who did not participate in an internship only had an increase in the concern dimension, but no growth for the other dimensions. Evidently, internship participation was associated with increased and enduring psychological resources for managing career changes; and a lack of internship participation was associated only with a progressively increasing concern over one's future career.

While the longitudinal research literature is relatively limited in scope, existing studies provide solid evidence that internships have a positive and, in some cases, substantial impact on students' career adaptability, academic, and labor market outcomes. That said, more research is required to track the varied outcomes of internship participation over time that includes a broader range of samples, institution types, geographic locations, and time periods.

In particular, one of the most pressing questions in the literature is how internship participation and experiences may vary depending on student race/ethnicity and the nature of their institutions (e.g., MSI or not).

Table 1: Summary of key findings from the literature on longitudinal impacts of internships

Author (Date)	Key Finding	Topic Addressed in College Internship Study?
Binder et al. (2015)	Internships positively impacted GPA, honors status	N
Kilgo et al. (2015)	Internships positively impacted key skills (e.g., critical thinking, intercultural engagement)	Y
Margaryan et al. (2020), Weiss et al., (2014)	Internships led to higher post-graduation wages	Y
Oswald-Egg & Renold, (2021)	Internships led to shorter job search time	Y
Jung & Lee (2017), Klein & Weiss (2011)	Required internships had fewer labor market benefits than non-mandatory internships	N
DiMeglio et al. (2021), Neyt et al., (2019)	Internships led to higher likelihood of employment 5 years after graduation	N
Ocampo et al. (2020)	Internships increased psychosocial outcomes – especially career adaptability	Y

Although there have been reports on racial inequity in college internships (e.g., Torpey-Saboe et al., 2022; Zilvinskis et al., 2020), most of the studies were cross-sectional and thus do not speak to possible differences in long-term impacts of internships among these groups.

However, cross-sectional studies have found students of color generally show lower rates of internship participation due to external work demands and other responsibilities (e.g., Fedynich et al., 2012) and must contend with racialized work environments and overcome additional challenges compared to white students (e.g., Shade & Jacobson, 2015; Thompson et al., 2021; Perry, 2022). This report builds on these findings and contributes detailed information on whether longitudinal trends related to internship participation may vary by race/ethnicity and MSI status.

Furthermore, given the recent and ongoing nature of the Covid-19 pandemic at the time of writing (Fall 2022), there has been little research on the impact of the COVID-19 pandemic on students' experiences with college internships. Given that preliminary research indicates that the COVID-19 pandemic negatively impacted many students' internship access, experiences, and outcomes (Fetter & Thompson, 2020), future research must consider the myriad ways that students were impacted between 2020 and 2022. In this report, we build on the prior literature on the longitudinal aspects of student experiences with college internships and share key findings from the College Internship Study with a specific focus on the impacts – both positive and negative – of the COVID-19 pandemic on students' lives.

This report builds on prior research examining if/how racial identity and MSI status impact internship experiences and outcomes.

Methodology: The Internship Scorecard and Study Methods

In this section, we briefly review the methodology used in the College Internship Study, with a focus on the study design, data collection methods, and analytic approaches.¹ We also describe the conceptual framework used to guide the study and this report – the Internship Scorecard (Hora et al., 2020).

The Internship Scorecard Framework

One of our primary goals in creating the Internship Scorecard was to problematize the notion of an “internship” from a homogenous type of program to one far more varied in terms of quality, purpose and activity, and to provide the field of higher education with a typology that can be used to distinguish one internship from another. Our approach varies from those of NACE (2018) and CAS (2018) in not articulating a set of criteria that all internships must meet to be considered “legitimate” or of high-quality. Instead, our position is that depending on the goals of each student and/or their academic program, their level of maturity and preparedness, and the nature of the profession and employer activities, the metrics for ascertaining program quality may vary. Consequently, no determinations of internship quality can be made solely on a single metric (e.g., online or in-person, paid or unpaid), as each may or may not align with the goals and characteristics of a particular experience.

Our approach also departs from previous attempts at asserting quality measures by adding a category for “equitable access,” which we argue is a critical issue that the field needs to consider while also actively working towards making internships available to all college students regardless of their financial status, social contacts, and personal identity and attributes (e.g., race, ethnicity, age).

To determine program (or cluster of programs) quality on these points, several indicators can be used to assign programs with a set of “scores” based on either a pre-internship analysis of program materials or a post-internship analysis of program materials and student feedback.

¹ Additional details on the study methods, including the survey instrument and interview protocols, are available online at: <https://ccwt.wisc.edu/projects/cis-nsoci/cis/> and <https://ccwt.wisc.edu/resources/research-instruments/>.

Indicators that are included in this report are italicized.

Table 2: Indicators for the Internship Scorecard framework
Program prevalence and format
<i>Total # of internships</i>
<i>Students' goals for pursuing the internship</i>
<i>Modality (in-person, online, hybrid)</i>
<i>Duration</i>
Features of program quality
<i>Plan for learning</i>
<i>Internship tasks</i>
<i>Purpose/Task Alignment</i>
<i>Supervision & mentoring</i>
<i>Skills development</i>
<i>Communication</i>
<i>Teamwork</i>
<i>Problem-solving</i>
<i>Network development</i>
<i>Student satisfaction</i>
<i>Student academic and career development</i>
Equitable access
<i>Compensation</i>
<i>Transportation access</i>
<i>Type of posting</i>
<i>Explicit statements on discrimination</i>
<i>Students views of discrimination</i>
<i>Percent of students at college who wanted an internship but could not pursue one</i>



With information on these selected indicators in hand, we hope that the data in this report provides you and your constituency with useful insights into the prevalence, quality, and equitable access of internship programs at institutions participating in the College Internship Study.

Overarching focus: Internship Prevalence, Quality, & Equity

**#1 Participation
and Access**

**#2 Student
Experience
and Program
Quality**

**#3 Social,
Emotional,
and Economic
Outcomes**

Research Questions

The research questions guiding the analysis of our longitudinal data and the organization of this report are as follows:

Participation and Access

1. How many students took internships between 2018-2022, who were they, and what types of internships did they take?
2. What kept some students from taking an internship, and did these obstacles change over time?

Student Experience and Program Quality

3. What was the impact of the COVID-19 pandemic on students' academic, professional, and personal plans?
4. How did students rate key indicators of internship program quality?
5. How satisfied (or not) were students with their internship experiences, and did this change over time?

Social, Emotional, and Economic Outcomes

6. What were the long-term impacts on students' labor market, psychosocial, and personal lives?

Study Design

This study employed a concurrent mixed-methods design, where both qualitative and quantitative data were collected and analyzed simultaneously (Creswell, 2014). The study also adopted a longitudinal design, with data collected from a single cohort of participants at three points in time. Consequently, both online survey and interview data were collected from this cohort throughout the course of the College Internship Study.

It is important to note that this is an observational study, and the claims made in this report from the survey data should be interpreted as associative and not causal. However, causal claims made in the interview data can (and should) be interpreted on their own terms.

It is important to note that this is an observational study, with respondents who self-selected into the project and no control or experimental conditions that could be used to ascertain causal relations between and among study variables. Thus, the claims made in this report based on the survey data should be interpreted as associative, where no claims of causal relationships between internships and particular outcomes are made, but instead observed correlations among key study variables. That said, we do embrace a view of causality that privileges first-person accounts of their own lives, and thus causal claims made in the interview data can (and should) be interpreted on their own terms (Martin, 2011).

Sampling Procedures and Study Sample Composition

This study used a non-probability sampling approach, meaning that institutions and respondents were not selected randomly from a broader population of individuals for inclusion in the study. First, institutions were identified through informal networks and affiliations, and key contacts were approached by the CCWT study team to inquire about institutional interest. These individuals then worked internally to self-select their institutions (or not) into the study. Table 3 below shows the cycle of data collection from participating institutions throughout the entire study. To maintain anonymity for institutional partners, pseudonyms referring to the campuses Minority Serving Institution (MSI) status and its institutional type is provided.

Second, a complete list of students was provided by each institution, except for those in programs that required a formal clinical practicum (e.g., teacher education, nursing), where work-based learning programs were considerably different from those available to other majors. Then, due to limited resources for survey incentives, up to 1,250 students were randomly selected from these lists for inclusion in the online survey portion of the study at Time 1 (between 2019 and Spring 2020 for institutions included in this report).

Students were sent a pre- and post-survey cash incentive, and students then self-selected into the survey portion of the study, with response rates ranging from 20.0% in 2019, 32.0% in 2020, 42.5% in 2021, and 46.5% in 2022. With each administration of the survey, attrition led to a decline in the size of the study sample.

At the end of the survey, students were given the opportunity to volunteer for focus groups or interviews. The research team contacted students regarding participation in focus groups or interviews, and students self-selected into the qualitative portion of the study. Before the COVID-19 pandemic these focus groups

Table 3: Institutions participating in the College Internship Study from 2018-2022

	Time 1 (T1)	Time 2 (T2)	Time 3 (T3)
1	HBCU - 1 (4 yr) Spring 2018	HBCU - 1 (4 yr) Spring 2019	
2	PWI - 1 (2 yr) Spring 2018	PWI - 1 (2 yr) Spring 2019	
3	PWI - 1 (4 yr) Spring 2018	PWI - 1 (4 yr) Spring 2018	
4	PBI - 1 (4 yr) Spring 2019	PBI - 1 (4 yr) Summer 2020	PBI - 1 (4 yr) Fall 2021
5	PWI - 2 (4 yr) Spring 2019	PWI - 2 (4 yr) Summer 2020	PWI - 2 (4 yr) Fall 2021
6	HBCU - 2 (4 yr) Fall 2019	HBCU - 2 (4 yr) Fall 2020	
7	HBCU - 3 (4 yr) Fall 2019	HBCU - 3 (4 yr) Fall 2020	HBCU - 3 (4 yr) Fall 2021
8	HSI - 1 (4 yr) Fall 2019	HSI - 1 (4 yr) Fall 2020	HSI - 1 (4 yr) Fall 2021
9	HSI - 2 (4 yr) Fall 2019	HSI - 2 (4 yr) Fall 2020	HSI - 2 (4 yr) Fall 2021
10	HBCU - 4 (4 yr) Spring 2020	HBCU - 4 (4 yr) Spring 2021	
11	HSI - 3 (2 yr) Spring 2020	HSI - 3 (2 yr) Spring 2021	HSI - 3 (2 yr) Spring 2022
12	HBCU - 5 (4 yr) Spring 2020	HBCU - 5 (4 yr) Spring 2021	HBCU - 5 (4 yr) Spring 2022
13	HBCU - 6 (4 yr) Spring 2020	HBCU - 6 (4 yr) Spring 2021	HBCU - 6 (4 yr) Spring 2022
14	HSI - 3 (4 yr) Spring 2021	HSI - 3 (4 yr) Spring 2022	

or interviews took place in-person at the student’s campus, but after the Spring of 2020 all qualitative data were collected via one-to-one interviews and took place via Zoom virtual meeting or phone.

Overall, eight of the original 14 institutions participated in T3 of the study, resulting in a total response of 554 survey participants and 58 interview participants at T3.

Composition of the Survey Sample Over Time

For this report, we focus on data from the study sample who completed the survey at all three time points. The composition of the T3 survey sample is described in Table 4 below. Some notable features of the study sample include the large number of women students (approximately 66% of the sample throughout the study), relatively large numbers of students of color, and growth in the number of graduated students over time.

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Table 4: Demographic information of longitudinal cohort for survey across three waves of study

Sample size for participants in all 3 waves		554
Data Collection Period (Year)		T1: 2019-2020 T2: 2020-2021 T3: 2021-2022
No. of Institutions		8
Category		Frequency (Proportion)
MSI status		
	HBCU	3 (37.5%; n=152)
	HSI	2 (25%; n=139)
	PWI	3 (37.5%; n=263)
Gender		
	Woman	366 (66.1%)
	Man	176 (31.8%)
	Another gender identity	12 (2.1%)
Racial identity		
	American Indian/Alaskan Native	4 (0.7%)
	Asian or Asian-American	33 (6.0%)
	Black or African American	149 (26.9%)
	Hispanic, Latinx, or Chicano/a	102 (18.4%)
	Native Hawaiian/Pacific Islander	0 (0.0%)
	White	220 (39.7%)
	Two or more races/Ethnicities	37 (6.7%)
	Others	8 (1.4%)
Enrollment & Employment Status (T3)		
	Enrolled full-time	74 (13.4%)
	Enrolled part-time	96 (17.3%)
	Graduated from college & employed	231 (41.7%)
	Graduated from college & unemployed	26 (4.7%)
	Stopped attending college	4 (0.7%)
	Taking a break from college	43 (7.8%)
Racial identity & MSI status		
	Black or African American & HBCU	89 (16.1%)
	Hispanic, Latinx, or Chicano/a & HBCU	9 (1.6%)
	Other Students of Color & HBCU	15 (2.7%)
	White & HBCU	28 (5.1%)
	Black or African American & HSI	6 (1.1%)
	Hispanic, Latinx, or Chicano/a & HSI	75 (13.5%)
	Other Students of Color & HSI	26 (4.7%)
	White & HSI	32 (5.8%)
	Black or African American & PWI	54 (9.7%)
	Hispanic, Latinx, or Chicano/a & PWI	18 (3.2%)
	Other Students of Color & PWI	41 (7.4%)
	Black or African American & HBCU	150 (27.1%)

Composition of the Interview Sample Over Time

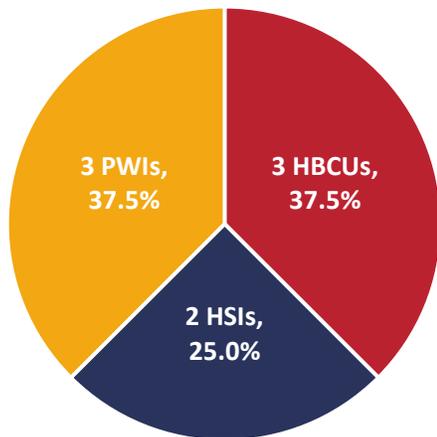
The composition of the T3 interview sample is described in Table 5 below. Some notable features of the study sample include: 18.7% of the original T1 sample completed interviews at all three time points, women comprise 63.4% of the T3 sample, and Black or African American students comprise 44.8% of the T3 sample.

Table 5: Demographic information of longitudinal cohort for interview across three waves of study

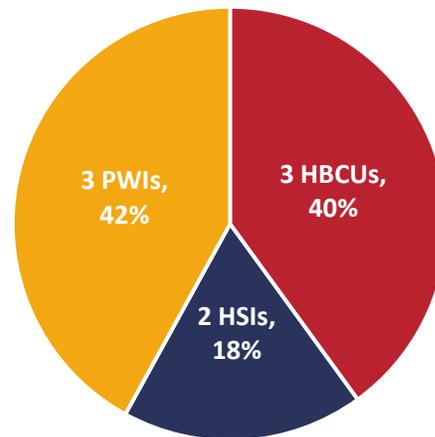
Sample size for participants in all 3 waves		58
Data Collection Period (Year)		T1: 2019-2020 T2: 2020-2021 T3: 2021-2022
No. of Institutions		8
MSI status		
	HBCU	3 Institutions; n=23
	HSI	2 Institutions; n=11
	PWI	2 Institutions; n=24
Gender		
	Women	n=37
	Men	n=19
	Another gender identity	n=1
	Gender identity not identified	n=1
Racial identity		
	American Indian/Alaskan Native	n=1
	Asian or Asian-American	n=2
	Black or African American	n=26
	Hispanic, Latinx, or Chicano/a	n=6
	Native Hawaiian/Pacific Islander	n=0
	White	n=15
	Two or more races/ Ethnicities	n=6
	Others	n=2
	International	n=0
	Race identity not identified	n=0

The study recently wrapped up its third and final wave of data collection in the Spring of 2022, and in this report we discuss key findings from the cohort of students who participated in our online survey (n=554) and interviews (n=58) throughout the three years of the study, with a focus on trends in participation, program quality, and access to internships over time.

Survey Sample (n=554)



Interview Sample (n=58)



Research Instruments and Data Collection

Two types of data collection procedures were used for this study – an online survey and an in-person or online focus group or interview. Both involved students self-selecting into the study.

Survey

The online survey was sent to students along with a cash incentive before and after the survey was administered. The survey included approximately 56 questions, and to ensure that survey respondents had a similar referent regarding what precisely an “internship” was, we provided the following definition:

An internship is a position held within an established company or organization while completing a college degree, certificate, or diploma program. It involves working at the company or organization and performing tasks similar in nature and skill-level to tasks done by entry-level employees in the organization.

Respondents were directed to think of an internship experience in the past 12 months when answering the survey questions, with a combination of existing scales (e.g., career adaptability, supervisor support) and newly created items. Survey items elicited demographic information (e.g., race/ethnicity, age, gender), aspects of the students’ internship experience (e.g., supervisor quality, nature of tasks), and other items regarding outcomes of the internship and/or obstacles that prevented them from pursuing a position. More detailed technical information on the survey instrument is available at the CCWT website (<https://ccwt.wisc.edu/resources/research-instruments/>).

Students who had responded to each administration of the survey were contacted again one year later and invited to participate, with a declining number of students taking the survey in each successive year. This report focuses on data from students who participated in the survey for three years in a row.

Focus Groups and Interviews

After completing the survey at T1, the students were asked if they were willing to participate in a focus group. Focus groups were included in the study not only to their practicality (i.e., ease of scheduling multiple student meetings) but especially the inherently social nature of the data collected, where interactions between and among participants could spark new ideas and reflections. During and after the COVID-19 pandemic, however, our team shifted to online Zoom virtual one-on-one interviews. These sessions lasted about one hour and were moderated by one to two researchers who used a semi-structured protocol that included questions about students' backgrounds, motivations for pursuing internships, and the types of mentorship they received in their internships. Focus groups and interviews were audio-recorded with consent and transcribed verbatim.

Students who were interviewed each year were contacted one year later and invited to participate, with a declining number of students being interviewed each year. This report focuses on interview data from students who were in the study for three years in a row.

Data Analysis

The data were analyzed using multiple methods, including qualitative analytic techniques such as inductive theme analysis of interview and focus group transcripts; as well as quantitative analytic techniques such as descriptive analyses of survey responses, chi-square testing, Fisher's exact test of independence, logistic regression, and multiple regression analysis of survey data. In this report, we focus on descriptive themes (from interviews) and descriptive statistics (from survey data).

Key Findings #1: Participation and Access

Overarching focus: Internship Prevalence, Quality, & Equity

#1 Participation
and Access

#2 Student
Experience
and Program
Quality

#3 Social,
Emotional,
and Economic
Outcomes

In our first set of results we address the critical questions of how many students participated in internships throughout the duration of the College Internship Study, who interns were, and the types of internships that they completed (Research Question #1). Next, we describe obstacles that prevented students from taking an internship and the ways in which obstacles to internship completion changed over time (Research Question #2).

RQ#1.

How many students took internships between 2018-2022, who were they, and what types of internships did they take?

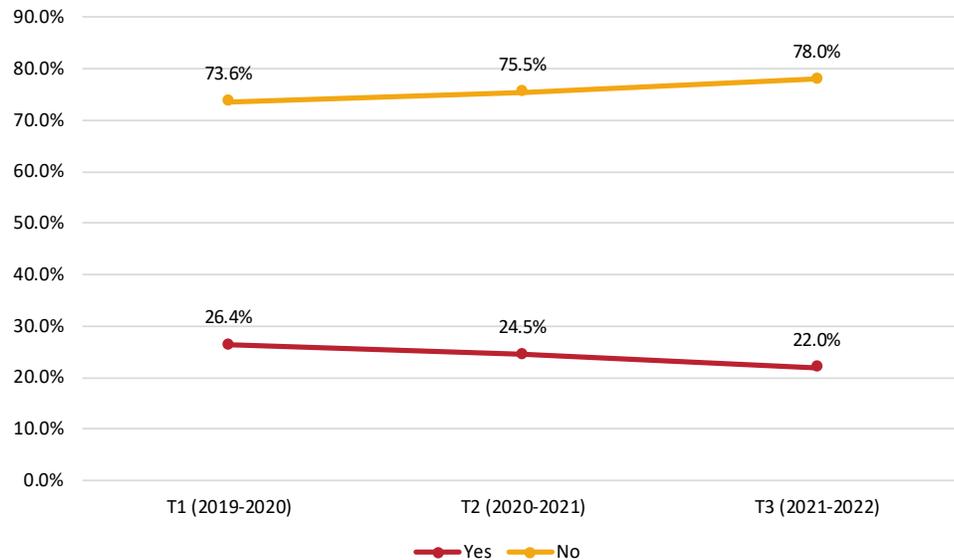
In our first set of findings, we address the basic question of the prevalence of internship participation on the campuses participating in the College Internship Study. For a point of comparison, keep in mind that national data (pre-pandemic) include estimates ranging from 50% participation (National Survey of Student Engagement, 2020) to 30% (Baccalaureate & Beyond, 2022).²

Changes in Participation Rates Over Time (Total Sample) - Survey Data

We first report the internship participation rate for the longitudinal cohort by the three waves of data collection in our study – Time 1 (2019-2020), Time 2 (2020-2021) and Time 3 (2021-2022). The number of students who took an internship at each of the three waves of data collection for the CIS declined from 26.4% in T1 to 22% in T3. It is important to note that such a decline is unsurprising given that over time, students in our study began to graduate and enter the workforce, whereupon they would no longer need an internship (e.g., 35.4% of the T1 cohort graduated by T2 and 28.1% graduated by T3). See Figure 1 below for these data over time.

² For more detailed estimates of the number of internships in the U.S. see: Hora, M.T. (2022). Unpaid internships and inequality: A review of the data and recommendations for research, policy, and practice. Policy Brief #2. Center for Research on College-Workforce Transitions. University of Wisconsin-Madison.

Figure 1: Changes in internship participation over time (T1-T3) for survey longitudinal cohort



Note: See Table 4 for sample information.

While the decline in internship participation after 2020 could have been caused by factors beyond the COVID-19 pandemic (e.g., graduation and entry into the labor market), these data are consistent with other studies that found widespread cancellations of internships and national and state lockdowns led to declines in internship participation (see Teng et al., 2021). Pressing questions facing the field now include whether the internship labor market (and student participation in it) has recovered post-pandemic, if a supply-demand imbalance will negatively impact the internship labor market in the near term, and whether the precipitous decline in internships impacted all college students equally?

Pressing questions facing the field now include whether the internship labor market (and student participation in it) has recovered post-pandemic, if a supply-demand imbalance will negatively impact the internship labor market in the near term, and whether the precipitous decline in internships impacted all college students equally?

Changes in Participation Rates Over Time by Student Demographic and Institution Type - Survey Data

Next, we report data on the demographic characteristics of students who took an internship that were part of our longitudinal survey cohort.

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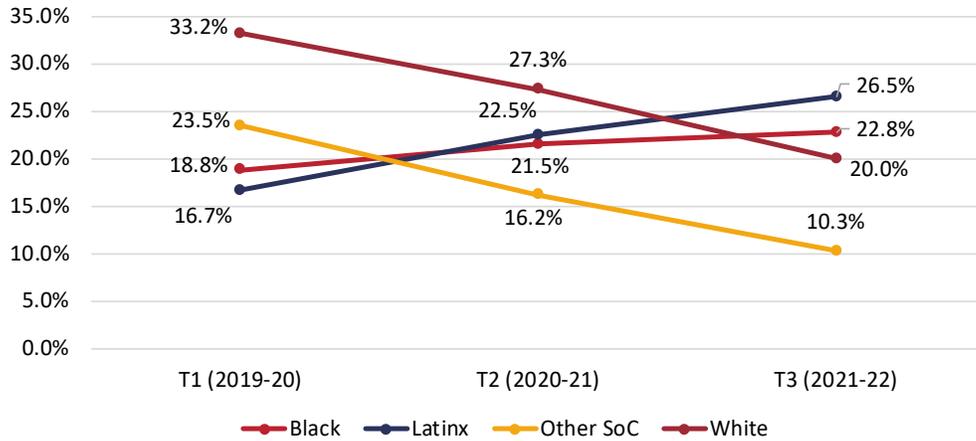
Table 6: Changes in internship participation by student demographics and institutional affiliation for the longitudinal survey cohort (n=554)

	Participated in Internship (%)		
	T1 (2019-20)	T2 (2020-21)	T3 (2021-22)
Total	146 (26.4%)	136 (24.5%)	122 (22.0%)
Gender			
Female	98 (26.8%)	96 (26.2%)	82 (22.4%)
Male	43 (24.4%)	39 (22.2%)	38 (21.6%)
Another gender identity	5 (41.7%)	1 (8.3%)	2 (16.7%)
Racial identity			
American Indian/Alaskan Native	2 (50.0%)	1 (25.0%)	1 (25.0%)
Asian or Asian-American	5 (15.2%)	5 (15.2%)	5 (15.2%)
Black or African American	28 (18.8%)	32 (21.5%)	34 (15.3%)
Hispanic, Latinx, or Chicano/a	17 (16.7%)	23 (22.5%)	27 (26.5%)
Native Hawaiian/Pacific Islander	N/A	N/A	N/A
White	73 (33.2%)	60 (27.3%)	44 (20.0%)
Two or more races/Ethnicities	20 (54.1%)	14 (37.8%)	9 (24.3%)
Others	1 (12.5%)	1 (12.5%)	2 (25.0%)
First-generation status			
First-generation college students	64 (24.5%)	58 (22.2%)	57 (21.8%)
Continuing-generation college student	82 (28.0%)	78 (26.6%)	65 (22.2%)
Major			
Arts & Humanities	7 (16.3%)	6 (14.0%)	10 (23.3%)
Business	32 (26.4%)	38 (31.4%)	25 (20.7%)
Social Sciences	28 (25.5%)	19 (17.3%)	24 (21.8%)
STEM	39 (25.5%)	32 (20.9%)	31 (20.3%)
Other majors	40 (31.5%)	41 (32.3%)	32 (25.2%)
MSI status			
HBCU	31 (20.4%)	34 (22.4%)	35 (23.0%)
HSI	33 (23.7%)	34 (24.5%)	42 (30.2%)
PWI	63 (41.7%)	48 (31.8%)	30 (19.9%)

Note: Each cell's percentage represents the proportion of interns within each group who participated in internship(s) in each time point (e.g., Unpaid female intern's proportion to female students who participated in internship(s) in T1).

Table 6 shows differences in internship participation rates throughout the study by selected demographic and institutional characteristics. A lower percentage of Black or African American and Hispanic, Latinx, or Chican@ students participated in an internship at T1 and T2 as compared with their white peers (see Figure 2). Women and first-generation college students had slightly lower rates of internship participation as compared to their peers who identified as men and continuing generation college students. It is important to note that the sample sizes by race and institution type differ and that some groups of students are over- or under-represented.

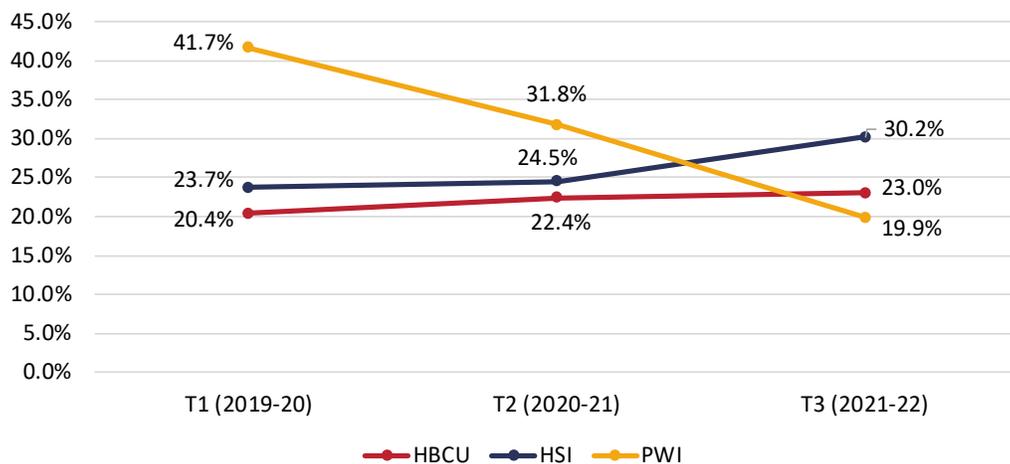
Figure 2: Students' internship participation rate by race for survey longitudinal cohort (T1-T3)



Note: See Table 4 for sample information.

Across institution types by MSI status, rates of internship participation were highest among students attending PWIs at T1 and T2, whereas internship participation rates were higher among students attending HBCUs and HSIs at T3 (note the sample size differences across institution type). This might be due to the fact that PWI students in our data generally started their programs earlier than MSI students (i.e., 46.1% of PWI students started their programs before 2015, while 23.0% of HSI and 12.5% of HBCU students started their programs before 2015). Another explanation for these differences could be that a larger proportion of PWI-based students graduated in Times 2 and 3, with internship participation rates of these institutions noticeably lower later in the study.

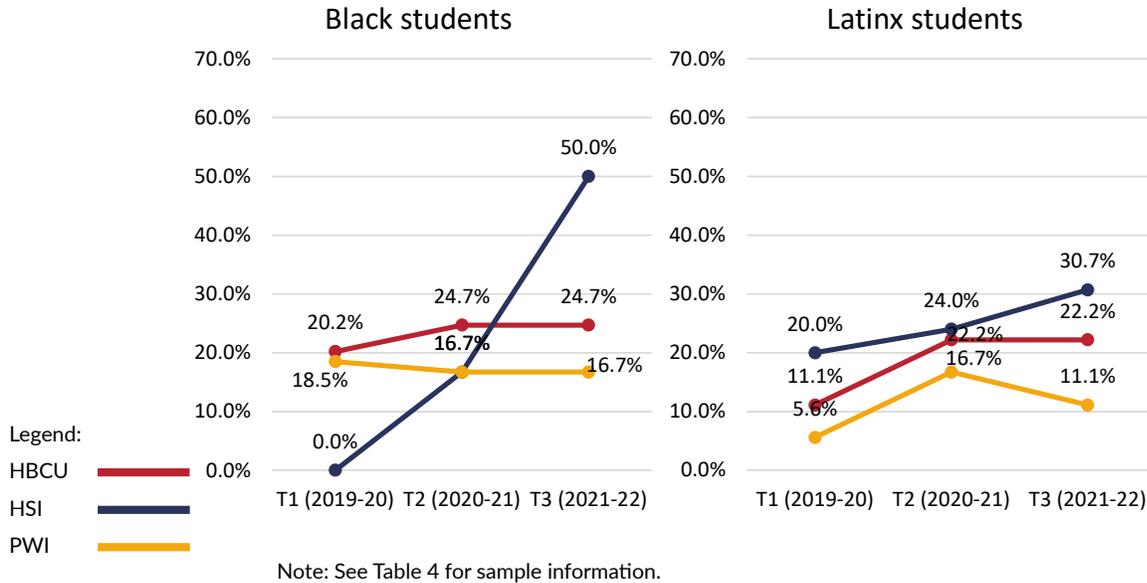
Figure 3: Students' internship participation rate by institution type for survey longitudinal cohort (T1-T3)



Note: See Table 4 for sample information.

In order to understand the experiences of Black or African American students who attend HBCUs and of Latinx students who attend HSIs, we examined interactions between race/ethnicity, MSI status, and internship participation (see Figure 4).

Figure 4: Black and Latinx students' internship participation by MSI status



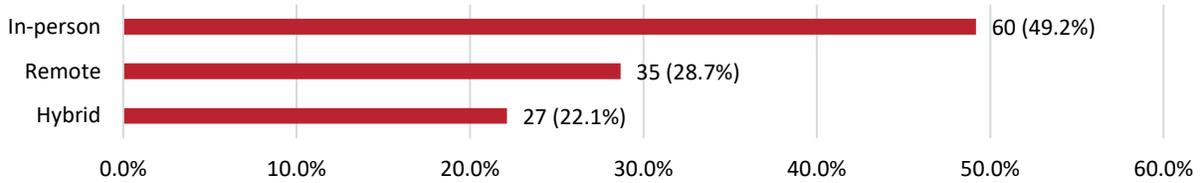
These data suggest that Black students' internship participation rates were the highest at HBCUs in Times 1 and 2, and in HSIs in Time 3. Latinx students' internship participation was the highest in HSIs in all time-points, followed by HBCUs and PWIs. Consequently, students of color in MSIs generally participated in internships more than their counterparts in PWIs. These results suggest that students' race/ethnicity and whether they attend a MSI or not – may be related to their internship participation. Again, although descriptive statistics cannot substantiate causal claims about this relationship, these data and other studies (see Hora et al., 2022) suggest that internship participation may be higher for students of color when they attend a MSI.

Changes in Internship Participation Rates Over Time by Modality, Compensation, and Employer Sector - Survey Data

Next, we report internship participation by features of the programs themselves, including modality (e.g., in-person, remote, hybrid), compensation level, and employer sector.

Internship modality (in-person, remote, hybrid). In recent years, online internships have become increasingly common and popular among students, particularly during the COVID-19 pandemic. Tracking the modality of internships is important because student experiences may vary considerably according to their physical presence (or not) at the job site. Unfortunately, data on internship modality were only collected at T3 of the study (2021-2022) given the rapid increase in online positions due to the COVID-19 pandemic. Our data shows that among the students who participated in internships at Time 3 (n=122), in-person internships comprised the largest proportion of positions (49.2%), followed by remote (28.7%) and hybrid (22.1%) internships (see Figure 5).

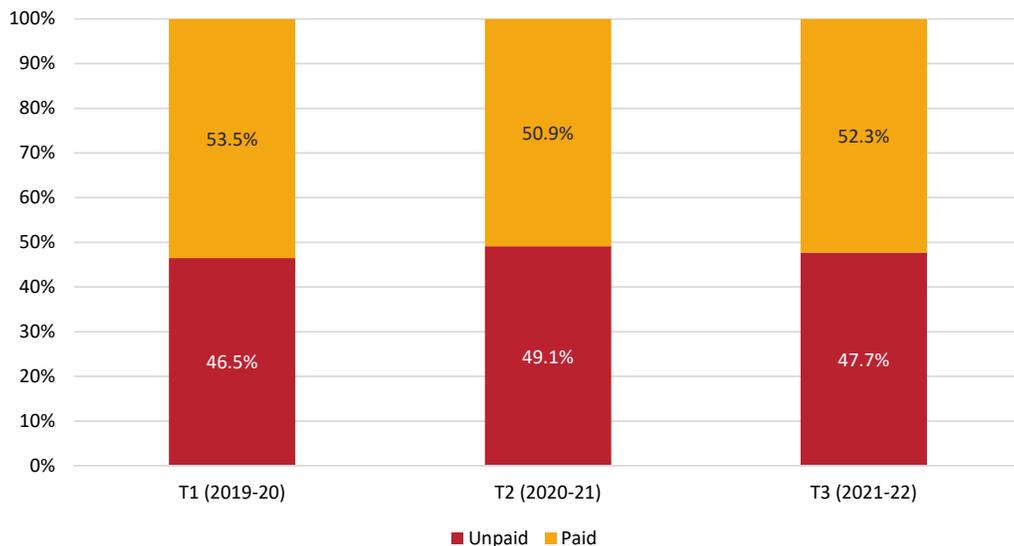
Figure 5: Internship modality for interns at Time 3 (n=122)



Internship compensation. Another important feature of an internship program is compensation, which has implications for access and equity. While unpaid internships are technically legal when the program passes certain criteria (e.g., the employer is a non-profit, the intern does not displace full-time workers), many analysts believe that unpaid internships unfairly exclude low-income and first-generation college students who may not be able to afford to work for free. Scholars also have raised questions about the quality of unpaid internships, based on the belief that employers put more time, energy, and mentorship into the design and maintenance of paid positions (Rogers et al., 2021).

Ultimately, our data indicates that almost half of all students in our longitudinal cohort were not paid for their internships throughout the study (ranging from 46.5% unpaid at T1 to 49.1% at T2). These percentages (see Figure 6) are consistent with national estimates of unpaid internships which range from 30% to 58%, indicating that uncompensated internships are widespread and common (Hora, 2022).

Figure 6: Changes in internship compensation over time (T1-T3)



Note: See Table 6 for sample information.

It is important to note that participation in unpaid internships was not uniform across all student demographic groups (See Table 7). Female students more frequently participated in unpaid internships (ranging from 49.0% of women at Time 1 to 53.7% of women at Time 3) than male students (ranging from 34.2%

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of men at T3 to 38.5% of men at T2). There were also differences in internship compensation by students' racial identity. For example, a higher percentage of students of color took unpaid internships as compared to white students (the only exception to this trend is at T1 wherein Black students had a slightly lower percentage than white students).

Differences in the rates of unpaid internship participation are also evident by institutional type. Generally, HSI students had higher rates of unpaid internships as compared to HBCU and PWI students.

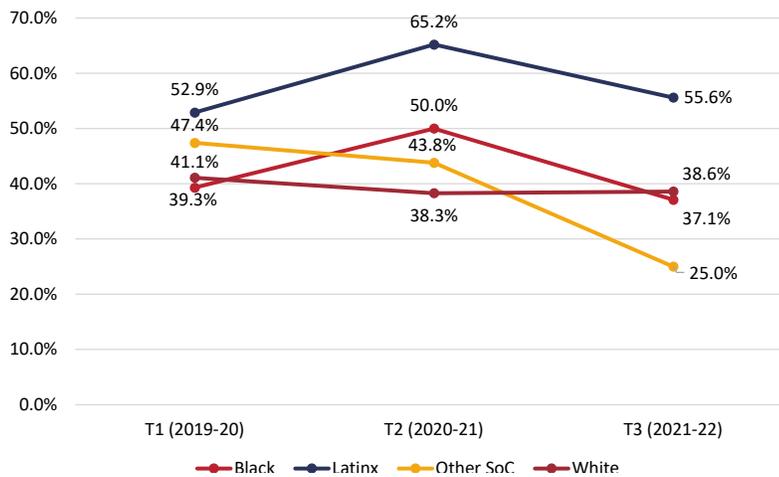
Table 7: Changes in internship compensation by student demographics and institutional affiliation

	Participated in Unpaid Internships (%)		
	T1 (2019-20)	T2 (2020-21)	T3 (2021-22)
Sample Size (Paid & Unpaid Internships)	146	136	122
Total	66 (45.2%)	65 (47.8%)	57 (46.7%)
Gender			
Female	48 (49.0%)	49 (51.0%)	44 (53.7%)
Male	15 (34.9%)	15 (38.5%)	13 (34.2%)
Another gender identity	3 (60.0%)	1 (100.0%)	0 (0.0%)
Race			
American Indian/Alaskan Native	0 (0.0%)	1 (100.0%)	0 (0.0%)
Asian or Asian-American	3 (60.0%)	2 (40.0%)	2 (40.0%)
Black or African American	11 (39.3%)	16 (50.0%)	19 (55.9%)
Hispanic, Latinx, or Chicano/a	9 (52.9%)	15 (65.2%)	15 (55.6%)
Native Hawaiian/Pacific Islander	N/A	N/A	N/A
White	30 (41.1%)	23 (38.3%)	17 (38.6%)
Two or more races/Ethnicities	12 (60.0%)	7 (50.0%)	4 (44.4%)
Others	1 (100.0%)	1 (100.0%)	0 (0.0%)
First-generation status			
First-generation college students	33 (51.6%)	28 (48.3%)	25 (43.9%)
Continuing-generation college students	33 (40.2%)	37 (47.4%)	32 (49.2%)
Major			
Arts & Humanities	2 (28.6%)	2 (33.3%)	5 (50.0%)
Business	3 (9.4%)	8 (21.1%)	3 (12.0%)
Social Sciences	16 (57.1%)	12 (63.2%)	15 (62.5%)
STEM	16 (41.0%)	13 (40.6%)	8 (25.8%)
Institution Type			
HBCU	11 (35.5%)	15 (44.1%)	13 (37.1%)
HSI	22 (66.7%)	24 (70.6%)	27 (64.3%)
PWI	26 (41.3%)	18 (37.5%)	11 (36.7%)

Note: Each cell's percentage represents the proportion of unpaid interns within each group who participated in internship(s) in each time point (e.g., Unpaid female interns's proportion to female students who participated in internship(s) in T1).

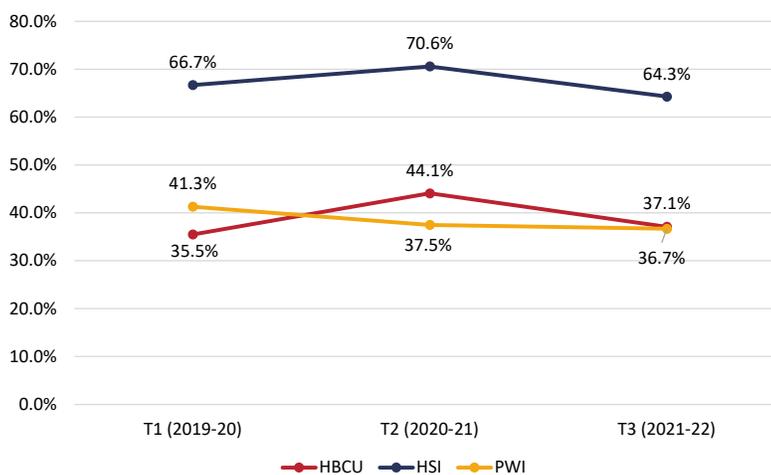
Figures 7 and 8 highlight the differences between racial/ethnic groups and institution types regarding internship pay. Latinx and HSI students had higher rates of unpaid internships as compared to other student and institution groups. These disproportionately high rates of participating in unpaid internship is driven by student data from one of the HSI institutions in our study, which had a very high rate of unpaid internships (69.6%-80%) at all 3 time points. Regarding other racial groups (Figure 7), the proportion of unpaid internships among Black students was the lowest among student groups at T1 (39.3%), but it spiked to 50.0% during the early pandemic years (2020-2021). Other students of color reported generally similar rates of unpaid internships with Black and white students in Time 1 and 2, but later significantly decreased to the lowest percentage across any racial group at Time 3. Unpaid internship rates among white students were relatively consistent across the three time points. There were no meaningful differences between HBCUs and PWIs in rates of unpaid internships across time points (Figure 8).

Figure 7: Percentage of unpaid internships, by racial identity (T1-T3) for survey longitudinal cohort



Note: See Table 6 for sample information.

Figure 8: Changes in internship compensation by institution status (T1-T3) for survey longitudinal cohort

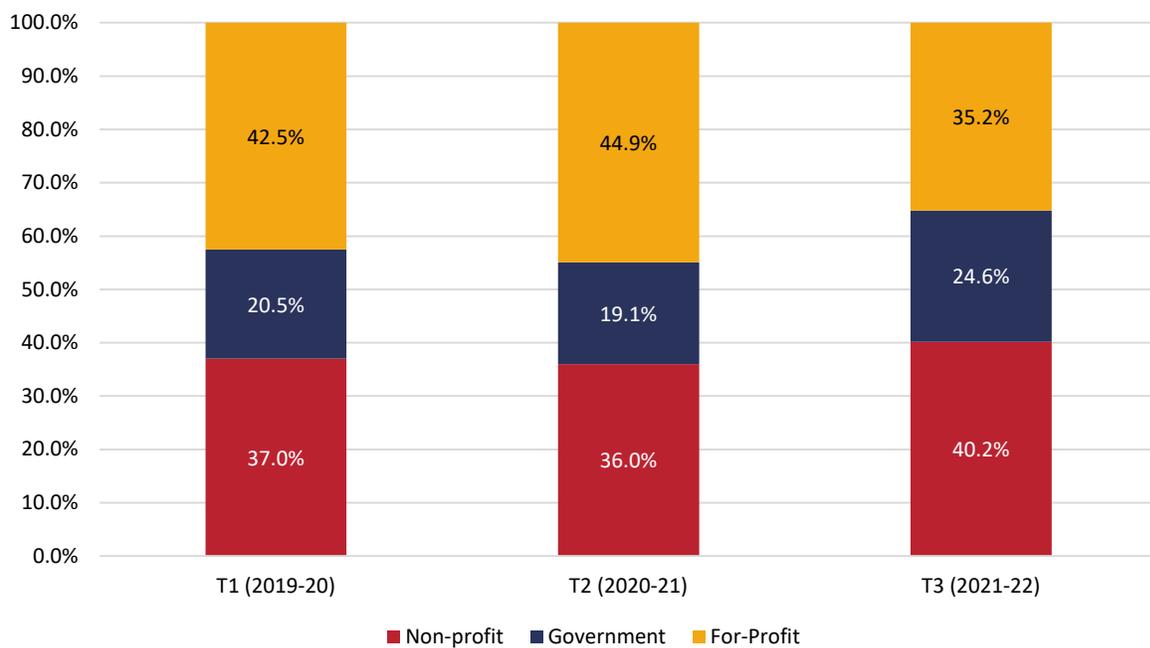


Note: See Table 6 for sample information.

Internships by employer organization type. Another important feature of an internship is the type of host organization: for-profit, non-profit, or government agency. The type of organization is not only correlated with compensation levels, but also has implications for the nature of students' workplace tasks.

The proportion of student participation across these organizational types was relatively stable within our sample. Internships in government were the least common across all time points. At T1 and T2, internships in for-profit organizations were the most common whereas at T3, internships in non-profit organizations were most prevalent (see Figure 9).

Figure 9: Changes in internships by employer organization type over time (T1-T3) for survey longitudinal cohort



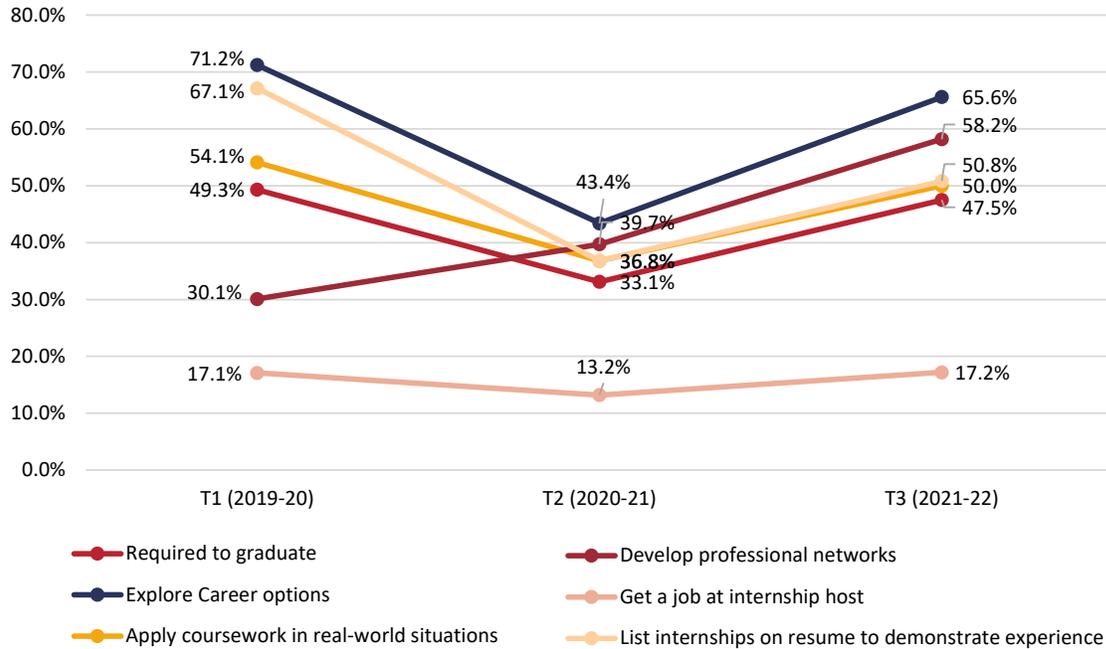
Note: See Table 6 for sample information.

Changes in Reasons for Pursuing an Internship Over Time (Total Sample) - Survey Data

The reasons that students pursue internships are important for postsecondary institutions to understand, as they vary considerably and may suggest different approaches depending on each student's motivations, goals, and intentions.

For the longitudinal cohort, students were asked to identify their reason for participating in an internship at each time point. General trends suggest that a desire to explore career options was high over time whereas few students indicated that they completed an internship as a way to secure a full-time position at the internship site at each time point. Over time, there was an upward trend in students' taking an internship to develop professional networks (ranging from 30.1% in Time 1 to 58.2% in Time 3). Other reasons included: internship completion as a requirement for graduation and wanting to apply course-work to real world situations.

Figure 10: Changes in reasons for participating in internships over time (T1-T3) for survey longitudinal cohort



Note: See Table 6 for sample information.

RQ#2.

What kept some students from taking an internship, and did these obstacles change over time?

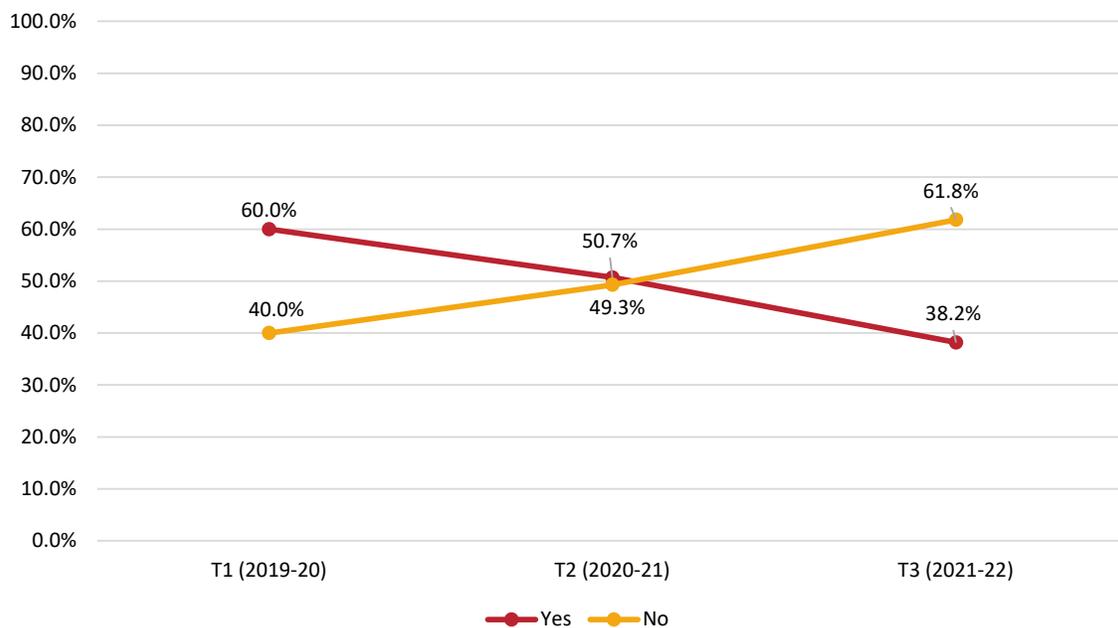
Next, we turn to the issue of obstacles that prevented students from pursuing an internship. Consider that national estimates are that 70% of college students never take an internship, and our own data indicate that in the first three years of the CIS (2018-2020) non-interns comprised 70% of our sample. In 2021 the percentage of non-interns rose to 76% and then to 82% in 2022. Thus, learning more about whether this large group of students even wanted to take an internship and if so, what prevented them from doing so, are critical questions.

In the first three years of our study non-interns comprised 70% of our sample and in 2021 this percentage rose to 76% and then to 82% in 2022. Learning about whether this large group of students ever wanted to take an internship and if so, what prevented them from doing so, are critical questions.

Percentage of Non-interns Interested in Pursuing an Internship

For those students who did not take an internship, we asked if they had in fact wanted to. The percentage of non-interns who wished to take an internship was 64%-65% for the first three years of the study, but this percentage declined precipitously in 2021 to 46% and then 35% in 2022. While the specific reasons behind this decline are not clear, it may be due to respondents graduating and obtaining full employment, in which case they would not need (or want) an internship any longer, or they self-selected out of the internship market for some reason.

Figure 11: Percentage of non-interns who were interested in pursuing an internship, for survey longitudinal cohort



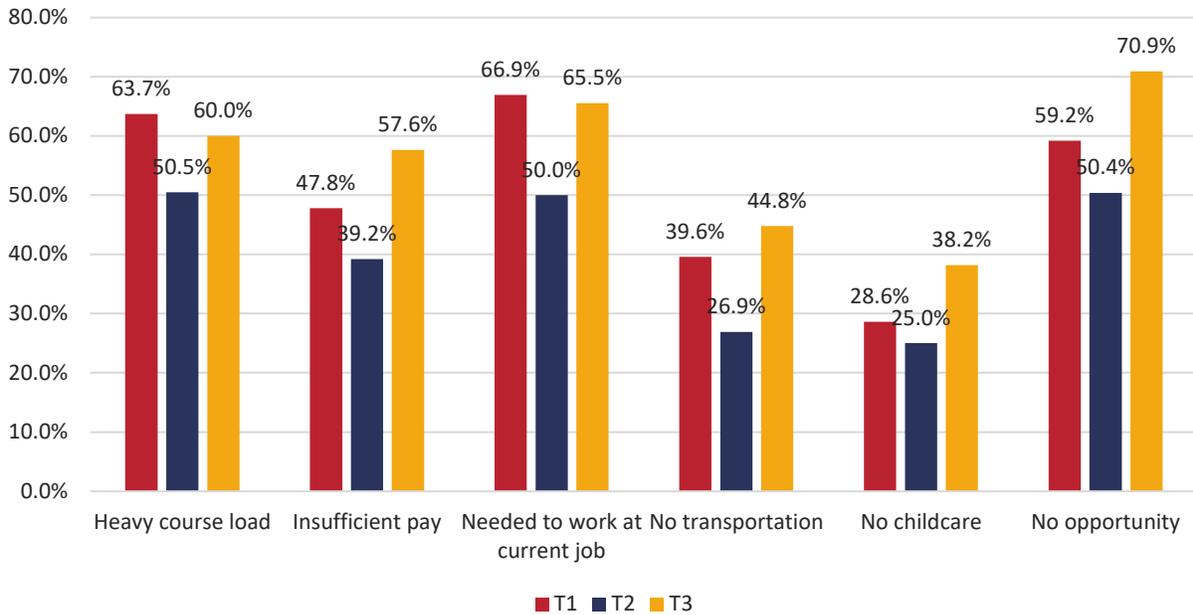
Note: See Table 6 for sample information.

Reasons Why Non-interns Did Not Pursue an Internship

Students who indicated they were interested in participating in an internship but could not participate were then asked to choose their reason(s) for not pursuing internships at each time point (See Figure 12). These data show that the obstacles to internships appeared to grow after the onset of the COVID-19 pandemic, especially the lack of opportunities, which is unsurprising given the large number of internships being cancelled due to lockdown orders and economic uncertainty.

Among the six obstacles included in the survey at T3, 70.9% of non-interns reported that a lack of opportunities was a barrier to internship participation, followed by 65.5% who had to work at a current job, 60.0% with a heavy course load, and 57.6% who felt that internships did not pay enough.

Figure 12: Trends in reasons for not participating in internships (T1-T3) for survey longitudinal cohort



Note: See Table 6 for sample information.

In the T3 survey, students were also invited to share their reasons for not participating in internships via an open-ended text response. The reasons provided in the survey were reviewed and clustered into six themes (see Table 8). Challenges created by the COVID-19 pandemic and lack of internship opportunities and information about how to successfully obtain an internship were the most common clusters that emerged from students' open-text responses in the T3 survey.

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Table 8: Primary reasons for not participating in an internship (open-text response) in 2021-2022 (T3) survey

Theme	# of instances	Illustrative text entries in survey
Challenges created by COVID-19 pandemic	17	<p>“Many internships were cancelled due to the COVID-19 pandemic.”</p> <p>“Covid put a halt on an internship program I had been accepted to.”</p> <p>“Nothing was offered for the online students and it was very disappointing.”</p>
Lack of internship opportunities and information about how to successfully obtain an internship	17	<p>“Internships were very hard for me to find.”</p> <p>“I never really had a mentor or someone who could guide me or tell me about internship opportunities and how they could benefit me.”</p> <p>“The internship was in another city and it was hard to find a place of living in time for start of the internship.”</p> <p>“I tried applying but wasn't selected for any internships.”</p>
Need to prioritize other responsibilities within limited amount of time	8	<p>“Overlapping between time needed to be an internship[sic] and at work/school.”</p> <p>“I had just started a new job at the time I was given the opportunity to complete my dream internship, so I had to turn it down.”</p>
Concerns related to qualifications or requirements	7	<p>“I believe my age was a factor to as why no internships were available.” “Often, citizenship is a requirement. Because of my DACA immigration status, I did not qualify for about 99% of the opportunities.”</p> <p>“Many of the opportunities that I came across required higher qualifications than what I could offer.”</p>
Financial considerations	7	<p>“I have to work full time to pay my bills I cannot do a full time internship if it interferes with my job, I have bills that cannot go unpaid.”</p> <p>“Everything is expensive. I need to pay my bills first then school. There is no way I can internship without money.”</p>
Mental health and personal life concerns	3	<p>“Depression”</p> <p>“There were lots of personal life issues piling up simultaneously.”</p>

Obstacles to Internship Participation - Interview Data

The interview data offer additional insights into these issues of access (or lack thereof) to internship opportunities. Two themes emerged from interview data at T3: (1) the prevalence of unpaid or poorly paid internships, and (2) the lack of internships relevant to a particular occupation or discipline.

Theme #1: The prevalence of unpaid or poorly paid internships. Students' concern over low pay and unpaid internships was cited as an obstacle to internship participation. Financial security was often the top factor considered by students when deciding whether to complete an internship or continue in a paid position. For example, when considering whether to take an internship or work in paid employment, one student explained:

I'd have to, you know, leave my current job which I have a lot of security and good benefits and decent pay. And I'd have to probably take -- I'd probably have to settle for less pay. I would imagine having an internship, they don't tend to pay great. And then I think I'd be without -- I imagine I would be without benefits for a little while. So that's concerning. And I guess I wouldn't make that jump unless I found something that was really exciting to me.

Some students indicated that they had chosen not to consider or apply for internships, on account of inadequate pay. One student said:

The reason why I never really looking [sic] into an internship was because of the fact that I thought that it was going to be unpaid. And as a full time student and also working and paying bills, I was like - I'm not going to be able to afford to do an internship because of that fact. Like, I closed my eyes on a lot of stuff.

Some students who had graduated shared that throughout college they only applied for paid internship and paid employment positions due to financial considerations and in order to “pursue and maintain a certain amount of financial independence.” Another former student described their general belief that unpaid internships are only possible for beginning students given the increasing financial burden associated with getting older. They said:

I remember when I was a freshman in college like several years ago, a lot of them were not paid. ... It's not a waste because you're gaining skills ... but where I am in life right now, like, I kind of need a paid internship because, we're only getting older, we have bills. Well, if I were to do an internship, it would have to be paid.

Overall, students felt very strongly about not opting for low-paid or unpaid internships. One student summed it up in this way, “I would love to, to get that hands-on experience, but not at the risk of my livelihood.”

Theme #2: Concerns over a lack of relevant internship opportunities. Several students shared their perception that few relevant internship opportunities exist, which prevents them from completing an internship. For example, one student explained:

I have seen a lot of opportunities, but I am not interested because it is within my area, electric engineering, but it is not in my concentrations, which is in artificial intelligence, renewable energy, and robotics.

Another student with a human services degree was offered an internship managing accounting procedures, which she declined, “because I mean an internship in accounting has nothing to do with what I'm doing.”

Several students indicated that they would rather wait for an internship opportunity that was relevant, interesting, in their chosen field, and enjoyable than to apply to an internship that did not meet their criteria. One student reported accepting a (local, paid) internship outside their specific field, but being unwilling to move locations for such an internship, to do it unpaid, or to complete a subsequent internship outside of their field of interest. They explained:

We don't have a lot of the stuff that I'm looking for. I want to work with structural geology of the mine or something like that. So I would've accepted an internship in the geology field, specifically fieldwork, I would've moved. I would've changed area codes. I would've changed my entire life again to suit this.

Key Findings #2: Student Experience and Program Quality



In our next set of results, we turn to the impacts of the COVID-19 pandemic on students' internship, academic, professional, and personal plans (Research Question #3). Then, we discuss experiences that students who successfully found and completed an internship actually had in their placements (Research Question #4). Next, we report student satisfaction rates with their internships over time (Research Question #5). The questions posed in our survey and interviews focused on impacts of the internship on students' lives and future plans, and also features of the program itself that are linked to quality indicators in the Internship Scorecard.

RQ#3. What was the impact of the COVID-19 pandemic on students' academic, professional, and personal plans?

Next, we turn to what is perhaps the most unique feature of the dataset collected as part of the College Internship Study – the effects of the COVID-19 pandemic on students' lives. For the eight institutions whose students' survey and interview data are featured in this report, Time 1 data were collected at three points in time - Spring 2019 (2 institutions), Fall 2019 (2 institutions), or Spring 2020 (3 institutions). Thus,

the survey and interview data collected from four institutions captured students' academic, professional, and personal plans in a pre-pandemic phase, followed by a second and third wave of data collection where their lives were increasingly affected by the (mostly negative) impacts of the COVID-19 pandemic on their coursework, personal lives, and career plans.

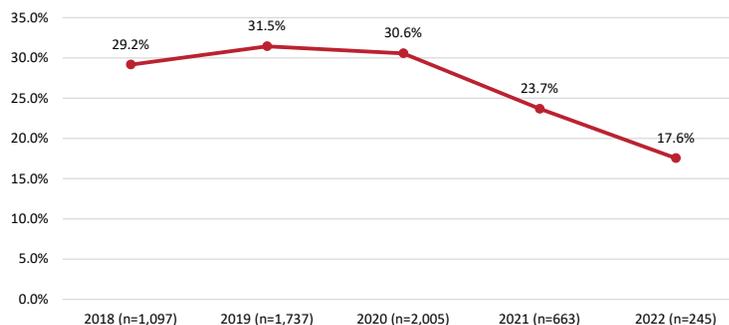
First, we discuss two findings from survey data over time that illustrate changes in internship participation rates and rates of paid versus unpaid internship completion. Next, we share findings from T3 survey data (n=554) and interviews (n=58) at T3 that illustrate ways that the COVID-19 pandemic impacted students' lives. Findings from the T3 interviews (n=58) are reported to give more nuanced and detailed accounts into the nature of these impacts than is available from survey data.

Impact of Pandemic on Internship Participation Rates and Rates of Unpaid Internships - Survey Data

While it may be too soon to determine the precise impacts of the COVID-19 pandemic on the internship labor market, our data do suggest two trends that were corroborated by some media reports and early research. First, as noted in the first section of this report, there was a noticeable decrease in internship participation since 2020 which coincides with the onset of the COVID-19 pandemic. Although this may be due to students graduating as time passed, our data are also consistent with other studies that showed declines in internship participation during the COVID-19 pandemic (Teng et al., 2021), and media accounts of widespread internship cancellations.

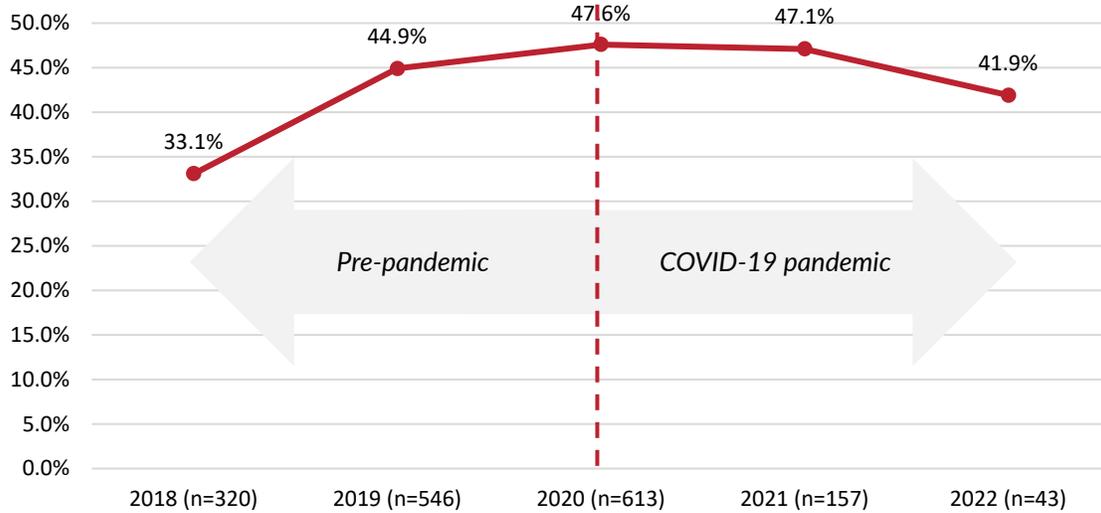
To illustrate internship participation trends over time on an annual basis, Figure 13 includes data from our entire CIS dataset between 2018 and 2022. These data reflect all of the institutions in Table 6, which includes a much larger sample of students (n=~1,097 per year; 5,747 responses in total) than in our longitudinal T3 cohort (n=554).

Figure 13: Changes in internship participation over time (2018-2022) for entire CIS sample



In addition, our data suggest that the proportion of students who completed unpaid internships (as compared to paid internships) increased between 2018 and 2020, and showed a slight decrease after 2020. This might be caused by other factors and sample differences, but these data support the findings of recent reports that online internships became increasingly common during the COVID-19 pandemic, and higher proportions of such positions are unpaid (Hora et al., 2021; Teng et al., 2021).

Figure 14: Changes in the number of students completing unpaid internships over time (2018-2022) for entire CIS sample



Impact of Pandemic on Students’ Lives and Careers – Survey Data

While changing a survey mid-study is typically avoided at all costs, the COVID-19 pandemic was such a disruptive force that our team decided to add a question to the Time 3 survey. It was an open-response text-based question meaning that students could write in their own unique replies to the prompt, which was: “At the present time, the COVID-19 pandemic is disrupting many features of higher education. Can you provide a brief summary of the ways, if any, that the COVID-19 pandemic is affecting your career plans and goals?”

We took students’ text entries and identified key words and short phrases in them to generate a Word Cloud that provides a snapshot of how the COVID-19 pandemic affected their career plans (See Figure 15).

Figure 15: Word cloud: Impact of Covid-19 on career plans and goals (T3)



Impact of Pandemic on Students' Lives, Careers, and Academics - Interview Data

In this section we report themes from the T3 interview data related to the impacts of the COVID-19 pandemic on students' lives, careers, and academics. The COVID-19 pandemic impacted nearly every aspect of students' lives, and while some did report that these impacts were negligible or even positive, most interviewees discussed negative impacts from the COVID-19 pandemic.

Five themes emerged from the data and are listed in order of the frequency with which they were reported across the sample:

1. The COVID-19 pandemic had a general, negative impact on the internship labor market;
2. Online internships were of poor quality;
3. The COVID-19 pandemic impacted academics;
4. The COVID-19 pandemic impacted personal lives; and
5. Students drew upon a variety of support systems to cope with the impacts of the COVID-19 pandemic.

Theme #1: The COVID-19 pandemic had a general, negative impact on the internship market. Many students interviewed at Time 3 reported that the COVID-19 pandemic had negative impacts on the internship labor market. These negative effects included the cancellation of previously advertised internship opportunities, the retraction of internship offers, a noticeable decrease of postings for internship opportunities, and a perception of increased competitiveness for fewer available opportunities. As one participant characterized the mid-pandemic internship market, "I feel like there could have been way more opportunities, but a lot of internships got held up because of the COVID-19 pandemic." Another student elaborated further on the COVID-19 pandemic's impact on the internship market:

I know many internships were canceled that year, and many were hoping that the next summer would be better. I know some still (did) happen but there were a couple here and there that were postponed again. So, then I was like you wouldn't know if your program will still happen or it would just not because of the COVID-19 pandemic so I guess that's why many people just decided to not apply.

The cancellation of many internships and the difficulty in obtaining a scarce position also had some unanticipated side effects, leading some students to make career changes as a result. One student opted to go to graduate school because of his inability to obtain an internship, which was seen as essential to increase his competitiveness in the labor market:

Since I couldn't get my internship it was very hard to get a job during the COVID-19 pandemic. I said, OK I will take advantage of my time. I will keep studying. I will pursue a PhD.

Overall, students expressed that the COVID-19 pandemic negatively impacted their motivation to pursue an internship, as cancelled positions and intense competition made them seem out of reach and unattainable.

Theme #2: Poor quality of online internships. For those students who had an internship during the COVID-19 pandemic, several reported that the quality of their internship experience was diminished because

they were held online and with what was perceived to be limited planning and organization. Students perceived a decrease in the quality and amount of supervision, mentorship, feedback, and opportunities to socialize with colleagues in virtual internship settings. For example, a common sentiment among students was that the COVID-19 pandemic prevented them from getting “the full experience of an internship” as it limited face-to-face interactions and other on-site experiences that create a fruitful internship experience and professional socialization. One participant explained how the transition to an online internship led to diminished “leadership” from supervisors and others:

Because of COVID (everyone is) at home. You know, people are at home. So how beneficial could an internship be at home, when I'm at home, basically working from home, and I'm not getting that leadership [i.e., supervision and mentorship].

For some students, the online setting had some clear, negative impacts on students' ability to complete the work itself. In one case, an intern was not able to work directly with clients when her internship shifted online because the public health department “had concerns about I think data privacy and security, and they didn't have the logistics plan at the time where people could securely work from home.” Another student discussed how the online setting of her internship, along with bureaucratic issues caused by the COVID-19 pandemic, diminished and slowed the process of obtaining qualifications so that she could interact with clients.

While most participants expressed concerns about the quality of their online internships, some noted positive aspects of this pandemic-caused shift. These benefits included increased flexibility (and limited travel time and expense) required to complete online internships. One participant shared that the challenges of her online internship required her to “learn how to adapt and make changes” in a workplace setting.

Theme #3: Impact of COVID-19 Pandemic on students' academics. Several students shared ways that their academic pursuits outside of internships had been affected by the COVID-19 pandemic. The nationwide closures of colleges and universities impacted the nature (and quality) of classroom learning, lab work, and involvement in student organizations on campus as learning online became the new normal. For some students, the shift to online learning was challenging. For example, a student for whom English is their second language said:

For me, my last semester was extremely, extremely difficult. It was a writing class, and I know I keep saying this, but as an English language learner myself, you know, there's a lot of areas (where) I'm not so strong in, and writing is one of the big ones. So being virtually online and working full-time was so difficult.

Learning online also posed challenges for students “who needed more hands-on” learning and believe “that classroom feel” is conducive to their learning style. As well, online learning was cited as particularly difficult by one student whose program had changed as a result of the COVID-19 pandemic. They shared:

I'm alright with saying that it's been very, very grueling because of COVID-19. They have made these programs accelerated, and I am mentally handicapped so an accelerated program in translation to me means that I have to gather all the information ahead of time and get work in, get my work done before everyone else because of understanding it and trying to deal with getting what they want done the way they want it.

A few students reported that their overall academic trajectory was impacted significantly by the COVID-19 pandemic. For example, one student reported being unable to sign up for required exams, which ultimately led to a two-year setback and change of major. They said:

Because of the COVID-19 pandemic, I was unable to complete my degree in a timely fashion. And the easiest solution to that was just to switch to an interdisciplinary degree within just completing a certain amount of genetics, fine arts, humanities, science, and upper-level courses.

Students in our T3 sample also mentioned positive impacts on their academic experiences. For example, students reported that they saved time and money because they did not have to commute to class. Some students also noted that their professors accorded additional flexibility on due dates, assignments, and grading.

Theme #4: Impact of COVID-19 pandemic on students' personal lives. Students at T3 described the ways that the COVID-19 pandemic affected their personal lives. Many reported spending a great amount of time at home and several students described experiencing social isolation and psychological distress. Students shared a variety of affective and emotional reactions, including feelings of loneliness and fear. One student described their experience in this way:

My employment was disrupted at COVID shutdown. I mean, our facility was not essential. We were shut down for three months. I mean, I lost all my wages for months. And I wasn't qualified for any of the COVID money at the time. My entire life, yes, I stayed inside for two weeks ... when COVID happened. And then after that I wouldn't leave for weeks on end.

Several students described ways in which the COVID-19 pandemic created financial distress for them and their families. Some students shared complications related to living at home and/or caring for family members. One student who is a parent shared this story:

I'm still playing catch up. I'm really, really just at my breaking point, I guess I should say. So, I had to take a break from school because of my living situation. And now that it's easing up a bit, now we got another problem in the City of [redacted], the housing, the rent rates are so high. My kids may never leave my house. My house is too small. You know, they got to find somewhere to go. But how are they going to find somewhere to go? Daycares are not open like they were where we could go to work because even some of the girls at my job, they're coming in late at like six o'clock. Daycares don't open until six. Well, how can you be open at six if the job starts at four? Or if your kid is at daycare, and they cough, you got to come get them. They might have COVID. For Christ sake, they were coughing before COVID.

By T3, a few students reflected on some of the ways they used the challenges elicited by the COVID-19 pandemic to self-reflect, make changes to their lives, and develop new experiences. One student said:

Definitely moving to a city mid-pandemic, and really just getting the ability to have that clean slate. You don't know anybody in the area, no one knows you. That was really a huge benefit to my mental health. And just my whole identity in general. It was awesome. Again, I was, I was really forced to adapt and be accommodating to ever-changing situations.

Several students believed that their experiences over the COVID-19 pandemic had led them to become more appreciative of what they have (e.g., housing, health). Some reported using the extra time created by shutdowns and the switch to virtual learning to engage in self-reflection. One student, for example, “slowed down and re-evaluated” their life. Another student shared:

And so, just I've been slowing down and I've just been spending more time with my family. I still live with my family and I was forced to sit. You know what I mean? And then also, I'm looking in the mirror like, "Hm, I should probably start eating different. I should probably start working out, like." And just it really forced me to sit and evaluate it. Before COVID I was moving around. I'm an engineer student. I'm a mom. I'm doing so many things. So, I didn't take that time to really sit down and think about, "Am I happy? Or do I like this?" Or as far as anxiety, depression, I don't really have time to address these issues because I'm on the move. I'm working 5:00 in the morning. I'm doing this. I'm doing that. So, now once COVID stopped and everything was shut down, I was definitely able to re-evaluate some things. And I'm happy it happened.

Theme #5: Support systems that students drew upon to manage the impact of the COVID-19 Pandemic.

Finally, students shared the various support systems that they relied upon during the COVID-19 pandemic to cope with academic, financial, mental health, and social connectedness challenges elicited by the COVID-19 pandemic. These included:

- **Emergency funds and grants:** Many students described accessing needed emergency funds and grants, largely provided by their colleges or universities, to support themselves financially during the COVID-19 pandemic.
- **Spirituality:** Some students described praying, joining or relying on their local or hometown religious community, or exploring religion for the first time during the COVID-19 pandemic. One student said, “[I’d] pray that God get me, like, He would get me through every situation I was going through.”
- **Self-care:** Students reported relying on self-care strategies, such as exercise, spending time outdoors, meditation, and cultivating gratitude and positivity to cope with stress.
- **Social connectedness:** Students discussed relying on the financial and emotional support from close social relations such as parents, spouses or intimate partners, friends and roommates, and mentors.
- **Institutional flexibility and support:** Several students appreciated their professors’ increased flexibility, caring, helpfulness, understanding, and support during this stressful time. As one student explained, “Our professors were very effective and very helpful;” and another student stated, “All my professors would make sure that I was okay.”



How did students who completed internships rate key indicators of internship program quality?

Next, we turn to student experiences with features of internship programs that are indicators of program quality. Three of the most important indicators are the nature of workplace tasks, supervisors’ support, and

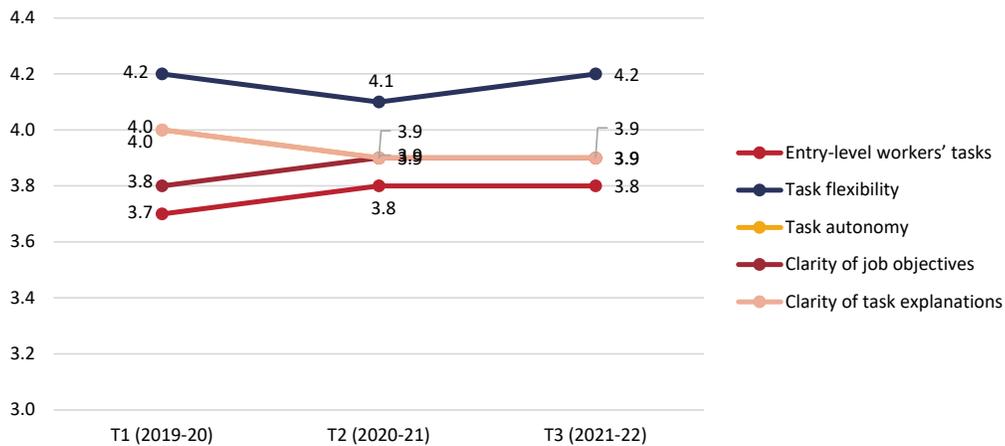
supervisors' mentoring. We report how student experiences on these points have changed over time and how they varied by student race/ethnicity and MSI status.

Changes in Internship Program Quality Indicators Over Time – Survey Data

Workplace Tasks. The nature of the workplace tasks student interns are asked to perform is one of the defining features of internship quality. Ambiguously designed tasks lacking clarity of objectives or explanations reflect a poorly designed experience, while tasks similar to those assigned to entry-level workers, and with a high degree of autonomy and flexibility, reflect a well-designed experience (see Hora et al., 2021). Thus, in our study we measure five key indicators of internship program quality related to workplace tasks: task ambiguity (clarity of task objectives, clarity of task explanations), similarity to entry-level workers' tasks, task autonomy and task flexibility.

As depicted in Figure 14, students who had completed an internship in our study reported a high degree of task flexibility on average over time, and these ratings didn't change noticeably throughout the study. In addition, task autonomy and clarity in task objectives and explanations generally scored mid-to-high (average 3.9-4.0), indicating above average quality on these indicators. However, the data suggest that intern tasks were not perceived by interns to be similar to tasks handled by entry-level employees across time points. This is a concerning finding, given that studies have pointed out that internships are often used as a mean to relegate unimportant and non-professional clerical tasks to 'lower-cost' workers (Garcia, 2009; Shade & Jacobson, 2015).

Figure 16: Changes in students' perceptions on internship task quality (T1-T3) for survey longitudinal cohort



Note: Survey questions asked students to rate each item on a 1-5 scale, with higher scores indicating a higher rating of the quality, degree, or extent of each item. See Table 4 for sample information.

We next examined whether indicators of task quality varied by students' race/ethnicity (Figure 17) and MSI status (Figure 18). Our data suggest that task quality did not vary substantially by racial/ethnic group. Students generally rated each indicator an average of 3.7-4.2, regardless of their race/ethnicity. Task quality scores also did not vary substantially by MSI status, though HSI students rated their internship tasks slightly higher across all indicators as compared to students attending HBCUs or PWIs.

Figure 17: Student perceptions of internship task quality averaged across all time points, by race/ethnicity for survey longitudinal cohort

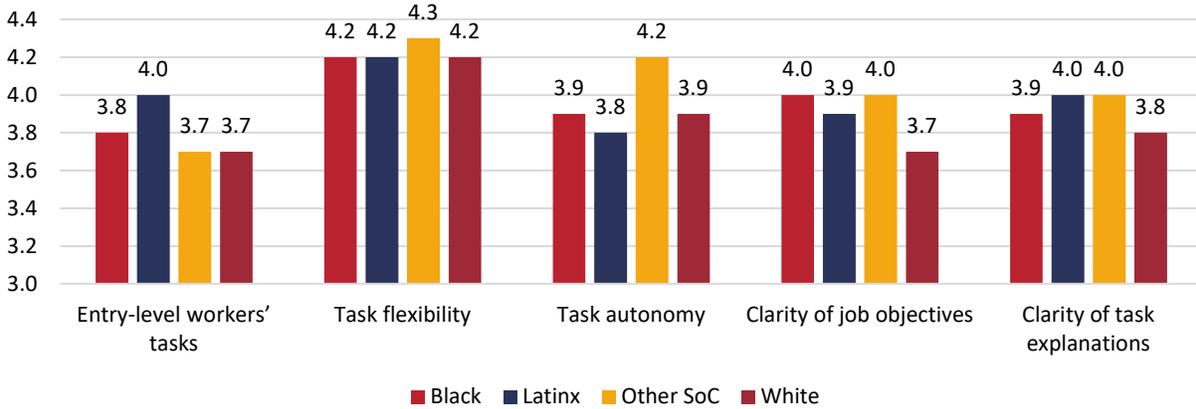
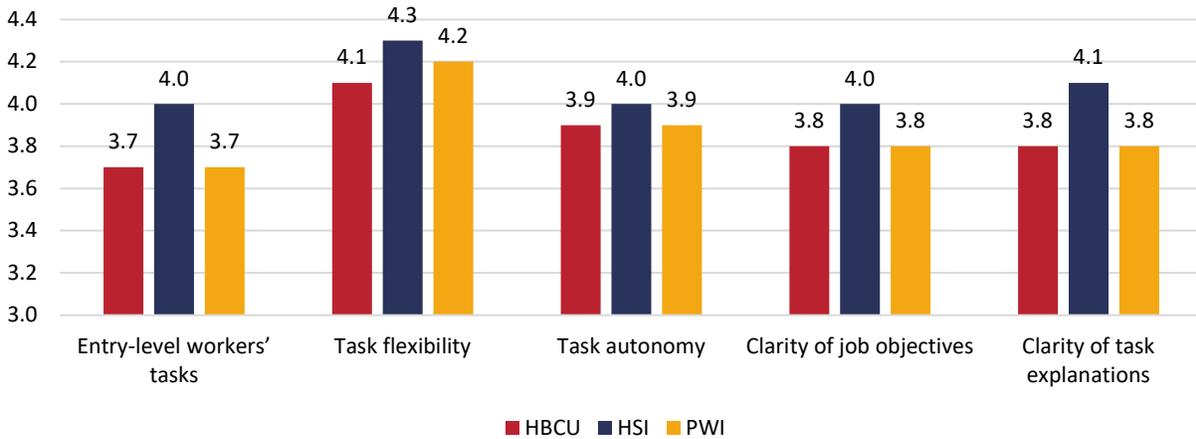


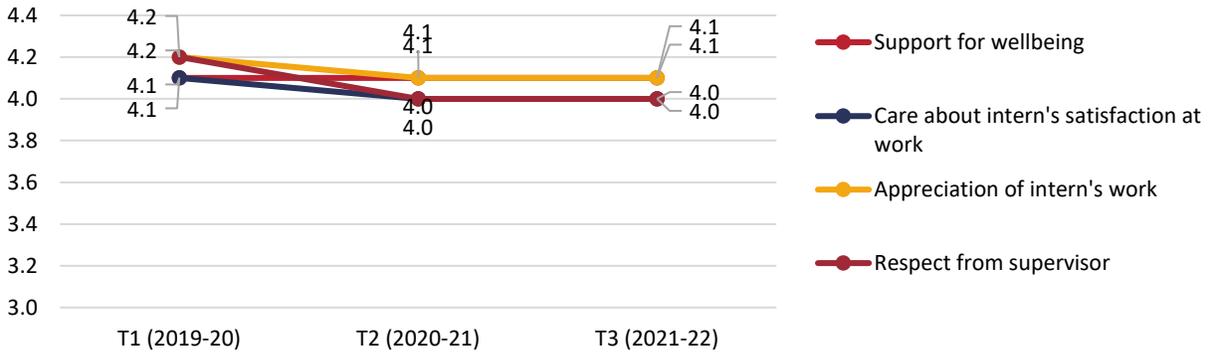
Figure 18: Student perceptions of internship task quality averaged across all time points, by MSI status for survey longitudinal cohort



Supervisor Support. Interns' experience with their supervisors is one of the most important indicators of intern satisfaction and program quality (McHugh, 2017). We measured the degree to which a supervisor provided on-the-job support (e.g., caring about their well-being) and how well they mentored the student (e.g., provided feedback on specific tasks).

Students' ratings of internship supervisor support were steady throughout the study (Figure 19), and students generally considered their internship supervisors' to be quite supportive (average 4.0-4.2) across time points.

Figure 19: Changes in students' perception of internship supervisor support (T1-T3) for survey longitudinal cohort



We next examined whether perceptions of supervisor support varied by students' race/ethnicity (Figure 20) and MSI status (Figure 21). No substantial differences were noted among racial/ethnic groups or institutions.

Figure 20: Students' perception on internship supervisor support averaged across all time points, by race/ethnicity for survey longitudinal cohort

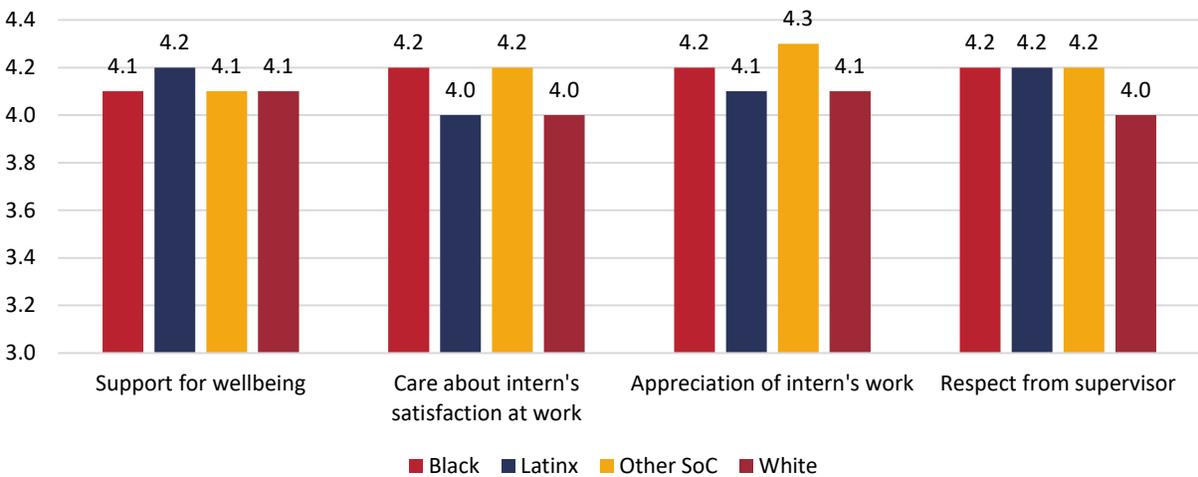
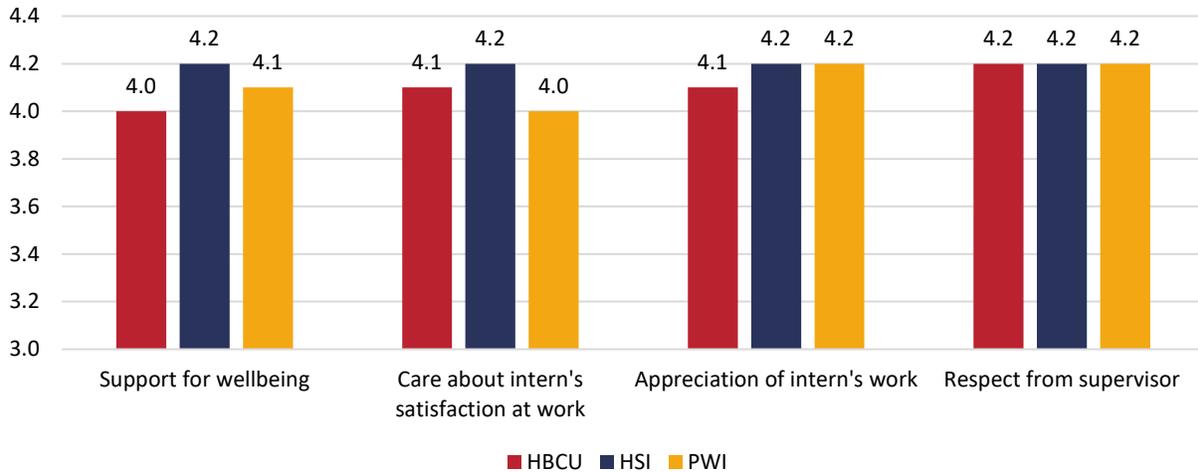


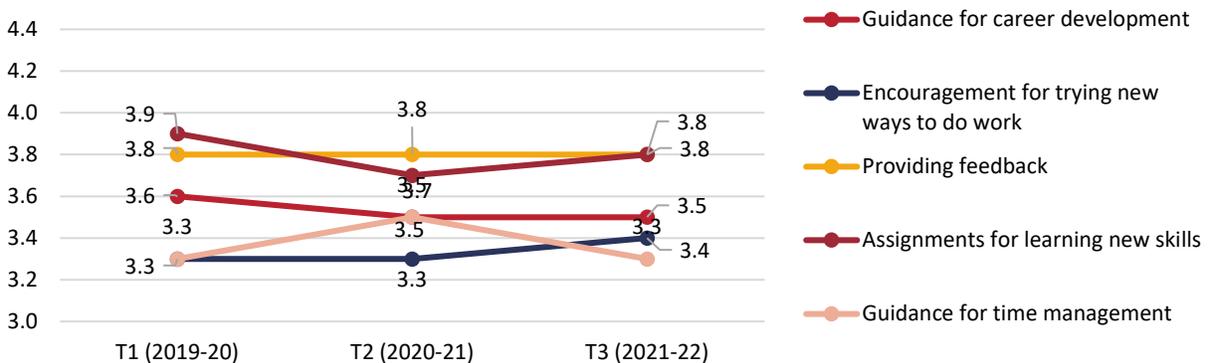
Figure 21: Students' perception on internship supervisor support averaged across all time points, by MSI-status for survey longitudinal cohort



Supervisor Mentoring. We measured the degree to which interns perceived their supervisors to provide mentoring across four specific behaviors: guidance for career development, encouragement for trying new ways to do work, providing feedback, guidance for time management, and assignments for learning new skills.

Students' perceptions of internship supervisors' mentoring varied across the four specific behaviors. Students generally reported being quite satisfied with their supervisors' feedback and how they provide assignments for learning new skills at the internship site (average 3.7-3.9). However, students perception of their internship supervisors' guidance for career development, encouragement for trying new ways to do work, and guidance for time management were that these supervisory behaviors did not occur on a regular basis.

Figure 22: Changes in students' perception of internship supervisor mentoring (T1-T3) for survey longitudinal cohort



We next examined whether perceptions of supervisor mentoring varied by students' race/ethnicity (Figure 23) and MSI status (Figure 24). Results indicated that white students and students attending PWIs consistently reported lower ratings across all items as compared to Black, Latinx, and other students of color and students attending HBCUs and HSIs, respectively.

Figure 23: Changes in students' perception on internship supervisor mentoring averaged across all time points, by race/ethnicity for survey longitudinal cohort

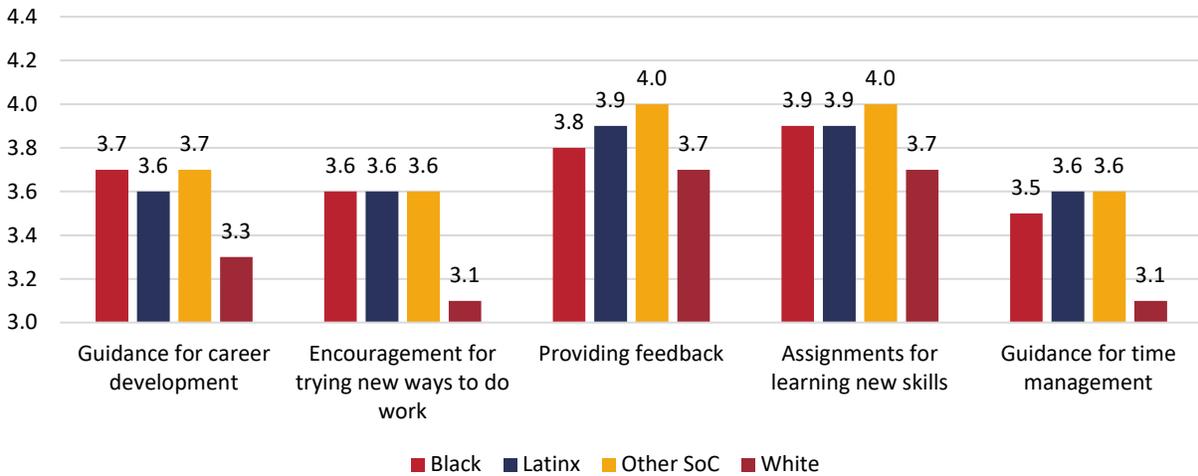
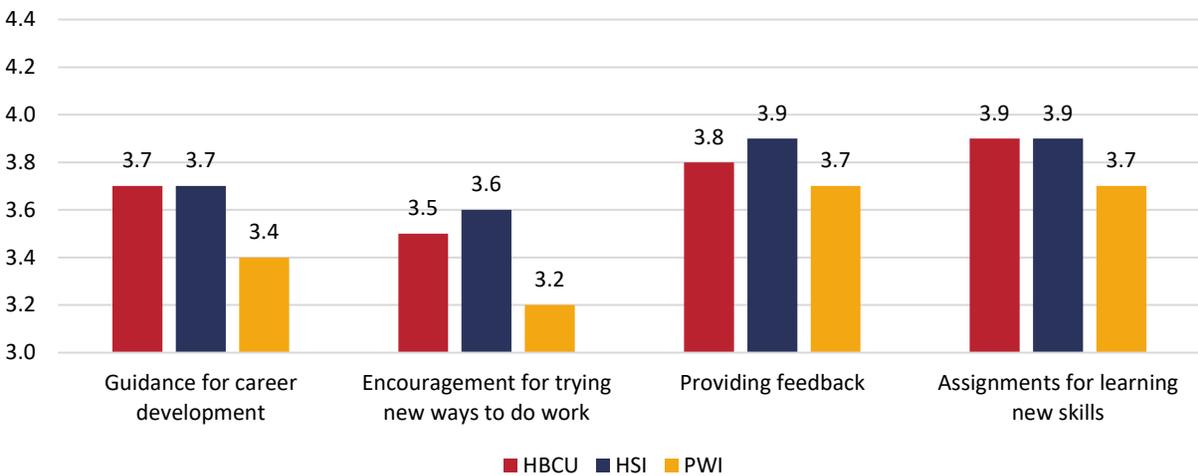


Figure 24: Changes in students' perception on internship supervisor mentoring averaged across all time points, by MSI status for survey longitudinal cohort





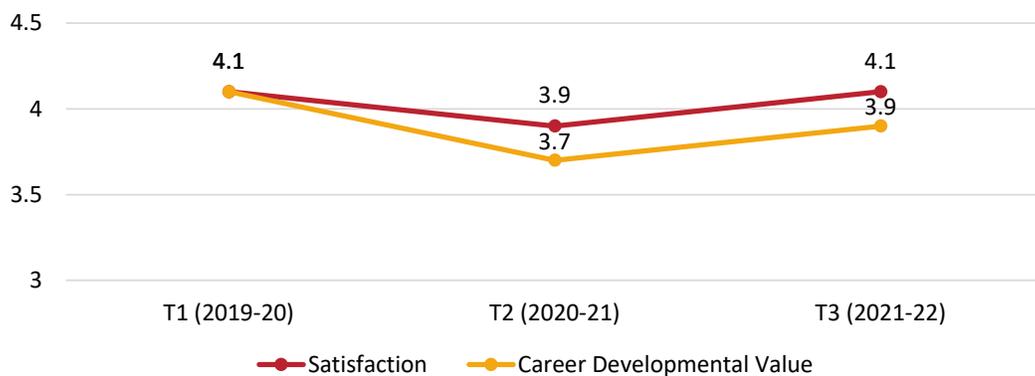
How satisfied (or not) were students with their internship experiences, and did this change over time?

In measuring students’ satisfaction with their internships, researchers have developed metrics to capture how well students feel the experience contributed to their career development. In this section, we report data on basic satisfaction with the internship and also how much the experience contributed to their career goals and future trajectories.

Changes in Student Satisfaction and Contributions to Career Development Over Time

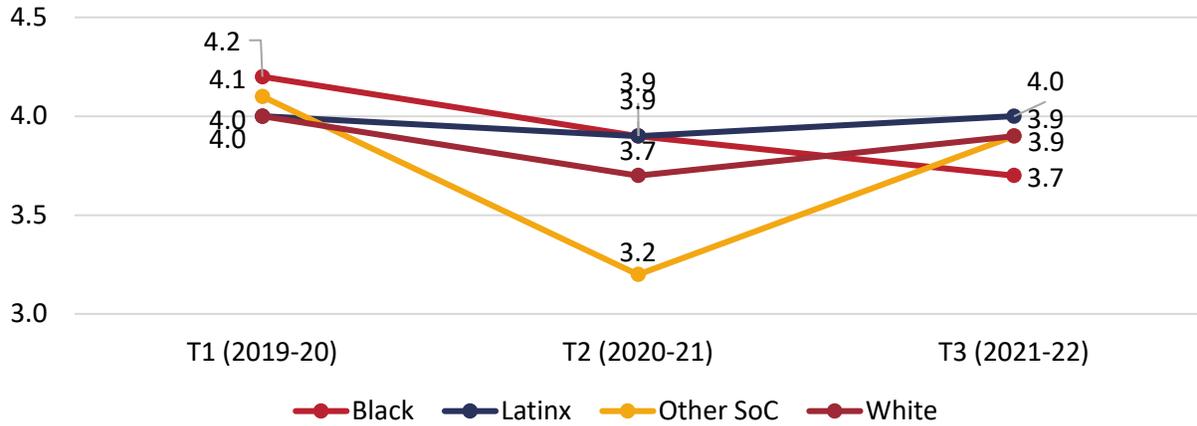
Our data indicate that students consistently rated their internship experience as very satisfactory (3.9 - 4.1) and as having a relatively high degree of career developmental value (3.7 -4.0) over time. However, there was a slight decrease in both indicators in Time 2. This may have been caused by internships being unexpectedly switched into remote or hybrid positions during the early period of the COVID-19 pandemic (Teng et al., 2021). Recent reports have suggested that such abrupt changes in internship modality may have created less structured and supervised experiences for students, which could be one of the reasons for slightly lower ratings. However, descriptive statistics alone are limited for fully explaining the phenomenon, and additional research will be needed to better understand this result.

Figure 25: Changes in students’ satisfaction with their internships and assessment of its contribution to their career development (T1-T3) for survey longitudinal cohort



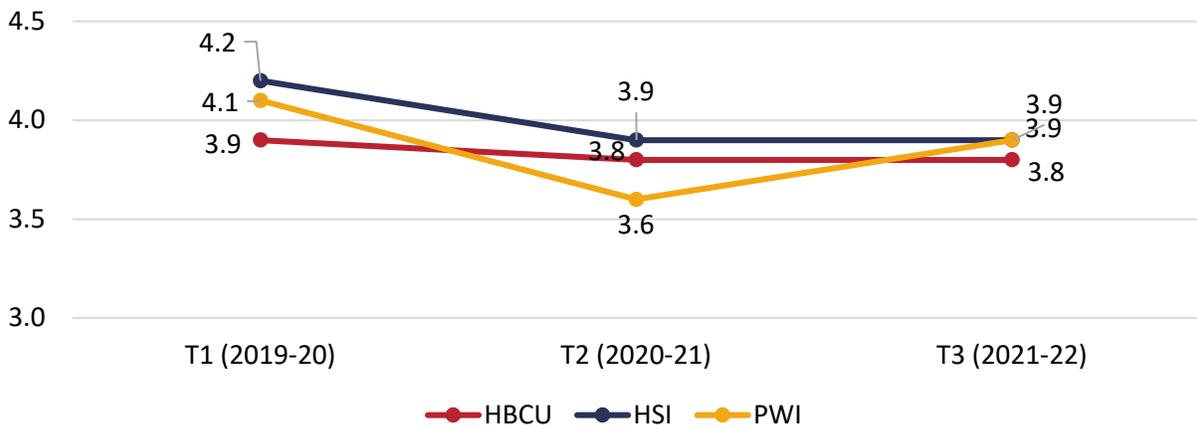
We next examined whether satisfaction ratings varied by students’ race/ethnicity (Figure 26) and MSI status (Figure 27). Results show that students had similar rates of internship satisfaction at Times 1 (4.0 – 4.2) and 3 (3.7 – 4.0), but white students at T2 reported lower rates of satisfaction with their internships (3.2) as compared to students of color, Black students, and Latinx students (3.7-3.9). With regard to institution type, results suggest that satisfaction ratings varied over time, with students attending HBCUs reporting slightly lower satisfaction ratings at T1 and T3, and students attending PWIs reporting slightly lower satisfaction ratings at T2.

Figure 26: Changes in students' internship satisfaction, by race/ethnicity (T1-T3) for survey longitudinal cohort



With respect to differences by MSI-status, students at HBCUs generally reported lower satisfaction compared to students attending a HSI or PWI. These results suggest that internship satisfaction varies by students' race/ethnicity and institutional affiliation.

Figure 27: Changes in students' internship satisfaction, by institution type (T1-T3) for survey longitudinal cohort



Key Findings #3: Social, Emotional, and Economic Outcomes



In this final section of the report, we focus on the longitudinal impact of internship experiences on students' social, emotional, and economic outcomes over time (Research Question #6). The impacts of internships on various facets of students' lives are of course one of the reasons these programs are attracting so much attention, and in reporting both economic and non-economic outcomes, we highlight the prospect that internships can impact varied aspects of students' futures.



What were the long-term impacts on students' labor market outcomes, psychosocial, and personal lives?

Impact of Internship Participation on Students' Labor Market Outcomes - Survey Data

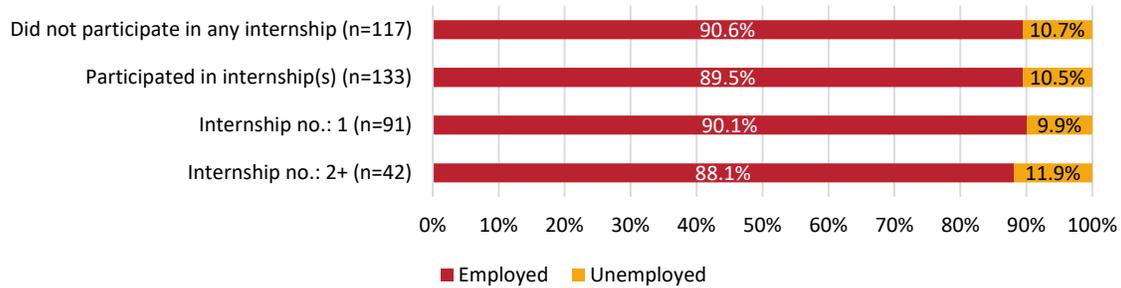
To assess the impacts of an internship on students' post-graduate outcomes in the workforce, we asked about their post-graduate decisions, current employment status, how long it took them to find a job, and the degree of alignment between their major and their current job.

Post-graduate trajectories. First, we investigated factors associated with students' post-graduate decisions and employment status, using multiple logistic regressions (see Appendices 1-2 for details). At T3, we found that among college graduates in our study across all institutions (n=337), students with an internship experience were almost three times more likely to enroll in graduate schools rather than participating in the labor market (Appendix 1). This finding should be examined in greater depth in future research.

Employment status and internship participation. We also analyzed data from respondents at T3 who had recently graduated and did not enroll in graduate programs (n=257) to understand whether internship participation was associated with their current employment status as employed or unemployed (missing=7; Figure 28). The results indicate that there is not a noticeable difference in employment status between students who participated in internships (89.5% employed) and those who did not take an internship during college

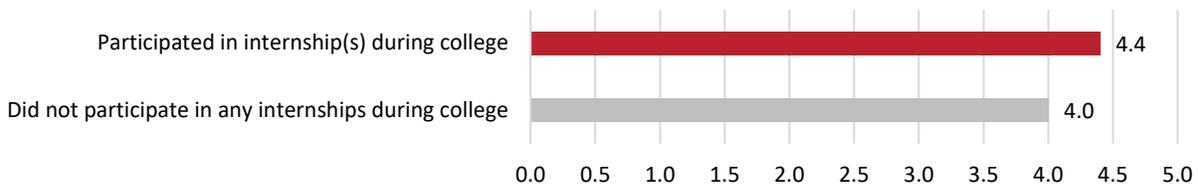
(90.6% employed). In addition, we examined whether multiple internship experiences related to students' employment outcomes. Results suggest that experiencing two or more internships does not have a significant influence on students' employment status. For instance, 90.1% of students who participated in one internship were employed, and 88.1% who participated in two or more internships were employed at T3.

Figure 28: Employment status (2021-2022: Time 3) by internship participation status of recent graduates



Time of job search by internship participation status. We also asked recent graduates who were currently employed (n=231) how many months it took for them to find their first job, which is a common measure of colleges' success in helping their students obtain employment (missing=8; Figure 29). In this sample, students who participated in at least one internship spent slightly more time finding a job (4.4 months) as compared to students who did not have any internship experience (4.0 months).

Figure 29: Average job search months by college internship participation among employed students at T3



Note: See Table 9 for sample information.

Between-group differences in time to first job, however, provides more insights into this finding, suggesting variations by race/ethnicity, gender, and first-generation college student status (see Table 9). For instance, male students who did not have an internship spent less time job searching on average (3.7 months) as compared to their female counterparts (4.4 months). In contrast, female students who had an internship spent less time on average (4.2 months) than their male counterparts (4.7 months).

Differences by race/ethnicity were also apparent, with Asian (3.1-3.7 months), Black (7.6-7.9 months), and Hispanic (3.9-6.0 months) graduates generally spent more time searching for jobs than white students (3.0-3.1 months) regardless of their internship experience. Further, the evidence suggests that students of color (SoCs) who had an internship experience spent more time job searching on average (5.5 months) than SoCs who did not have an internship (5.4 months). In contrast, for white students average job search time decreased when participating in internships. Finally, first-generation college students spent more time (4.4-4.6 months) searching for jobs than continuing-generation students (3.6-4.4 months), and no internship experience was associated with longer job search months for both groups.

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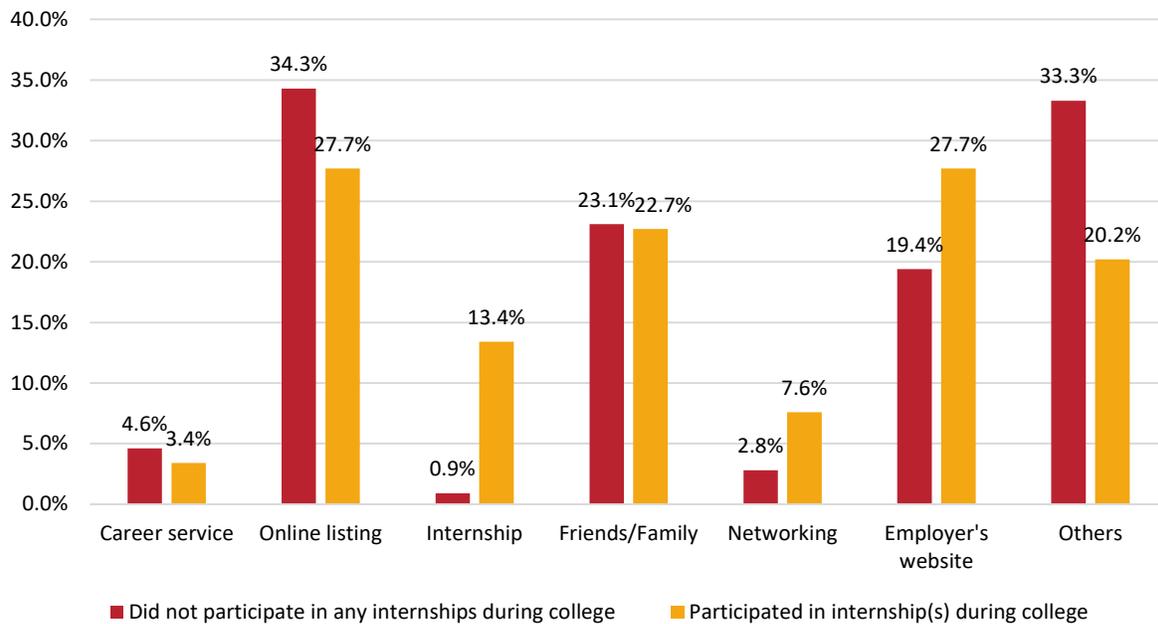
Table 9: Mean job search months by college internship participation, by individual & institutional characteristics (2021-2022: T3) for employed students

	Did not participate in any internships during college (n=120)		Participated in internship(s) during college (n=111)	
	Mean	SD	Mean	SD
Total	4.04	7.24	4.35	7.12
Gender				
Female	4.36	7.75	4.24	6.69
Male	3.70	6.69	4.68	8.21
Another gender identity	1.50	2.12	2.00	N/A
Race				
American Indian/Alaskan Native	0.00	N/A	N/A	N/A
Asian or Asian-American	3.11	3.86	3.67	3.79
Black or African American	7.57	1.66	7.88	11.07
Hispanic, Latinx, or Chicano/a	3.88	4.47	6.00	8.46
Native Hawaiian/Pacific Islander	N/A	N/A	N/A	N/A
White	3.09	6.85	2.99	4.63
Two or more races/Ethnicities	0.00	3.59	2.50	4.46
Others	0.00	0.00	2.33	1.53
First-Generation Status				
First-generation college students	4.62	8.18	4.38	7.85
Continuing-generation college students	3.58	6.43	4.34	6.64
Major				
STEM	5.46	8.18	4.19	8.00
Business	3.85	7.81	3.34	5.05
Arts & Humanities	2.78	4.49	9.00	11.66
Social Sciences	2.16	3.95	3.39	4.41
Other majors	5.35	9.07	4.67	7.32
Institution Type				
HBCU	6.03	10.48	5.27	5.72
HSI	3.52	3.98	7.05	8.00
PWI	2.88	5.08	3.38	7.11

Job search methods by internship participation status. Next, we report findings about the job search methods used by respondents who graduated from college and are employed in T3 (n=231) for their current job, which some scholars consider to be an important metric regarding the most influential pathways to work (e.g., networks, career services, internships). The most popular job searching methods for students with and without an internship experience were online listings, information or referral from friends or family members, and checking employer’s websites. It is notable that career service centers were among the least popular venue for job seekers. The evidence also suggests that 13.4% of students with internship experiences report-

ed that they found their current positions through their internships, indicating a not insignificant number of students getting their first post-graduate jobs via their internship.

Figure 30: Job search methods by college internship participation (2021-2022: T3) for survey longitudinal cohort



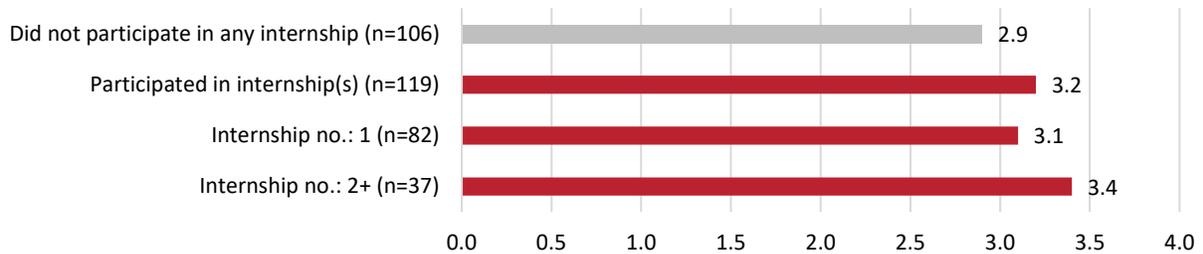
Note: See Table 9 for sample information.

Perceived relationship between current job and field of study in college. We next asked employed graduates how well (or not) their current position is related to the field they studied in college. For some analysts, alignment between students' majors and their first job is a desirable goal, and an indicator that the academic program produced job-ready graduates. Skeptics of this perspective, however, argue that some disciplines (e.g., biology, history) are not easily linked to specific occupations and send graduates into a myriad of fields and professions.

The most popular job searching methods for students with and without an internship experience were online listings, information or referral from friends or family members, and checking employer's websites. It is notable that career service centers were among the least popular venue for job seekers.

Despite these different views, we included a question in the CIS survey to evaluate the degree to which an internship affected this dynamic. Among college graduates at T3, respondents with no internship experience reported slightly lower college-job relevance (2.9) as compared to students with internship experience (3.2). The evidence suggests that students who had two or more internships felt that their jobs were more closely aligned with what they studied in college (3.4) than students with one internship (3.1) or who had not completed an internship (2.9).

Figure 31: Mean college-job relevance by college internship participation (2021-2022: T3)



Note: Survey questions asked students to rate each item on a 1-5 scale, with 5 being “extremely related.”

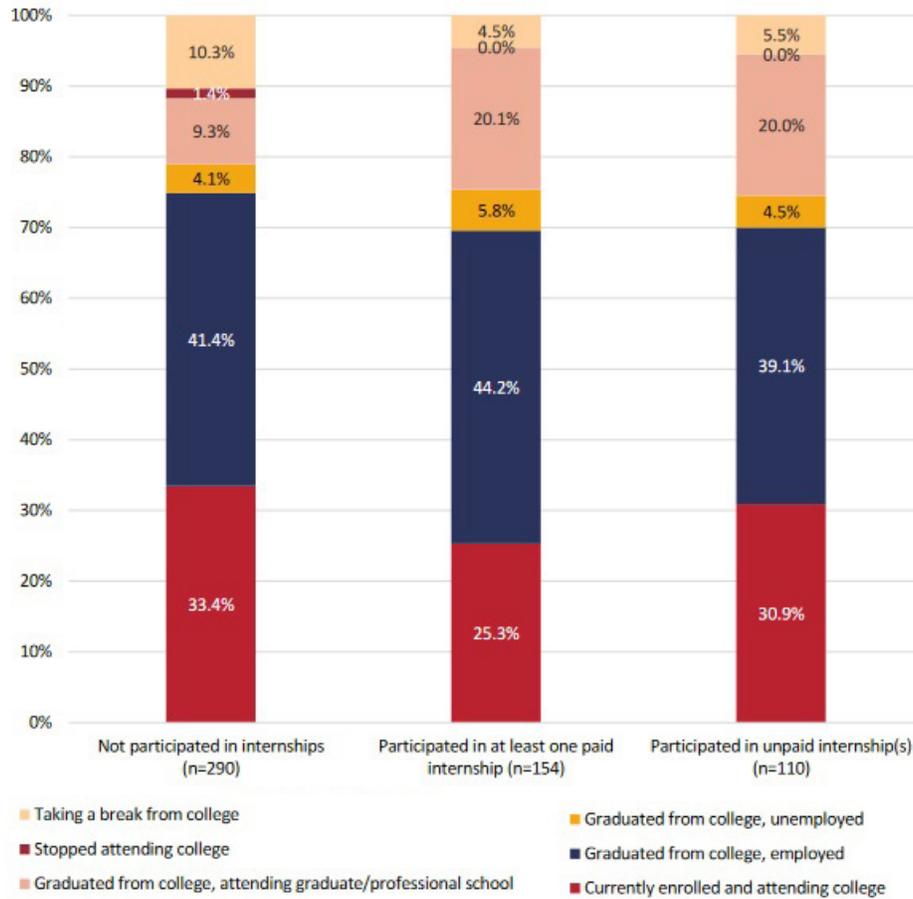
Additionally, we conducted linear regression analyses to explore the relationships between student characteristics and major-job fit and identified the following results (see Appendix 3 for more details):

- College graduates who experienced any internships during our study period (T1-T3) generally find **jobs that are more relevant to their field of study** in college compared to those who did not participate in any internships.
- **Arts and humanities** and **social science major** graduates find job positions that are less relevant to their majors after graduation, compared to STEM major graduates.
- **First generation** college graduates work in jobs that are less relevant to their majors after graduation, compared to continuing generation students.

Internship compensation and employment status. Finally, one of the most pressing questions in the field is whether internships impact students’ future employment status, and if the type of internship they took (e.g., paid or unpaid) has any impact on this key outcome. To study this issue we categorized students into three groups: 1) students who did not participate in any internships during the entire study, 2) students who participated in at least one paid internship during the study, and 3) students who only participated in unpaid internship(s) throughout the study.

As seen in Figure 32, respondents who participated in at least one paid internship had the highest rate of employment after graduation (44.2%). A slightly smaller proportion of students with an unpaid internship (39.1%) were employed than students without any internship experiences (41.4%). Students with an internship experience generally had higher rates of attending graduate or professional schools (20.1%) than students without one (9.3%). Students without internships were more likely to have stopped attending (n=4; 1.38%) or were taking a break from college (n=30; 10.34%) than other groups. Each of these trends suggest future topics for research and consideration.

Figure 32: Employment status (2021-2022: T3) by internship compensation (paid vs. unpaid) for survey longitudinal cohort



In addition, we examined students’ post-graduate income based upon internship experience using multinomial logistic regression analyses (see Appendix 4 for details):

- **Graduates who experienced any internships** during our study period (T1-T3) were about three times more likely to be in the mid-high (\$50k-\$75k/yr) income group rather than the lowest income group (\$25k/yr) as compared to students who did not participate in any internships regardless of whether their internship was paid or unpaid.
- Graduates who identify as **female, transgender, or another gender** were 70-90 percent less likely to be in the mid-high (\$50k-\$75k/yr) and high (\$75k-\$125k/yr) income group after graduation. Conversely, this gender group was more likely to be in the lowest income group (less than \$25k/yr) compared to male students.
- Graduates from **the lowest income background** (parents’ income is less than \$25k/year) are significantly likely to stay in the lowest income group (less than \$25k/year) after graduation, compared to students from higher income backgrounds.

- **First generation students** are significantly more likely to be in the mid-low (\$25k-\$50k/yr) and mid-high (\$50k-\$75k/yr) income group after graduation, and less likely to be in the lowest income group (less than \$25k/yr) compared to continuing generation students.
- **Arts and humanities major** graduates are significantly less likely to be in the mid-high (\$50k-\$75k/yr) and high (\$75k-\$125k/yr) income group after graduation, and more likely to be in the low to mid (<\$50k/yr) income group compared to STEM and business major graduates.

Impact of Internship Participation on Student's Psychosocial Outcomes - Survey Data

As previously noted, an internship has the potential to not only impact a students' financial futures and social mobility, but also may enhance their self-confidence and professional identities. Of course, these psychological attributes do not develop in a vacuum, but instead are shaped by the interaction of social, cultural, and environmental forces on a person's cognitions and actions. In psychology, the constructs that capture these dynamic interactions are called psychosocial constructs, and in the CIS we measured the impact of internships on one of these constructs that is particularly salient in light of the Covid-19 pandemic – that of career adaptability.

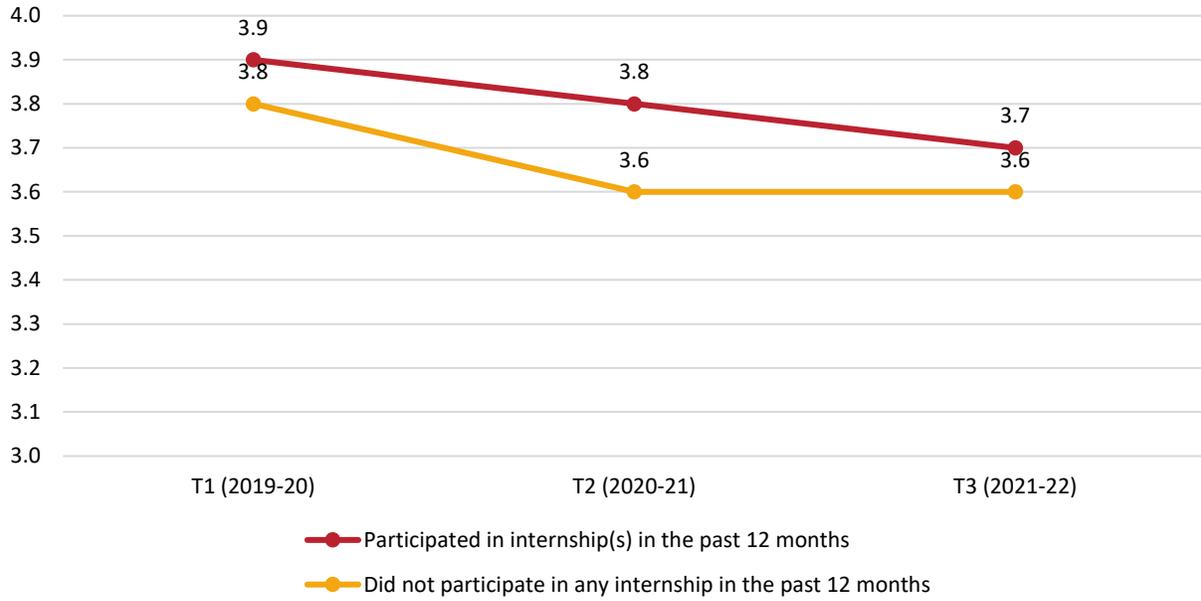
Career adaptability is defined as, “the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions” (Savickas, 1997, p. 254). Originally developed to help capture people's resilience and adjustments to exogenous forces such as recessions or technological change, career adaptability has taken on new relevance in a world disrupted by the COVID-19 pandemic.

In the CIS, we used a validated scale to measure career adaptability (Savickas & Porfeli, 2012), which includes **concern** about the future, **control** over one's future, **curiosity** about different career options, and **confidence** to achieve one's goals, each of which are measured by six items that elicit how strongly the respondent rates themselves on these attributes. These items use a five-point Likert style set of response options (1 = not strong; 5 = strongest). Cronbach's alpha of the four subscales, using the CIS data, ranged from 0.85 to 0.90.

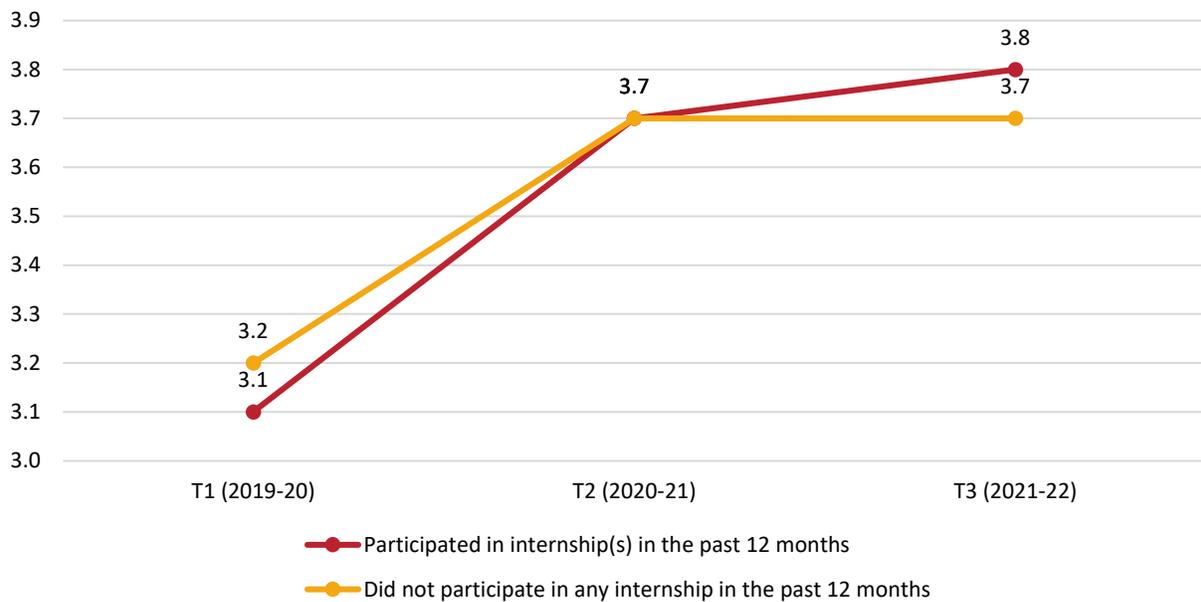
The results indicate that students' average career adaptability score slightly decreased throughout the study, regardless of internship participation. When examining each domain of career adaptability individually, results suggest that students who participated in internship(s) reported slightly higher scores than those who did not participate in internships on concern about the future at all three time points, on curiosity about different career options and confidence to achieve one's goals at T2 and T3, and on control over one's future at T3.

Figure 33: Changes in each career adaptability domain by internship participation (T1-T3) for survey longitudinal cohort

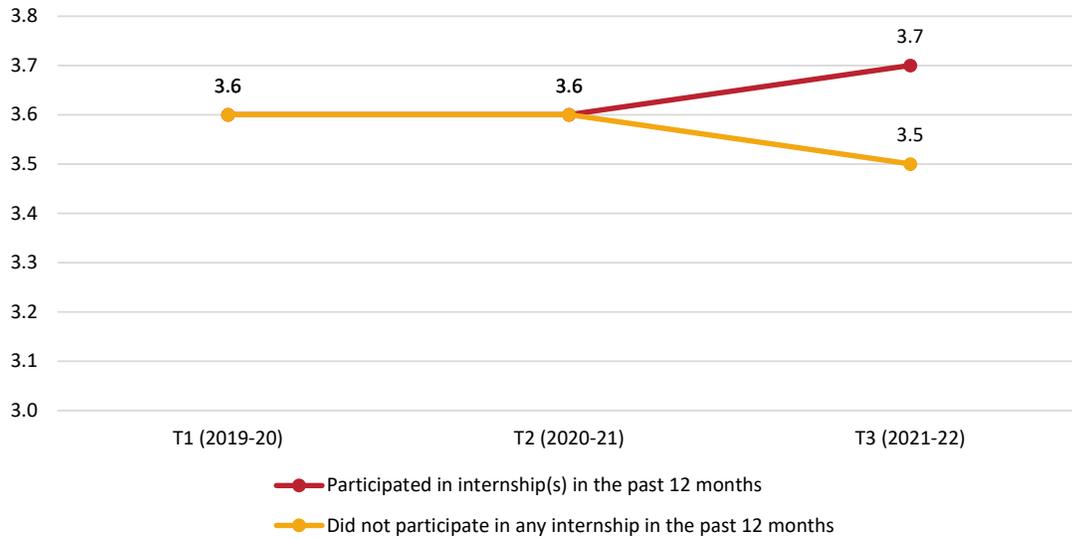
Concern about the Future



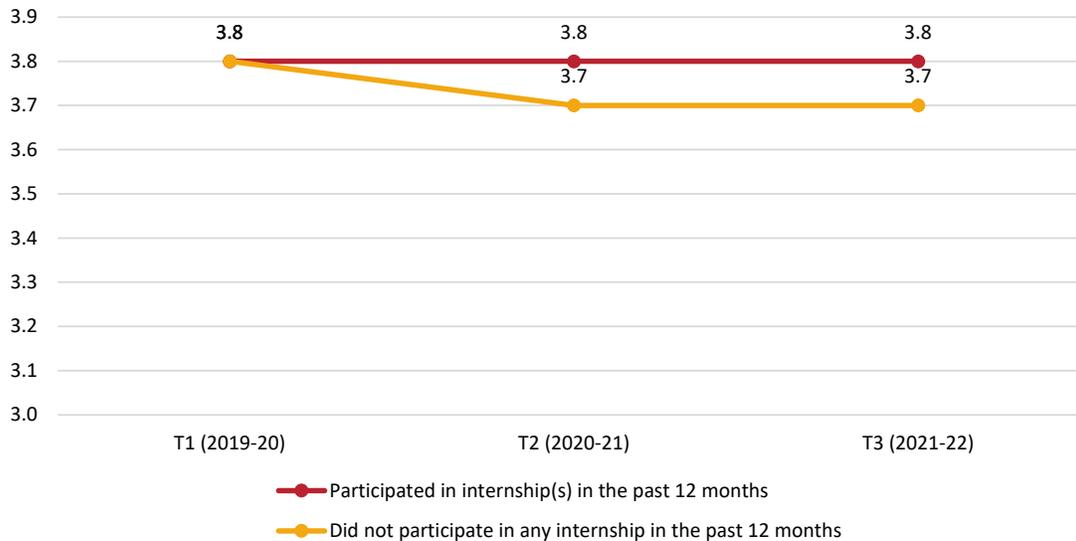
Control over One's Future



Curiosity about Different Career Options



Confidence to Achieve One's Goals



The literature on career adaptability helps to explain these findings. First, Negru-Subtirica and colleagues (2015) studied 1,151 adolescents and found that all four dimensions of career adaptability significantly decreased over time. They suggested that individuals who initially reported high career adaptability gradually become vulnerable and uncertain as they learn more about the world of work. In contrast, Ocampo et al. (2020) conducted a survey of 173 undergraduate hotel and restaurant management students in China, finding that interns' career adaptability increased over time while non-interns' did not. These findings indicate

that internship participation may provide students the opportunity to acquire increased psychological skills and resources to manage career planning and adjustment, and that such a benefit may persist over time.

Impact of Internship Participation on Students' Lives - Interview Data

Finally, we turn to an exploration of the impact of internships on students' lives based on the qualitative interviews at T3. This analysis is based on the 42 students at T3 who had taken an internship during the study period and revealed 4 themes:

1. Internships provided technical experience and opportunities to apply classroom knowledge to the “real world.” Many students described internships as providing “valuable experiences” across several dimensions, including specific technical or on-the-job experience in their chosen career which provided opportunities for interns to develop increased confidence.

When describing the impact of their internship, many students noted the role it played in providing practical and hands on experience related to potential work roles. One student said, “the internship gave me practice in practical applications for what I was learning from my classes in information technology.” Another student observed that within her chosen field of accounting, the internship deepened their understanding of methods, software, and how the material she was learning in her coursework was being applied to real-world situations. Students who interned in large companies spoke of the benefits of working across multiple departments which provided a broad and realistic view of the profession as they were able to understand their industry from multiple perspectives.

2. Internships helped students get a new job or provided credibility that advanced their career opportunities. Several students shared ways that their internship participation directly impacted their career and professional development. For some, this included being hired by their internship employer and for some it meant opportunities to increase their credibility by bolstering their resume for future employment or graduate school applications.

The most direct benefits of an internship described by some students was the opportunity to transition from the internship position into employment within the same firm or organization. As one student explained, at the end of her internship, “They asked me to interview with them and I got the job.” In another case, a student intern was able to transition to regular employment without an interview. They said, “I had to resubmit my resume, my updated resume... There was no interview involved. My boss just approved the conversion [from an internship to regular employment].”

Many students described the ways that completing an internship boosted their credibility and visibility within their chosen profession, which in turn led to new jobs, internships or graduate school opportunities. Similarly, some students described their internship experience as enhancing the credibility and competitiveness of their resume. One former IT intern explained that his internship “helped me to stand out” during the application and interview process for his current position with a large tech company. Students often stated that they used their internship to “boost,” “improve,” or “polish up” their resume, and some observed that prospective employers often noted with interest the presence of internship experiences on their resume.

Some students reported that their internship was key to their successful applications for graduate and professional school. They described writing about their internship in their statement of purpose, utilizing letters of recommendation from past internship supervisors, and receiving advice and feedback on graduate and professional school applications from their internship supervisors and mentors. In contrast to faculty or course instructors who observed their work among one of many other students, students felt that internship supervisors and mentors were often in the best position to “provide really good recommendations” and “really advocate for me and my applications.” For example, a circuit court judge observed a law intern’s professionalism and skill in their courtroom and wrote the intern a letter of recommendation for her successful law school application.

3. Internships provided opportunities to cultivate or expand one’s network. One of the most frequently reported outcomes of internships was that of social and professional network development. These networks typically included students’ supervisor or mentor, co-workers, and internship peers. Importantly, whether the new network was large or small, in-depth or more superficial, several students stated that the basic development of a network was particularly important because, prior to the internship, they felt that their professional connections were few-to-nonexistent.

Several students shared ways that their internship experience allowed them to expand their network, which contributed to future internship or job opportunities. For example, one student described this process of leveraging prior connections and experiences to obtain subsequent internships:

So, I participated in two internships, and I realized that in the scientific community they know each other pretty well. So, they [my supervisor at my current, second internship] know the people I worked with on my [prior] internships. In the lab I'm working in right now, my supervisor was really excited to have me because I had worked with a well-known person in the field. He was like, "Oh, I love her." He said it was so great that you were in that lab so that's why he was more willing to take me into his lab because especially with bacteriology, they immediately saw me in a good light because they knew I worked with her.

Another network-related outcome of an internship was new knowledge about and connecting with people who are involved in all aspects of a profession. For example, one student discussed the value of becoming familiar with the logistics and people involved in various aspects of supply chains as a profession in this way:

Meeting all the different vendors and establishing relationships with them, and seeing the process of how they got things to come into our store made me realize it's not just items coming, that it's actually a process. Just watching all of that was pretty cool. But definitely, I think, just the relationships I built with the different people and kind of networking.

Several students described their new networks in terms of acting as a “support system,” where supervisors, co-workers, and other interns became friendly and supportive in non-work aspects of life. For some students, this felt especially important given that it coincided with the COVID-19 pandemic. One student who interned in an e-commerce firm shared of her internship experience, “We were all pretty close, and we looked at each other as family.” Another student emphasized the importance of networks in all aspects of her life, where their co-workers and supervisor not only taught them how to work in the lab, but also provided “advice about school, what club (to join), how to deal with classes, and life in general.”

4. Internships help to clarify career goals. Several students reported that a benefit to their internship completion was that it helped to clarify their own academic and career goals. Specifically, internships often helped students to develop a broader understanding of their interest in a field, particular roles/positions they would like to enter, and the ways these careers fit (or not) within their overall life goals. For example, one student elaborated on how exposure to a new organization provided them with an opportunity to determine whether working in that field was a good career choice for them:

The internship lets you get your feet in the water to understand what it is you are looking for if the internship or the field of the internship is something that you want to pursue more, or if, you know, maybe you don't want to -- you find that you don't want to go that exact route.

Similarly, a participant shared their view that internships offer a learning opportunity to give insight into potential jobs. They said, “if you're looking for a job but you have never done that in the past, you can experience and see if you like it or not.”

For some students, their internships offered them insight into the day-to-day lives of individuals employed in particular jobs or career areas. Sometimes, this new knowledge excited students to persist in a chosen major or career path. Other times, this allowed students to understand that a particular career path was not for them. One student said:

Your mind opens up to the more possibilities that you see that are within that field, and you get to learn where your place stands at. By learning where you stand, you may learn that you actually do not want to do this in whatsoever, slightest.

In addition to providing insight into whether or not students may like to pursue a particular major or career path, for some students, internships helped to clarify the particular role students want to pursue within their chosen profession. For instance, one student realized that they wanted to be a leader:

From being in those different internship positions I've seen a variety of leaders that people can be, and what the duties and roles are for these leaders, and the values that they embody. After observing these various leaders, I decided that I definitely want to be in a leadership position.

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Appendices

Appendix 1: Binary logistic regression results (Outcome: Enrolling in graduate programs)							
	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for Exp(B)	
						Lower	Upper
Intercept	-2.665	0.554	23.108	0.000	0.070		
Gender (Reference: Male)							
Female & Other gender identities	0.541	0.328	2.720	0.099+	1.719	0.903	3.271
Race (Reference: White)							
Black	0.495	0.408	1.472	0.225	1.640	0.738	3.646
Latinx	0.181	0.468	0.150	0.699	1.199	0.479	3.001
Other SoCs	0.527	0.468	1.268	0.260	1.694	0.677	4.243
Family income (Reference: 125k or higher)							
Less than \$25,000	-0.137	0.659	0.043	0.835	0.872	0.239	3.174
\$25,000-75,000	-0.189	0.529	0.128	0.721	0.828	0.294	2.334
\$75,000-124,999	-0.149	0.521	0.082	0.774	0.861	0.310	2.391
No Response	-0.081	0.585	0.019	0.890	0.922	0.293	2.901
First generation Status (Reference: Continuing generation)							
First generation	-0.398	0.300	1.762	0.184	0.672	0.373	1.209
Major (Reference: STEM & Business)							
Arts & Humanities	-0.051	0.578	0.008	0.930	0.951	0.306	2.949
Social Sciences	0.494	0.357	1.916	0.166	1.639	0.814	3.301
Other majors	0.192	0.354	0.292	0.589	1.211	0.605	2.425
Institution Type (Reference: PWI)							
HBCU	0.685	0.370	3.426	0.064+	1.984	0.960	4.096
HSI	1.099	0.411	7.159	0.007**	3.002	1.342	6.718
Internship Participation (Reference: No internship experiences in T1-T3)							
At least one internship experience	0.931	0.296	9.872	0.002**	2.537	1.419	4.536

Note: + p < .1; * p < .05; ** p < .01; *** p < .001; Sample size = 337; Outcome reference group: Participated in the labor market (employed or unemployed).

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Appendix 2: Binary logistic regression results (Outcome variable: Securing employment)							
	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for Exp(B)	
						Lower	Upper
Intercept	-2.656	0.559	22.609	0.000	0.070		
Gender (Reference: Male)							
Female & Other gender identities	-0.063	0.488	0.017	0.897	0.939	0.361	2.441
Race (Reference: White)							
Black	-0.959	0.698	1.888	0.169	0.383	0.098	1.505
Latinx	-1.045	0.761	1.886	0.170	0.352	0.079	1.563
Other SoCs	-1.497	0.712	4.415	0.036*	0.224	0.055	0.904
Family income (Reference: 125k or higher)							
Less than \$25,000	0.191	1.376	0.019	0.889	1.211	0.082	17.956
\$25,000-75,000	-0.454	1.167	0.152	0.697	0.635	0.065	6.250
\$75,000-124,999	-0.013	1.186	0.000	0.991	0.987	0.096	10.098
No Response	-0.382	1.224	0.098	0.755	0.682	0.062	7.518
First generation Status (Reference: Continuing generation)							
First generation	-0.414	0.461	0.806	0.369	0.661	0.268	1.631
Major (Reference: STEM & Business)							
Arts & Humanities	19.236	8586.380	0.000	0.998	15,034.499 ²	0.000	
Social Sciences	1.332	0.808	2.718	0.099+	3.788	0.778	18.453
Other majors	0.458	0.557	0.676	0.411	1.582	0.530	4.716
Institution Type (Reference: PWI)							
HBCU	-0.333	0.619	0.290	0.590	0.717	0.213	2.411
HSI	-0.675	0.644	1.096	0.295	0.509	0.144	1.801
Internship Participation (Reference: No internship experiences in T1-T3)							
At least one internship experience	-0.504	0.477	1.120	0.290	0.604	0.237	1.537

Note: + p <.1; * p <.05; ** p <.01; *** p <.001; Sample size = 257; Outcome reference group: Unemployed.

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Appendix 3: Linear regression results (Outcome: Major-job fit)							
	B	S.E.	β	t	p-value	Collinearity Stats	
						Tolerance	VIF
Intercept	3.251	.353		9.223	.000	2.557	3.946
Gender (Reference: Male)							
Female & Other gender identities	-0.254	0.206	-0.079	-1.232	0.219	-0.661	0.152
Race (Reference: White)							
Black	-0.341	0.293	-0.091	-1.163	0.246	-0.919	0.237
Latinx	-0.562	0.375	-0.128	-1.497	0.136	-1.301	0.178
Other SoCs	-0.401	0.356	-0.081	-1.125	0.262	-1.103	0.301
Family income (Reference: 125k or higher)							
Less than \$25,000	0.498	0.461	0.094	1.080	0.281	-0.411	1.408
\$25,000-75,000	0.309	0.356	0.099	0.868	0.386	-0.393	1.012
\$75,000-124,999	0.180	0.348	0.051	0.517	0.606	-0.506	0.866
No Response	0.159	0.396	0.039	0.402	0.688	-0.622	0.941
First generation Status (Reference: Continuing generation)							
First generation	-0.468	0.203	-0.153	-2.303	0.022*	-0.869	-0.068
Major (Reference: STEM & Business)							
Arts & Humanities	-0.869	0.359	-0.161	-2.419	0.016*	-1.578	-0.161
Social Sciences	-0.974	0.268	-0.256	-3.641	< 0.001***	-1.502	-0.447
Other majors	-0.069	0.256	-0.018	-0.270	0.787	-0.573	0.435
Institution Type (Reference: PWI)							
HBCU	0.332	0.265	0.095	1.252	0.212	-0.191	0.854
HSI	0.488	0.326	0.126	1.493	0.137	-0.156	1.131
Internship Participation (Reference: No internship experiences in T1-T3)							
At least one internship experience	0.504	0.204	0.166	2.476	0.014*	0.103	0.905

Note: + p <.1; * p <.05; ** p <.01; *** p <.001; Sample size = 337; Model fit information - Adjusted R2 = .094; F-statistic: 2.583 on 15 and 215 df, p = .001.

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Appendix 4: Multinomial logistic regression results (Outcome: Post-graduate Income)			
	\$25,000 - \$49,999	\$50,000 - \$74,999	\$75,000-\$124,999
	OR (SE)	OR (SE)	OR (SE)
Intercept	12.32 (1.19)*	14.88 (1.24)*	20.54 (1.38)*
Gender (Reference: Male)			
Female, Transgender, & Other	0.56 (0.55)	0.30 (0.58)*	0.10 (0.71)**
Race (Reference: White)			
Black	0.65 (0.65)	0.50 (0.72)	0.48 (0.96)
Latinx	0.84 (0.84)	0.44 (0.98)	0.78 (1.20)
Other SoCs	0.98 (0.89)	1.43 (0.95)	0.91 (1.21)
Family income (Reference: 125k or higher)			
Less than \$25,000	0.05 (1.23)*	0.04 (1.38)*	0.03 (1.75)+
\$25,000-75,000	0.28 (1.16)	0.27 (1.22)	0.27 (1.39)
\$75,000-124,999	0.32 (1.18)	0.62 (1.22)	0.49 (1.37)
No Response	0.34 (1.23)	0.29 (1.31)	0.29 (1.51)
First generation Status (Reference: Continuing generation)			
First generation	4.08 (0.49)**	3.46 (0.54)*	1.88 (0.71)
Major (Reference: STEM & Business)			
Arts & Humanities	0.89 (0.71)	0.15 (0.98)+	0.00 (0.00)***
Social Sciences	1.24 (0.61)	0.49 (0.68)	0.52 (0.89)
Other majors	1.17 (0.60)	0.50 (0.67)	0.64 (0.85)
Institution Type (Reference: PWI)			
HBCU	0.84 (0.62)	1.48 (0.68)	1.00 (0.76)
HSI	0.39 (0.76)	0.32 (0.85)	0.16 (1.13)
Internship Participation (Reference: Did NOT participated in internship in T1-T3)			
Yes internship	2.21 (0.49)	3.03 (0.54)*	1.07 (0.68)

Note: + p < .1; * p < .05; ** p < .01; *** p < .001; OR = Odds Ratio; SE = Standard Error; Sample size = 231; Outcome reference group: Less than \$25,000.