Results from the College Internship Study at a Texas College

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CCWT
CENTER FOR RESEARCH ON
College-Workforce Transitions

The College Internship Study

EXECUTIVE SUMMARY

This report includes findings from the first round of data collection (Fall 2019) at a Texas College for *The College Internship Study*, which is a national mixed-methods longitudinal study of internship programs conducted by the Center for Research on College-Workforce Transitions (CCWT) at the University of Wisconsin-Madison (UW-Madison). The findings are based on an interdisciplinary sample of students who took an online survey (n = 233), focus groups with students who have and who have not had an internship experience (n = 13), and interviews with career advisors and faculty (n = 6) and employers who host interns (n = 2).

We would like to thank the college for allowing our research team to visit and conduct this study with your students, faculty and community members, and hope that our findings are useful as you work towards improving internships and work-based learning for your students. As our research moves into its second year, we will focus on the impacts of the COVID-19 pandemic on the students, faculty and staff at the Texas college and employer partners with respect to internships and students' overall experiences with the pandemic and its impacts on their studies and career goals.

Four research questions guide our study: (1) How many students are participating in internship programs, and does participation vary by student demographics, academic status, or life/employment situation? (2) What barriers exist for students to participate in internship programs? (3) What is the structure and format of internship programs? And, (4) How, if at all, is program structure and format associated with student satisfaction with their internships and their estimation of the value of the internship for their career development?

Some key findings from our analysis include:

- The Texas college is a public research university that was recently conferred with R1 status and is a designated Hispanic Serving Institution that serves many students with Hispanic background and first-generation college students, some of whom commute daily from Ciudad Juárez in Mexico. Consequently, the college and its student body are deeply influenced by Mexican American bilateral relations, and Hispanic culture and heritage. Notably, The college maintains one of the lowest out-of-pocket costs of any research university in the United States.
- Educators indicated that internships are incredibly important for students' professional development. They provide multiple opportunities and resources for students to obtain an internship experience during their time. Employers recognize internships as a critical component of student development and are intentional about planning experiences that will benefit students.

- About 26% of the respondents to our survey had participated in an internship program within the past year (n = 60), which also means that about 74% (n = 173) did not take any internship.
- Of the students who had taken an internship, 65.2% were in programs that did not require an internship while 18.5% reported that internships were required to graduate.
- Students who are first-generation, part-time enrolled in their academic programs, or full-time employed in a non-internship paid job were less likely to participate in an internship. In addition, students with self-reported parental income above Texas state average and with a higher GPA were more likely to have participated in an internship.
- About 77% of students who did not take an internship (n = 173) had wanted to do so. Barriers to participation include a heavy course load (66.9%), the need to work at their current job (60.9%), a lack of internship opportunities (51.9%), insufficient pay offered (33.1%), lack of transportation (30.8%), and a lack of childcare (18.8%). These obstacles often intersected with one another such that individual students experienced more than one at a time. Focus group participants (n = 13) also reported several additional barriers to their participation in internships, including financial considerations, the competitive application process, and challenges locating university supports for student internships.
- The clarity of internship tasks and goals is positively associated with students' internship satisfaction. Additionally, how related an internship was to academic programs is positively associated with students' perceived internship value for both their academic development and career development;
- While the outcomes of internship participation on employment status and wages will be studied over the next 12 months, data from the focus groups suggest that short-term outcomes of participating in an internship program for this sample of students include the opportunity to explore one's career interests, gain real-world experience, professional skills, and self-confidence, cultivate professional networks, and boost one's resume and obtain post-graduation employment.

This report concludes with recommendations for specific strategies that students, faculty, and staff at the college, as well as employers who supervise student-interns, can employ to increase participation, access, and program quality for students. We provide these recommendations with the recognition that faculty, staff, and administrators at the college are best positioned to design and implement programs that meet the unique needs of academic programs and students, and in the hopes that our evidence-based insights about students' experiences with internship programs can be used to make these practices more equitable and effective for all students.

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I. INTRODUCTION: Why Study College Internships?

Internships are widely perceived as important co-curricular experiences that can enhance students' learning and facilitate their transition to the workforce. Advocates argue that through internships, students can develop new skills and abilities by transferring academic knowledge to real-world tasks, explore different career options, develop new professional networks and even obtain full-time employment. At the same time, employers can use internship programs to develop a pipeline of new recruits that can be vetted on the job for future employment, and postsecondary institutions can increase their students' career prospects and real-world experiences. Given these potential outcomes, internships are often described as a "win-win-win" situation for higher education, employers, and students themselves (National Association of Colleges & Employers, 2018). Furthermore, internships and similar forms of work-based learning (WBL) have been designated as a "high-impact" practice that improves student outcomes (Kuh, 2008; Parker, Kilgo, Sheets & Pascarella, 2016), leading many state governments, colleges and universities, and workforce development boards to promote internship programs as a desirable solution to regional education-to-employment problems.

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However, the research literature clearly indicates that internships are neither easy to design and implement, nor are they a panacea for the long-standing problems of cultivating students' skills and easing their entry into the labor market (Hora, Wolfgram, & Thompson, 2017). Access to internships themselves can be difficult, particularly for students from particular groups, including students who are low-income or economically marginalized, first-generation college students, students who are members of underrepresented racial and ethnic groups, and students who may be unable to engage in unpaid labor and/or lack social networks that facilitate participation in internship programs. Furthermore, while internships can provide a rich, experiential learning opportunity for students, long promoted by education theorists and learning scientists (e.g., Dewey, 1938; Resnick, 1987), designing a robust learning experience within an internship is much easier said than done.

Despite these challenges of access and program quality, policymakers and educators rightfully view internships as a potentially important and influential component of students' education and career development. Before the potential of internships can be fully realized, however, it is necessary to document the current state-of-affairs at the institutional level so that future planning can be based on rigorous evidence. For instance, data on student participation and experiences with internships as well as the perspectives of career services staff and employers can be used to: (1) identify strengths and weaknesses in current programming, (2) establish a baseline for long-term analysis of program quality and impacts, and (3) inform decision-making about future program development and resource allocation.

In early 2018, the Center for Research on College-Workforce Transitions (CCWT) at the University of Wisconsin-Madison launched the College Internship Study as a translational research program that could provide key stakeholders with robust, actionable evidence about internship programs. Our aim in this study is to provide institutional leaders, faculty and instructors, and career services professionals at the college with rigorous data on issues related to internship program access and quality. In doing so, we place

students' experiences and perspectives at the heart of the analysis while also attending to the critical issue of institutional capacity—two considerations that should guide decision-making about future policy and practice around internship programs.

II. BACKGROUND: What does the research literature say about internships?

An extensive body of research exists on college internships across a variety of disciplines and countries, leading to a literature that is simultaneously robust and inconsistent (Hora, Wolfgram, & Thompson, 2017). The robustness of the literature is evident in numerous studies from different national and disciplinary perspectives that have documented the positive impact of internships on student outcomes. For instance, in a recent study (Nunley, Pugh, Romero, & Seals, 2016), students who listed an internship on their resume received 14% more offers for an interview than those who did not. Evidence is growing that internships also lead to lower rates of unemployment after graduation, higher wages, and even better grades than students who do not have an internship. Specifically, students who had an internship have 15% lower unemployment (Silva et al.,2015), 6% higher wages five years after graduation (Saniter & Siedler, 2014), and final year grades that are 3.4% higher than those who did not have an internship (Binder, Baguley, Crook, & Miller, 2015).

However, the literature is also limited in several important ways. One of the biggest challenges facing the field of internship research is the lack of clear and standardized definitions regarding internships in general. For instance, the National Survey of Student Engagement (NSSE, 2018) is an important source of information about college internships in the United States, but the survey item encompasses a diverse array of (undefined) experiences that can be interpreted in a myriad of ways by survey respondents. Thus, claims based on NSSE data that internships are a high-impact practice that universally lead to student engagement and success (e.g., Kuh, 2008) should be interpreted with caution.

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Furthermore, before claiming causal relations between particular programs and student outcomes, it is essential to first describe these variables and the mechanisms that may govern their relations (Loeb et al., 2017). Consequently, descriptive research on critical mediating factors such as the structure and format of internships is essential in order to avoid treating the internship experience like a "black box" that mysteriously transforms students into work-ready individuals (Silva et al., 2016, p. 704). Similarly, it is untenable to assume that all internships provide a robust experiential learning opportunity in the spirit of the types of hands-on learning envisioned by educational theorists (e.g., Dewey, 1938; Resnick, 1987). As a result, research examining the specific structural features of the learning environment that comprise the internship experience is particularly needed to inform internship policy and practice (Cannon & Geddes, 2019).

In our study, we build upon promising lines of inquiry that examine how features of internship program structure - such as compensation, quality of supervision, and task clarity – may impact student outcomes. These programmatic features are important to consider because research on the coordination between employers and academic programs shows that the more internships are clearly coordinated with academic coursework, the more students will gain from the overall experience (Katula & Threnhauser, 1999; Narayanan, Olk, & Fukami, 2010). Another important factor in perceived internship quality and efficacy is the behavior of job-site supervisors. Active and meaningful supervisor support was found to positively impact business students' satisfaction with the internship experience (D'abate, Youndt, & Wenzel, 2009), and was also positively associated with job pursuit, satisfaction, and career development in a study of 99 students in an undergraduate management program (McHugh, 2016). Other program design features that have been associated with satisfaction and other student outcomes include the duration of internships (Murphy, Merritt, & Gibbons, 2013), the degree of student autonomy to design and perform tasks (Virtanen, Tynjala & Etelapelto, 2014), the clarity and variety of work tasks (Bauer et al., 2007; Beenen & Rousseau, 2010), and the presence of detailed feedback from both educators and employers (Rothman, 2007).

With respect to outcome measures, some of the most common effects of internship participation examined in the literature are those of students' employment status, employer demand, or students' perceived readiness to enter the labor market (e.g., Baert, Neyt, Siedler, Tobback, & Verhaest, 2019; Jung & Lee, 2017; Nunley, Pugh, Romero, & Seals, 2010; Powers, Chen, Prasad, Gilmartin, & Sheppard, 2018; Weible & McClure, 2011). While these long-term outcomes of internships are important, another effect of experiential and work-based learning is the development of students' psychological resilience and self-concept (Callanan & Benzing, 2004; Paulson & Eugene Baker, 1999; Taylor, 1988). A concept in vocational psychology that is particularly salient for college students in a labor market that increasingly features short-term contract work and frequent job switching is that of career adaptability, or the psychosocial capacity and skills to continuously adapt, persist, and self-manage one's career tasks, transitions and personal traumas (Savickas, 1997, 2005), which is a psychosocial variable examined in our study.

Features of internships examined in this study: Coordination between employers and academic programs, Quality of supervision and mentoring, Duration of internship, Degree of student task autonomy, Clarity and variety of work tasks, Presence of detailed feedback.

Outcomes of internships examined in this study:
- Student satisfaction with the experience
- Enhanced sense of career goals
- Enhanced understanding of academic coursework
- Wages (for longitudinal data)
- Employment status (for longitudinal data)

Finally, career advisors and postsecondary educators are increasingly concerned about the problem of access, particularly for low-income, first-generation students who may be unable to engage in unpaid labor and/or lack transportation, child-care, or social networks that facilitate participation on internship programs (Curiale, 2009; Finley & McNair, 2013; Perlin 2012). Additionally, internship opportunities in rural areas and for students in certain fields (e.g., arts and humanities) may be limited, further exacerbating the access problem that may afflict students in many of our nation's colleges and universities. Consequently, we examine the obstacles that may be preventing some students from pursuing and successfully completing an internship, with the ultimate goal of helping your institution to address these barriers so that all students can participate in a high-quality work-based learning experience.

III. METHODOLOGY

The College Internship Study is a mixed-methods longitudinal study of internship programs that is guided by the following research questions: (1) How many students are participating in internship programs, and does participation vary by student demographics, academic status, or life/employment situation? (2) What barriers exist for students to participate in internship programs? (3) What is the structure and format of internship programs? And, (4) How, if at all, is program structure and format associated with student satisfaction with their internships and their estimation of the value of the internship on their career development?[1]

The data collected for the study include an online survey of students, focus groups with students who had internship experience *and* who have not had an internship experience, interviews with educators and professionals (e.g., career advisors, faculty, and area employers) who were involved in internship program

administration and implementation, and documents and online resources about internship programs and services at the institution. A team of trained researchers collected this data at the college in the Fall of 2019. The online survey was administered to 1500 students in the second half of their program (with the exception of students in teacher education and nursing programs), and 233 responded which resulted in a response rate of 18.6% (see Table 2). The survey included questions about student demographics, characteristics of internship programs, barriers to internship participation, and students' career adaptability (i.e., a psychological construct linked to positive vocational outcomes). At the conclusion of the survey, 13 students volunteered for focus groups, which lasted approximately 45-60 minutes each, included between 1 and 3 students, and researchers asked more in-depth questions about their internship experience, and barriers and challenges to obtaining an internship. In addition, 6 educators and 2 employers participated in an hour-long interview regarding their own experiences administering internships, helping students with or during internships, and overall purpose of internships (see Table 1).

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[1] The data reported here represent the first phase of data collection the college in Fall 2019 (Time 1). Data also will be collected in Fall 2020 (Time 2) and will include a follow-up survey of students who responded to the T1 survey, which will represent a panel of students to track as they enter the workforce. Interviews will also be conducted with a sub-sample of these students, educators, and employers in order to assess the nature of internship programming and/or effects over time.

Table 1: Description of Fall 2019 sample

	Survey	Focus Groups	Interviews
Students	233	8 (n = 13 individuals)	N/A
Educators	N/A	N/A	6
Faculty/instructors	N/A	N/A	5
Career advisors	N/A	N/A	1
Employers	N/A	2	2

Table 2: Description of student sample

	Survey Sample	Institutional Population
Total	233	1,500
Gender	Male = 89 | 38.20% Female = 142 | 60.95%	Male = 749 | 49.9% Female = 751 | 50.1%
Race	Asian = 1 | 0.43% Black = 1 | 0.43% Hispanic = 180 | 77.59% American Indian or Alaska Native = 1 | 0.43% White = 15 | 6.47%	Asian = 12 | 0.8% Black = 32 | 2.1% Hispanic = 1,262 | 84.1% White = 83 | 5.5%
1st gen status	Yes = 115 | 49.36% No = 117 | 50.22%	Yes = Not reported No = Not reported

These data were analyzed using a variety of techniques, 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, a linear probability model, and multiple regression analysis of survey data. In our study, we advance no claims of causality among internship program participation and/or design features and student outcomes, but instead provide the type of descriptive research that must precede such empirical research and explore associations among these variables (Loeb et al., 2017). A more detailed description of our research methodology is included in Appendix A of this report.

IV. RESULTS: Institutional capacity for administering internship programs

A goal of our research was to map the institutional practices in place regarding how internship programs are designed, implemented, and monitored on campus. This kind of diagnostic assessment can provide a "road map" of the four Ws—where, who, what, and when—of a program or initiative. Without such information at hand, it is difficult to ascertain precisely how programs like internships function within a complex organization, what (if any) kinds of mechanisms may be at work in shaping student outcomes, and where strengths and weaknesses exist that could be addressed in future programming. In the case of internship programs, which are often not administered through a centralized unit (e.g., a single career services office) but are managed by multiple parties across (and even outside of) campus, this type of diagnostic mapping is even more important. We gathered information on these issues from students and academic personal, along with an analysis of online and hard copy documents.

Are internships required to graduate from the College?

Students at this Texas college are not all required to complete an internship prior to graduation. However, across the institution, specific colleges and departments may require students to complete an internship before attaining their degree. A few majors (i.e., computer sciences, business) require students to complete an internship experience prior to graduating.

Some students complete an internship as part of their graduation commitment (for-credit), while others take on internships for professional development (non-credit). If students are enrolled in a practicum course, they require 320-hours of participation of which these hours are geared towards major-related internships. There is also a second type of internship, which requires 120-hours of participation and are not major-related; it focuses on students gaining transferable skills such as problem solving, team building, and/or communication.

Who oversees internship programs at the College?

There is an internship Program Manager at the University Career Center (UCC) who supports non-credit internships. Some faculty and employers collaborate with the UCC to access resources to support their students' internships, while other work independently without coordinating with the Center. In terms of additional staff who support the UCC, one full-time advisor offers career counseling, as well as support services for student internships (e.g., mock-interviews sessions, connect with college liaisons, and/or learn about employer opportunities). Another service is the opportunity for students to rent clothing for an upcoming interview. The UCC also has a Peer Career Advisors Program that supports student career exploration via peer-to-peer advising, and career development assistance.

The UCC also invites employers to the college for campus internship fairs. There are usually two internship/ career fairs (Fall and Spring Semester) hosted during the academic year, that often have a strong focus on business-related internships while also having opportunities from other disciplines. Additionally, the Center supports an online job and internship portal called Job Mine. The UCC reported that during the 2017-2018 academic year, 319 students participated in an internship or co-op and 12 additional students participated in a non-paid internship. The College of Business Administration had 73 students on internships, College of Engineering had 186 students, College of Liberal Arts had 42 students, College of Science had 15, College of Health Sciences had 9 students, College of Education had 5 students, and School of Nursing reported not having students complete an internship during the 2017-2018 year.

Last, it is worth noting that the UCC collects a considerable amount of data on internship programs and participation, which in our experience is unusual among colleges and universities in our study. For example, the data indicate that among the paid internship positions for students at the college, the median hourly wage ranged between $7.45 and $15.00. The living wage in the city for a single adult is $10.40 and for a family of four is $24.33, so weather or not the median hourly wage for interns will be sufficient will depend on the student's family situation.

In addition to the activities of the UCC, individual departments and academic programs oversee for-credit internships, and faculty and/or staff within these programs coordinate with employers to identify appropriate internship locations and tasks, advise students throughout the internship, and ensure that the experiences are sufficient to be awarded academic credit. A distinction should be made between internships or practicum that must comply with professional accreditation requirements (e.g., social work, teacher education) and those that do not, as they are subject to different levels of oversight and program requirements.

What is involved in the administration of internship programs?

The University Career Center supports internships in multiple ways: by providing career coaching, resume reviews, mock interviews, professional/business clothes, and several career fairs where students can connect with employers for internships and career purposes. Additionally, the Manager of UCC conducts outreach to local employers and community organizations to identify placements for internships and collects data on the internship experiences on campus. The UCC is also pursuing an innovative way to support students by assessing students' internship experiences by asking students about their experience through an online questionnaire. The goal is to identify the different components of the internship so that future students are familiar with the overall internship. This assessment provides clarity on the overall internship process to support perspective students.

Faculty in programs with internship requirements and/or courses are also involved in several activities to support students during the internship experience. These department- or faculty-specific support services include faculty or program coordinators connecting students to internship sites, monitoring the quality of internships in real-time, and addressing any questions or issues that may arise for students or supervisors.

When do these activities take place?

Finally, the timing of student internships varies widely across departments and programs on campus. Internships tied to particular courses are usually completed during the semester in which the course is completed. Some academic programs also have a standardized timeframe for internships during the academic year (i.e., business marketing) during the fall and spring semester. Internship opportunities often become available during the academic year—depending on employers' needs—and several students in our focus groups stated that they preferred summer internships, which they found easier to schedule because they were not enrolled in courses for the summer term.

V. RESULTS: Insights from educators and employers about the value of internships for students

University personal (i.e., directors, faculty, and career services staff) interviewed at the college cited numerous reasons for their support of internship programs. Internship coordinators emphasized the importance of internships as opportunities for professional development and socialization into the world of work that would further students' post-graduation success. One educator noted that internships are "incredibly important for the students' professional development," adding that the opportunities that internships might provide to students include participation in meaningful shadowing experiences and networking with professionals. Another educator similarly saw internships as an opportunity to gain knowledge appropriate for new professionals, "like [at] the beginning of the job you are going to perform."

Personnel emphasized that internships allow students to learn professional culture, communication, and specific job skills. Indeed, one faculty member described efforts undertaken in his department to increase students' access to internship opportunities and improve competitiveness for different positions: "to recognize that there are an awful lot of opportunities out there for transferable skilled internships" for students.

Employers that had partnerships with the college highlighted the importance of internships as a way to "provide the students with the best opportunities possible." An employer shared specific and intentional reasons to hire interns, including that it: (1) develops a pipeline of future associates; (2) increases company/organization productivity; (3) adds fresh and new perspectives; (4) increases retention among future employee; and (5) provides the opportunity to give back to the community. Overall, internships were viewed as an investment for the company. Employers also shared important concerns and potential reasons not to hire interns: (1) if the company is short staffed interns should not be hired to replace full-time associates; (2) if employers are too busy to provide mentorship to interns; and (3) if employers are unable to provide clear directions for tasks and projects and provide meaningful feedback. Taken together, the educators and employer described being involved in internships as a way to increase students' access to opportunity, support students' career development, and increase students' post-graduation marketability. Internships at the college allow for students to gain practical experience as a professional under conditions conducive to their educational development, transform their education into meaningful work, and develop critical skills such as time and project management, communication, entrepreneurship, and problem-solving.

VI. RESULTS: Which students are taking internships

In this section, we present findings from the online survey regarding the number of students at the college who have (and have not) participated in an internship experience.

Survey results: How many students are participating in internships?

One of the most fundamental questions facing research, policy, and practice on college internships is how many students are participating in these programs. In our T1 study, we collected 233 responses from the students. Among them, about 25.8% (n = 60) have participated in internship programs in the past 12 months (see Figure 1). Forty-one out of the 60 students (68.3%) had one internship experience, and 14 students (23.3%) had two. The rest of the students (6.7%) had three or more internships.

Figure 1. In the past 12 months, have you participated in an internship? (n = 233)

Yes   60 (25.8%)
No   173 (74.2%)

These results indicate that a large number – over 70% of the study sample – have not had any internship experience. This finding should be carefully interpreted and considered along with other issues, including barriers to participation for students (e.g., compensation), availability of employer hosts, and requirements of and relevance for individual students and/or their academic programs to complete an internship. In the following sections of this report, we examine some of the factors associated with internship participation.

Survey results: Are there any demographic, life circumstance, psychological, or program characteristics that are associated with participation and non-participation in internship programs?
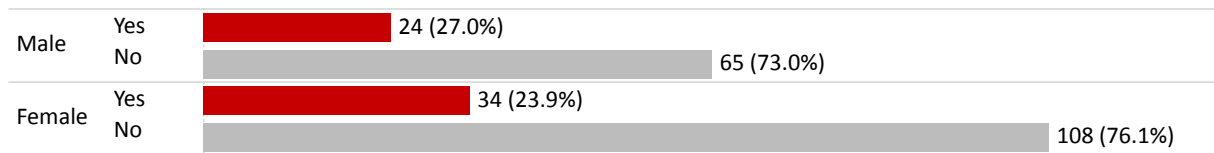
A wide range of factors may explain why a student elects to take an internship (or not), and understanding these factors is essential for institutional stakeholders who aim to improve access to these workplace learning experiences. In this section we report findings regarding differences in internship participation according to four categories: demographic variables (i.e., gender, race/ethnicity, first-generation college status, disability status, and parents' income), life circumstances (i.e., employment status, food insecurity, paying rent or mortgage), psychological variables (i.e., career adaptability), and features of academic programs (i.e., requirement to take internships, academic enrollment, major, and GPA).

Demographic characteristics and internship participation

Minimal research exists on the relationship between participation in internship programs and demographic characteristics of college students. Given growing concerns about access to internship programs—particularly for students of color, low-income and first-generation students—we examine the issue of equitable access for groups of students.
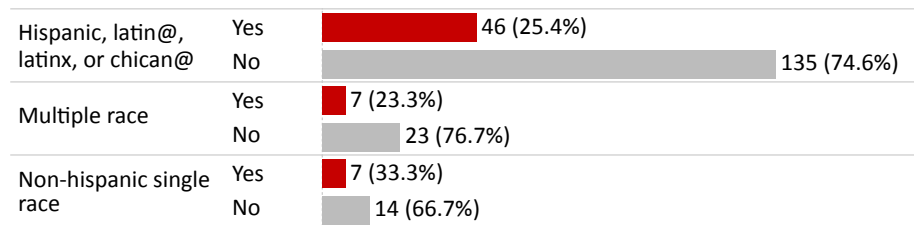
The results show small differences in participation rate for female and male students (see Figure 2; 23.9% vs. 27%). Most of the students (77.6%, n = 232) who participated in the survey identified themselves as Hispanic, Latina/o, Latinx, or Chicana/o. Of these students, only one fourth (n = 46) had internship experiences (See Figure 3). There were no statistically significant differences in internship participation rates based upon participants' reported first-generation status; however, descriptively, internship participation of continuing generation students (29.9%, n = 35) was higher than that of first generation students (20.9%, n = 24, see Figure 4).

Figure 2. Internship in the Past 12 Months (Yes/No), by Gender (n = 231)

Male	Yes	24 (27.0%)
	No	65 (73.0%)
Female	Yes	34 (23.9%)
	No	108 (76.1%)

Note: Transgender, Non-binary, and Other were excluded from this figure due to small sample size.

Figure 3. Internship in the Past 12 Months (Yes/No), by Race / Ethnicity (n = 232)

Hispanic, latin@, latinx, or chican@	Yes	46 (25.4%)
	No	135 (74.6%)
Multiple race	Yes	7 (23.3%)
	No	23 (76.7%)
Non-hispanic single race	Yes	7 (33.3%)
	No	14 (66.7%)

Note: Because the student population at this college is primarily Hispanic. We regrouped our students' self-reported race into three groups: 1) Hispanic, Latina/o, Latinx, or Chicana/o. 2) Multiple Race and 3) Non-Hispanic single race. One student did not report race, so we removed that individual from our calculation.

Figure 4. Internship in the Past 12 Months (Yes/No), by First Generation College Student Status (FGS) (n = 232)

First-generation students	Yes	24 (20.9%)
	No	91 (79.1%)
Continuing-generation students	Yes	35 (29.9%)
	No	82 (70.1%)

Note: One student did not answer this question, so we removed that individual from our calculation.

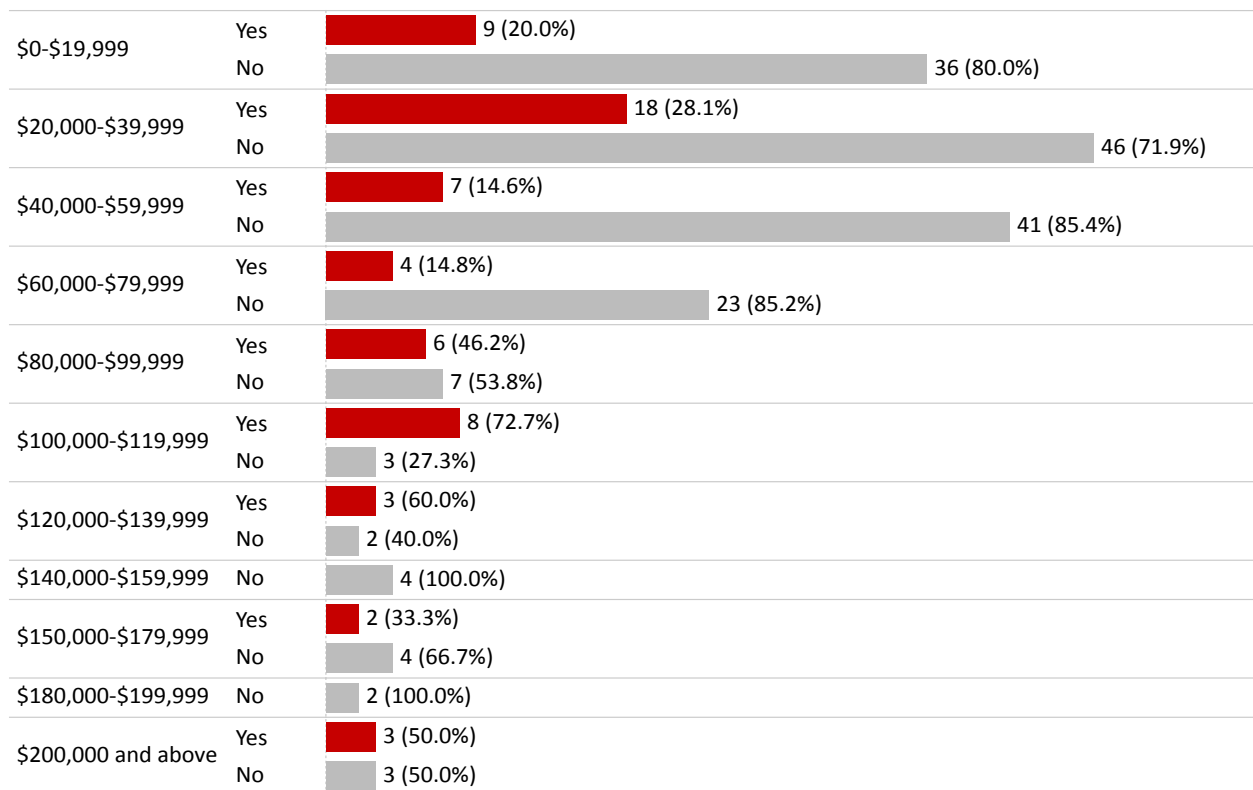Parental income is an important indicator of students' socio-economic status. Figure 5.1 shows the statistically significantly difference[2] of internship participation rates across those income brackets[3]. We further explored the relationship between internship participation and parental income based on state and local median annual income. The median annual household income in 2018 was $60,629[4] in Texas. We grouped students' self-reported parental income into below and above $60,000, roughly below and above Texas' median annual household income. Figure 5.2 shows that students from above the state median household income is more likely to have participated in internships than those with below median household income (45.2% vs. 21.7%). Our linear probability model (LPM)[5] indicates the same results with statistical significance[6]. These results suggest that students with low parental income may require additional support, encouragement, or assistance with securing an internship.

Figure 5.1. Internship in the Past 12 Months (Yes/No), by Parental Income (n = 231)

Income	Yes/No	Count (%)
$0-$19,999	Yes	9 (20.0%)
	No	36 (80.0%)
$20,000-$39,999	Yes	18 (28.1%)
	No	46 (71.9%)
$40,000-$59,999	Yes	7 (14.6%)
	No	41 (85.4%)
$60,000-$79,999	Yes	4 (14.8%)
	No	23 (85.2%)
$80,000-$99,999	Yes	6 (46.2%)
	No	7 (53.8%)
$100,000-$119,999	Yes	8 (72.7%)
	No	3 (27.3%)
$120,000-$139,999	Yes	3 (60.0%)
	No	2 (40.0%)
$140,000-$159,999	No	4 (100.0%)
$150,000-$179,999	Yes	2 (33.3%)
	No	4 (66.7%)
$180,000-$199,999	No	2 (100.0%)
$200,000 and above	Yes	3 (50.0%)
	No	3 (50.0%)

Note: Two students declined to answer this question, so we removed those individuals from our calculation.

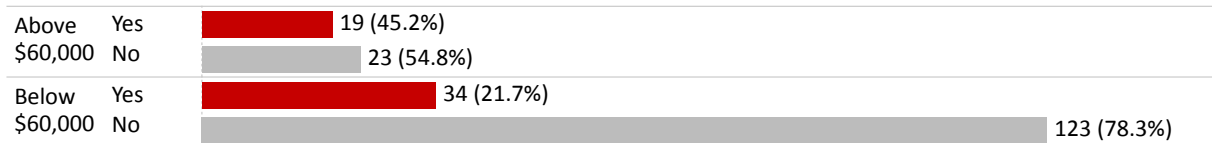[2] Those differences are statistically significant (p=0.002) based on a Chi-square test

[3] Although we are using p value to infer statistical significance in the current study, it is worth noting that p value should not be taken as a definitive validation of relationships between variables. Many factors may influence p value such as effect size, size of sample and spread of the data (Dahiru, 2008; Ziliak and McCloskey, 2008), so p value does not necessarily preclude a cautious analysis of results based on survey data. p should be used as a warning signal on the possibility how likely it is that any observed difference between groups is due to chance.

4 The median annual income of Texas comes from Data USA: https://datausa.io/profile/geo/texas#economy

[5] A linear probability model (LPM) is a regression model where the outcome variable is a binary variable, and one or more explanatory variables are used to predict the outcome. We chose LPM for its ease of interpretation.

[6] The LPM result indicates that students from above the state median household income is 24.3% more likely to have participated in internships than those with below median household income (p = 0.002).

Figure 5.2. Internship in the Past 12 Months (Yes/No), by Parental Income Below and Above Median Annual income (n = 199)
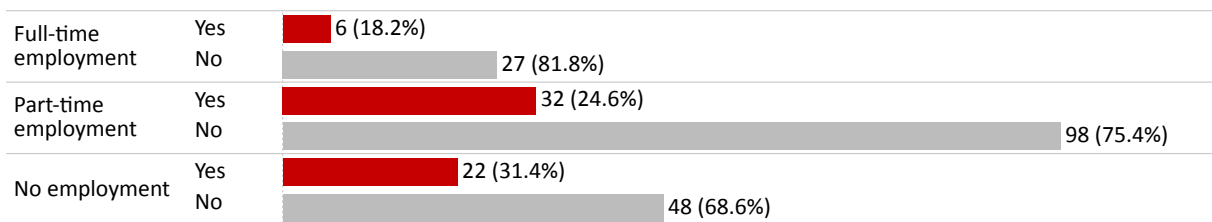

Life circumstances and internship participation

Next, research on college affordability and students' basic needs has indicated that issues such as food insecurity, rising costs of college tuition, and related issues have a negative impact on student persistence and achievement (e.g., Maroto, Snelling & Linck, 2015). To examine these potential constraints we report employment status, reliance on food assistance, and challenges with the cost of housing. In addition, we examine the relationship between these variables and internship participation. Finally, given that several students reported being employed at least part-time, we examined the extent to which students believe that their current job provides them with skills and knowledge that will allow them to be successful in their desired future careers.

Figure 6 displays internship participation by employment status (PT/FT/No-employment). For students who worked at a full-time job that is not an internship during the last 12 months, only 18.2% had participated in internships. Students who had no employment were most likely to participate in internships.

Figure 6. Internship in the Past 12 Months (Yes/No) by Employment Status (n = 233)

Awareness about college students' challenges with securing adequate food, or what is known as food insecurity, is growing in the U.S. (Broton & Goldrick-Rab, 2016). In our survey, we included a question asking if students had received free food or meals using the Supplemental Nutrition Assistance Program or a food bank, and the results indicate approximately 6.9% (n = 16) reported relying on these resources in the past 30 days. Those who did not reply on food assistance are more likely to participate in internships, although the differences are not statistically significant (see Figure 7). Given that housing costs can strain a students' financial situation, we also asked about problems with paying rent or mortgages, with 6.4% (n = 15) of students reporting housing cost problems (see Figure 8). Due to the small number of students who reported yes to the constraint, we will not use the current data to infer their relationships with internship participation.

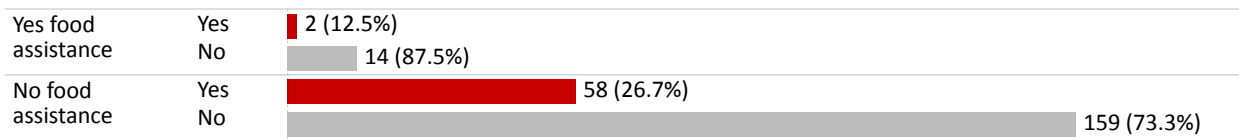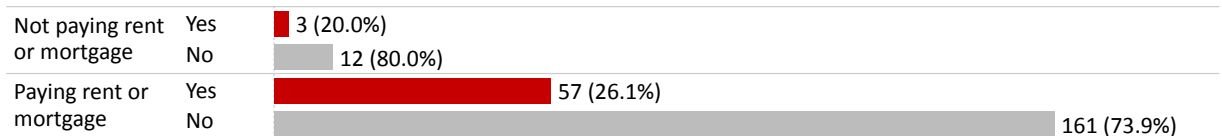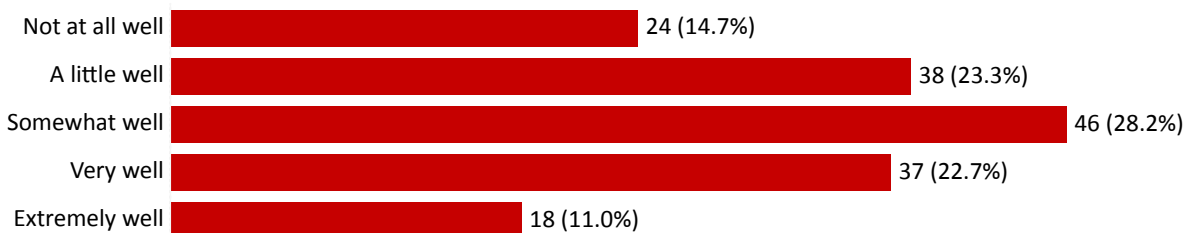**Figure 7. Internship in the Past 12 Months (Yes/No) by Students Requiring Food Assistance (n = 233)**

Yes food assistance	Yes	2 (12.5%)
	No	14 (87.5%)
No food assistance	Yes	58 (26.7%)
	No	159 (73.3%)

Figure 8. Internship in the Past 12 Months (Yes/No) by Students Having Trouble Paying Rent or Mortgage (n = 233)

Not paying rent or mortgage	Yes	3 (20.0%)
	No	12 (80.0%)
Paying rent or mortgage	Yes	57 (26.1%)
	No	161 (73.9%)

Given that many students work part- or full-time, we explored the extent to which they perceived their job as contributing to their career goals (see Figure 9). We see in Figure 9 that only 33.7% (n = 55) of the students with a non-internship job felt that their main job was providing important career-related skills, very well or extremely well. In contrast, 38% (n = 62) of the students reported that their main job provided them with important skills a little well or not at all well. These data suggest that converting FT/PT jobs into internships would not work very well for this population.

Figure 9. How well do you think that your main job provides you with important work-related skills, knowledge, and abilities that you will need in your desired career? (n = 163)

Not at all well	24 (14.7%)
A little well	38 (23.3%)
Somewhat well	46 (28.2%)
Very well	37 (22.7%)
Extremely well	18 (11.0%)

Psychological factors and internship participation

Research in counseling and vocational psychology indicates that psychological factors are also strongly related to a variety of career-related outcomes. For instance, career adaptability is a psychosocial resource that facilitates a person's ability to manage career-related tasks and changes (Savickas, 1997), which is significantly associated with one's adaptive behaviors (e.g., career planning, career exploration, self-efficacy), employability, vocational self-identity, and satisfaction regarding life, career and school experiences (Rudolph, Lavigne, & Zacher, 2017). Scholars argue that career adaptability is especially valuable in the current labor market given frequent job and/or career changes, rising precarity (and lower job security) of work, and unanticipated shocks to regional and national labor markets that may lead to mass layoffs and forced job and/or career changes (e.g., 2008 recession, COVID-19 pandemic).

In this study, we examined the relationship between career adaptability and internship programs, using a validated career adaptability survey developed by Savickas and Porfelli (2012). These survey items encompass four sub-scales including 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 current data, range from 0.69 to 0.77.

The results indicate that the survey respondents rate themselves relatively as follows across the career adaptability sub-scales: concern (M=3.82, SD=0.65), control (M=3.85, SD=0.69), curiosity (M=3.65, SD=0.73), and confidence (M=3.88, SD=0.69). The mean scores for all sub-scales were similar between the two groups: Concern (Internship, 4.04; No Internship, 3.75) Control (Internship: 3.81, No Internship, 3.85) Curiosity (Internship: 3.73, No Internship, 3.62) Confidence (Internship, 3.86; No Internship, 3.78). None of these differences were found to be statistically significant.

To illustrate the types of questions that are included in the career adaptability survey, we report one example for each sub-scale from the dataset (see Figures 10 – 13).

Figure 10. Please rate how strongly you have developed each of the following abilities: Becoming aware of the educational and vocational choices that I must make (n = 233)

Rating	Count
Not strong	5 (2.1%)
Somewhat strong	21 (9.0%)
Strong	65 (27.9%)
Very strong	79 (33.9%)
Strongest	63 (27.0%)

Figure 11. Please rate how strongly you have developed each of the following abilities: Taking responsibility for my actions (n = 233)

Rating	Count
Somewhat strong	14 (6.0%)
Strong	38 (16.3%)
Very strong	93 (39.9%)
Strongest	88 (37.8%)

Figure 12. Please rate how strongly you have developed each of the following abilities: Exploring my surroundings (n = 233)

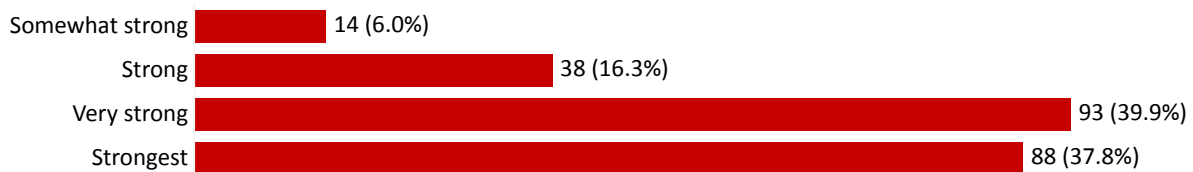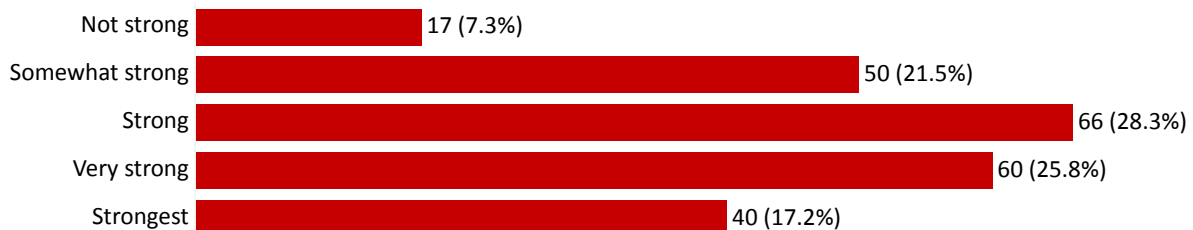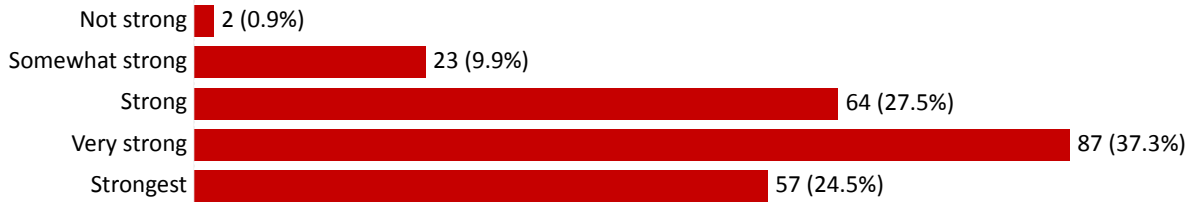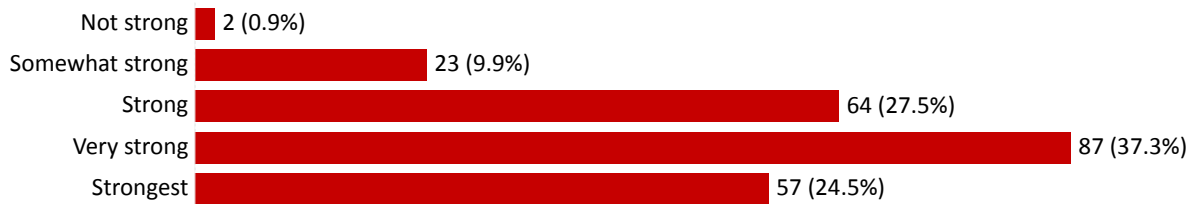| Rating	Count
Not strong	17 (7.3%)
Somewhat strong	50 (21.5%)
Strong	66 (28.3%)
Very strong	60 (25.8%)
Strongest	40 (17.2%)

Figure 13. Please rate how strongly you have developed each of the following abilities: Performing tasks efficiently (n = 233)

Not strong ▌2 (0.9%)
Somewhat strong ▌23 (9.9%)
Strong ▌64 (27.5%)
Very strong ▌87 (37.3%)
Strongest ▌57 (24.5%)

Features of academic programs and internship participation

It is also possible that some features of a students' academic program and performance (e.g., whether or not

Not strong ▌2 (0.9%)
Somewhat strong ▌23 (9.9%)
Strong ▌64 (27.5%)
Very strong ▌87 (37.3%)
Strongest ▌57 (24.5%)

an internship is required for graduation, part-time versus full-time enrollment status, disciplinary sector, grade point average) may be related to their participation in internships. Here, we examine the relationship between students' academic programs and students' participation in internship programs.

Figure 14. Relationship between Internship Participation and whether or not an internship was required to graduate from your academic program (n = 233)

Required	Yes	15 (34.9%)
	No	28 (65.1%)
Not required	Yes	40 (26.3%)
	No	112 (73.7%)
Not sure	Yes	5 (13.2%)
	No	33 (86.8%)

The results indicate that 18.5% (n = 43) of the respondents were in academic programs that required internships. Figure 14 shows that these students were more likely to participate in an internship compared to students who were not required to take an internship to graduate (34.9% vs. 26.3%). There were also a noticeable proportion (16.3%, n = 38) of students who were unsure if their program required an internship. These students were less likely to participate than students who were sure (13.2% vs. 28.2%).

In addition, 84.1% (n = 233) of the survey respondents were full-time students and 15.9% (n = 233) were part-time students. Internship participation rate of full-time students (26.5%) is higher than that of the part-time students (21.6%), although the difference was not statistically significant (Figure 15).
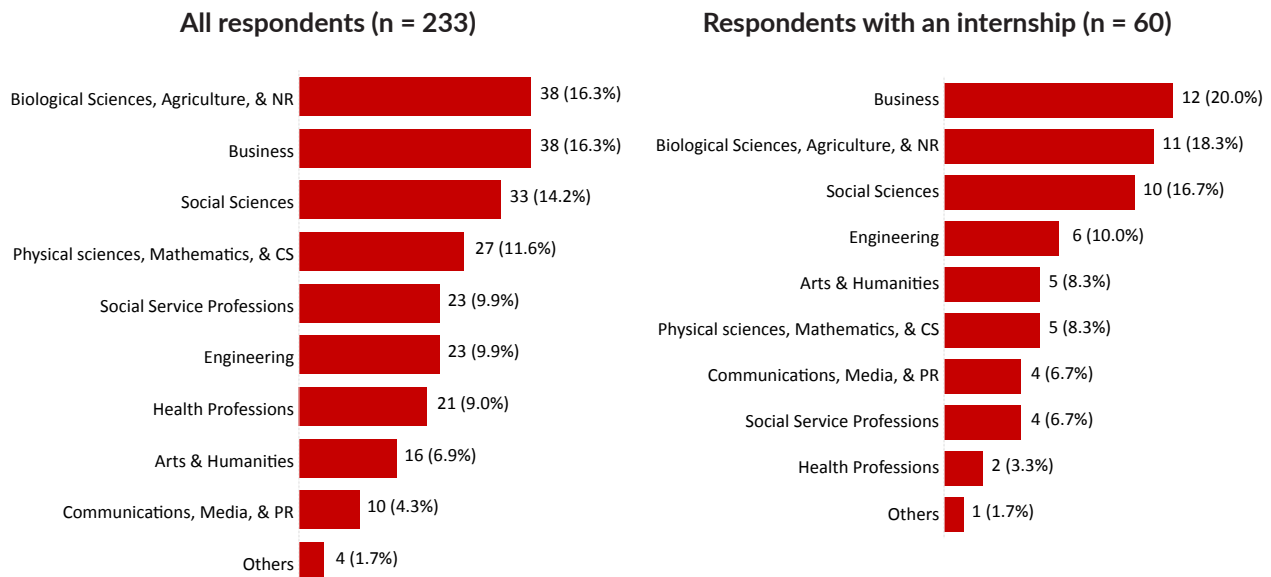
Figure 15. Internship in the Past 12 Months (Yes/No) by Enrollment Status (n = 233)

Full time, at least 12 credits	Yes	52 (26.5%)
	No	144 (73.5%)
Part-time, less than 12 credits	Yes	8 (21.6%)
	No	29 (78.4%)

Additionally, we examined internship participation rates by disciplinary sectors. We adopted the major field categories defined by the National Survey of Student Engagement (NSSE, 2018). Figure 16.1 presents the distribution of seven majors for all participating students (n = 233, left figure) as well as for participating students who participated in an internship (n = 60, right figure). The results indicate that the disciplinary sector with the largest proportion of students was Business (16.3%, n = 38) and that the disciplinary sector with largest proportion of students who completed an internship was also Business (20%, n = 12).
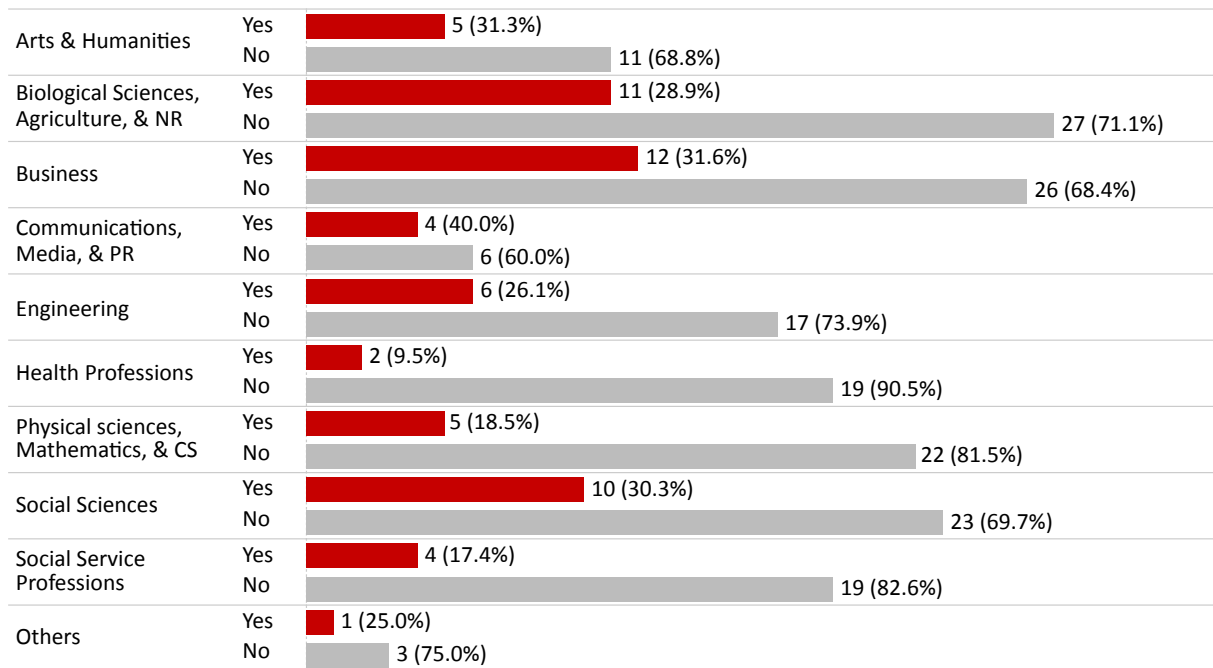
Figure 16.2 displays internship participation rates by disciplinary sectors. Communications, Media, & Public Relations has the highest participation rate (40.0%, n = 4), followed by Business (31.6%, n = 12), Arts & Humanities (31.2%, n = 5), Social Sciences (30.3%, n = 10), Biological Sciences, Agriculture, & Natural Resources (28.9%, n = 11), Engineering (26.1%, n = 6), Physical sciences, Mathematics, & Computer science (18.5%, n = 5), Social Service Professions (17.4%, n = 4), and Health Professions (9.5%, n = 2). A Fisher's exact test indicated that internship participation rates were not significantly differ across those program disciplinary sectors.

Figure 16.1. Students' distribution by Program Disciplinary Sector

All respondents (n = 233)

Sector	Value
Biological Sciences, Agriculture, & NR	38 (16.3%)
Business	38 (16.3%)
Social Sciences	33 (14.2%)
Physical sciences, Mathematics, & CS	27 (11.6%)
Social Service Professions	23 (9.9%)
Engineering	23 (9.9%)
Health Professions	21 (9.0%)
Arts & Humanities	16 (6.9%)
Communications, Media, & PR	10 (4.3%)
Others	4 (1.7%)

Respondents with an internship (n = 60)

Sector	Value
Business	12 (20.0%)
Biological Sciences, Agriculture, & NR	11 (18.3%)
Social Sciences	10 (16.7%)
Engineering	6 (10.0%)
Arts & Humanities	5 (8.3%)
Physical sciences, Mathematics, & CS	5 (8.3%)
Communications, Media, & PR	4 (6.7%)
Social Service Professions	4 (6.7%)
Health Professions	2 (3.3%)
Others	1 (1.7%)

NR = natural resources; CS = computer science; PR = public relations

16.2. Relationship between Internship Participation and Students' Program Sectors (n = 233)
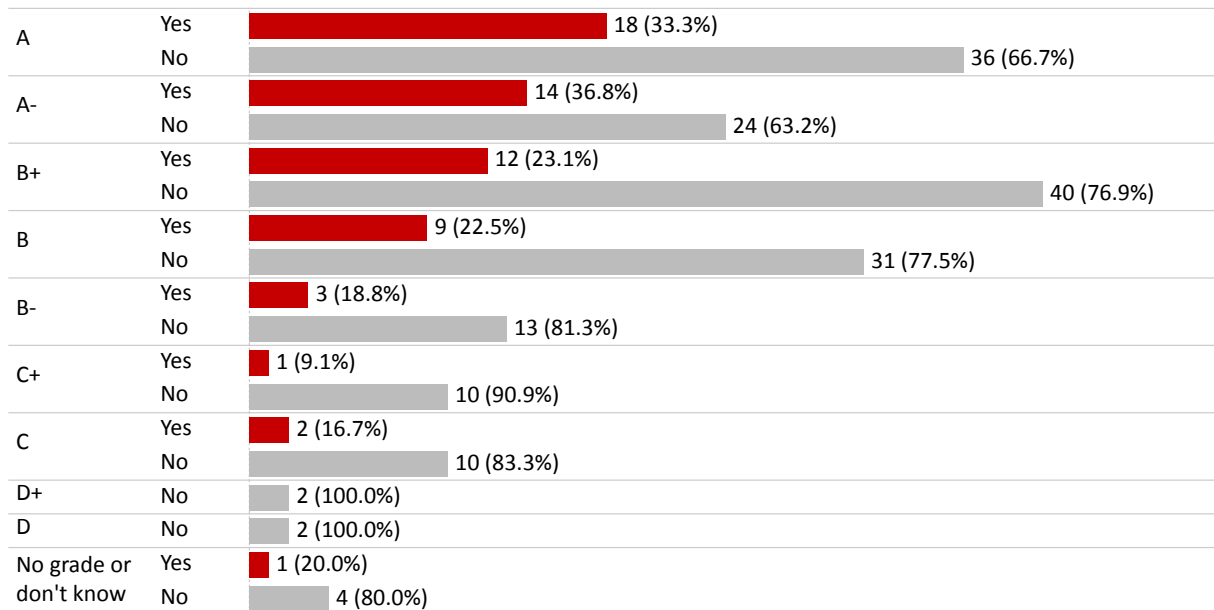
Program Sector		Participation
Arts & Humanities	Yes	5 (31.3%)
	No	11 (68.8%)
Biological Sciences, Agriculture, & NR	Yes	11 (28.9%)
	No	27 (71.1%)
Business	Yes	12 (31.6%)
	No	26 (68.4%)
Communications, Media, & PR	Yes	4 (40.0%)
	No	6 (60.0%)
Engineering	Yes	6 (26.1%)
	No	17 (73.9%)
Health Professions	Yes	2 (9.5%)
	No	19 (90.5%)
Physical sciences, Mathematics, & CS	Yes	5 (18.5%)
	No	22 (81.5%)
Social Sciences	Yes	10 (30.3%)
	No	23 (69.7%)
Social Service Professions	Yes	4 (17.4%)
	No	19 (82.6%)
Others	Yes	1 (25.0%)
	No	3 (75.0%)

Academic performance and internship participation

Finally, we examined the relationship between participating students' grade-point average (GPA) and internship participation. The GPA variable in our dataset is a self-reported measure where we asked the student a single question: "Thinking about the past 2018-19 academic year, which of the following best describes your grade point average?' (10 choices from A to D). We then recoded the responses to match standard GPA reporting (i.e., 4.0 = A+/A, 3.7 = A-, 3.3 = B+, 3.0 = B, 2.7 = B-, C+ = 2.3, C = 2.0, C- = 1.7, D+ = 1.3, D = 1.0). The frequencies for each response are included by internship participation in Figure 17. Our results show that there exists a positive and statistically significant relationship between students' grade-point average (GPA) and internship participation, such that the higher the students' GPA the more likely they are to have participated in an internship[7]. These results suggest that students with low GPAs (B- and below) may require additional support, encouragement, or assistance with securing an internship. Figure 17 lists the internship participation differences among different GPA groups.

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[7] Linear probability regression result indicates that a one more grade point increase in GPA is associated with a 11.8% increase in the probability that a student is taking an internship. This means that an increase from C average (2.0) to B average (3.0) is associated with a nearly 11.8% increase in the probability of participating in an internship. This result was statistically significant after controlling for a number of demographic variables in the model.

Figure 17. Relationship between Internship Participation and Students' Grade Point Average (n = 232)

A	Yes	18 (33.3%)
	No	36 (66.7%)
A-	Yes	14 (36.8%)
	No	24 (63.2%)
B+	Yes	12 (23.1%)
	No	40 (76.9%)
B	Yes	9 (22.5%)
	No	31 (77.5%)
B-	Yes	3 (18.8%)
	No	13 (81.3%)
C+	Yes	1 (9.1%)
	No	10 (90.9%)
C	Yes	2 (16.7%)
	No	10 (83.3%)
D+	No	2 (100.0%)
D	No	2 (100.0%)
No grade or don't know	Yes	1 (20.0%)
	No	4 (80.0%)

Note: One student did not answer this question, so we removed that individual from our calculation.

VII. RESULTS: Barriers to participation in internships

In this section, we present findings from the online survey and student focus groups regarding barriers to participation in internships for students at the college. Access to internships is a critical issue with respect to the problems of inequality and social mobility facing higher education and society. Since internships may provide students with valuable social and cultural capital and enhance their employability in the labor market, these barriers to internship participation are important to consider.

Survey results: How many students wanted to participate in an internship but could not? If not, why not?

For the 173 students who did not participate in an internship, 76.9% (n = 133) of them had wanted to do so (see Figure 18).

Figure 18. You indicated that you did not participate in an internship in the past 12 months. In the past 12 months, were you interested in participating in an internship? (n = 173)

Interest	yes	133 (76.9%)
Interest	no	40 (23.1%)

Next, we asked them to rank the various reasons from most important and least important for not pursuing an internship. Figure 19.1 presents the frequency and percentages of students who cited certain barriers to participation. In general, 66.9% (n = 89) reported a heavy course load as a barrier, 60.9% (n = 81) of students reported their need to work at current job as a barrier, 51.9% (n = 69) reported a lack of internship opportunities as a barrier, 33.1% (n = 44) reported insufficient pay offered as a barrier, 30.8% (n = 41) reported a lack of transportation as a barrier, and 18.8% (n = 25) reported a lack of childcare as a barrier to internship participation.

Figure 19.2 shows how students ranked the barriers overall. The reasons that students ranked as the number one important factor influencing their decision not to pursue an internship included: their heavy course load (n = 46), needs to work at current job (n = 37), and a lack of internship opportunity (n = 21). The number two ranked reasons included: a need to work at current job (n = 31), a heavy course load (n = 30), and a lack of internship opportunity (n = 21). Figure 19.2 also presents the third to sixth ranked reasons and their corresponding frequencies. Insufficient pay stood out in the third and fourth ranked reasons. In sum, one's need to work at current job, heavy course load, lack of opportunity in one's field, and insufficient pay were the most commonly reported reasons reported by students for not pursuing an internship.

Figure 19.1. In the past 12 months, why were you not able to pursue an internship? (n = 119)
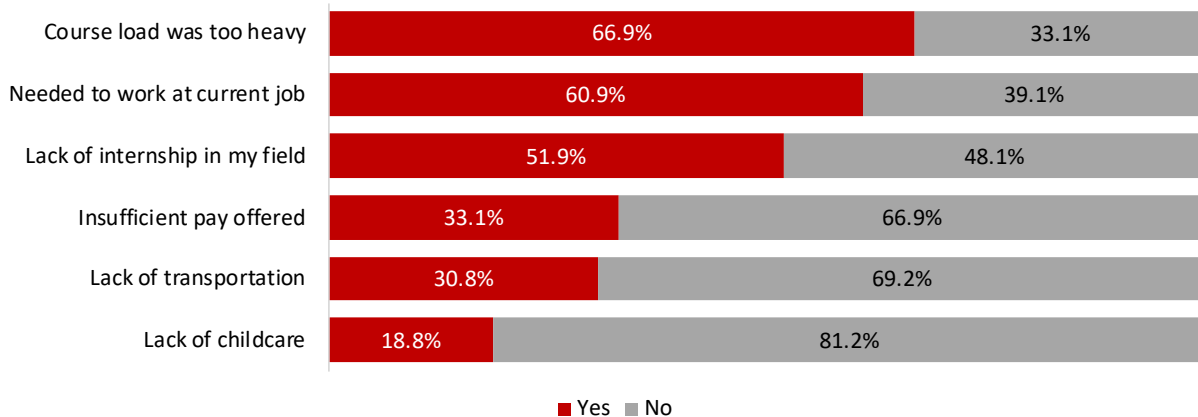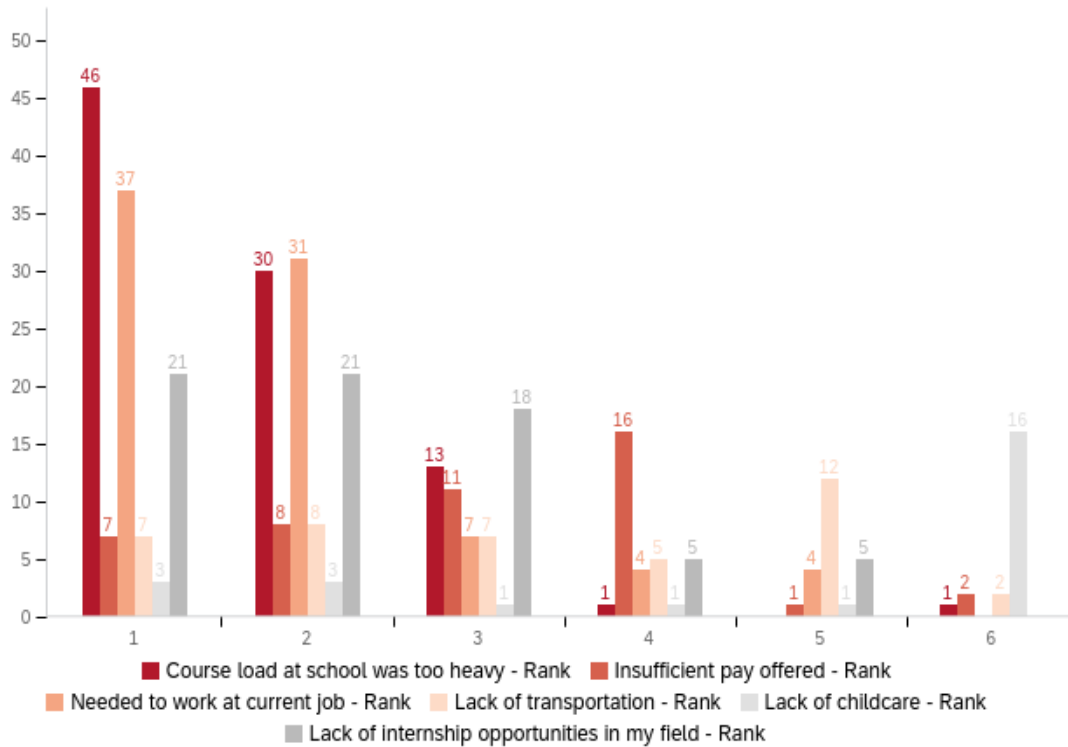

Category	Yes	No
Course load was too heavy	66.9%	33.1%
Needed to work at current job	60.9%	39.1%
Lack of internship in my field	51.9%	48.1%
Insufficient pay offered	33.1%	66.9%
Lack of transportation	30.8%	69.2%
Lack of childcare	18.8%	81.2%

■ Yes ■ No

Figure 19.2. Rank the reasons from most important to least important for not pursuing an internship.

Focus Group Themes: What concerns and difficulties do students describe as impacting their decisions about whether to participate in internships?

Data from student focus groups with 13 students helped to further highlight some of the concerns and issues that students consider when deciding whether to pursue an internship. Students discussed several barriers to their participation in internships, including financial considerations, a competitive application process, and identifying university supports for internship opportunities. These themes and examples are summarized in Table 3 and further elaborated upon in the text that follows.

Table 3. Student Concerns and Difficulties in Participating in Internships (n = 13)*

Concern/Difficulty	Examples
Financial considerations	*Issues with the need for financial stability, inability to take unpaid internships*
Competitive application process	*Issues with the competitive application process; competing with students from top tier schools*
Identifying university personal	*Issues with being unsure on who to contact at the University*
*This sample includes all focus group participants from the college; these difficulties include those that were discussed most frequency, in descending order of frequency	

Students consider finances to varying degrees. One focus group discussion was particularly illustrative of this, and one of the students stated, "finance has been one of my biggest ones [concerns with internships]." In a different interview, another student reflected this sentiment and described how an internship might put at risk his regular, paid, and necessary employment:

> I do have a job that I've been with for like two and a half years, and I mean that would mean probably leaving my job. I don't want to lose my job. The summer internship that I want to do would have been a month-long outside of the city, and yeah, leaving my job is not an option.

Overall, students felt that without enough compensation, sizeable scholarships, or generous family support, these internships seem impossible for students to take even though many are reputable. A second challenge that students expressed for obtaining an internship opportunity was the competitive nature of the application vetting process. For example, several students who have had an internship felt they were competing with students who were from more "prestigious" institutions. A student described the competitive nature of the process by saying,

> I think it [an internship] is doable by any competitive person. But sometimes if you're really going for that prestige value or you're really going towards that – you know, sometimes just because my college isn't as prestigious as quote unquote "Harvard" or some of these other schools, like it's not the same work.

A third concern was not knowing whom to contact at the University for internship opportunities. Students who indicated not knowing who to contact also felt that there were larger numbers of internships offered to business and STEM students, and not as many offered for students in the arts, humanities, or social science fields. There was a sense that the internship fairs held in the Fall and Spring Semester were "mostly business-orientated" and that "it didn't apply to them" or that it "didn't fit with their academic and future interests." Students wanted more institutional support to help locate and apply for internships, and acknowledged that this support would be particularly important and necessary for Hispanics, and students from disciplines other than STEM or business.

VIII. RESULTS: What types of internships are students at the college taking?

In this section, we present findings regarding the types of internship programs that students at the college have taken, and their experiences during their internships. After describing key features of students' internship programs from the survey data (e.g., organization type, sector, length, compensation), we then report how students described their internship with respect to characteristics that the literature suggests are associated with positive student outcomes and experiences (e.g., supervisor support, task clarity, etc.). Finally, we discuss students' observations about their internship experiences from focus group discussions.

Survey results: Features of internship programs

For the 60 students at the college in our study sample that had taken an internship in the past year, as shown in Figure 20, 50.0% of them did so at a for-profit company, with the remainder at government agencies (16.7%) and non-profit organizations (33.3%). Figure 21 shows that many of these internships were concentrated in fields such as Other Services (except Public Administration) (21.7%), Professional, Scientific, and Technical Services (18.3%), Public Administration (10.0%) and Health Care and Social Assistance (10.0%), with the rest of the respondents being well dispersed among the remaining industries.

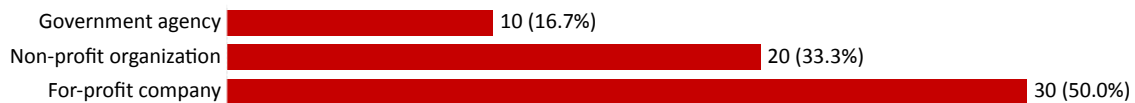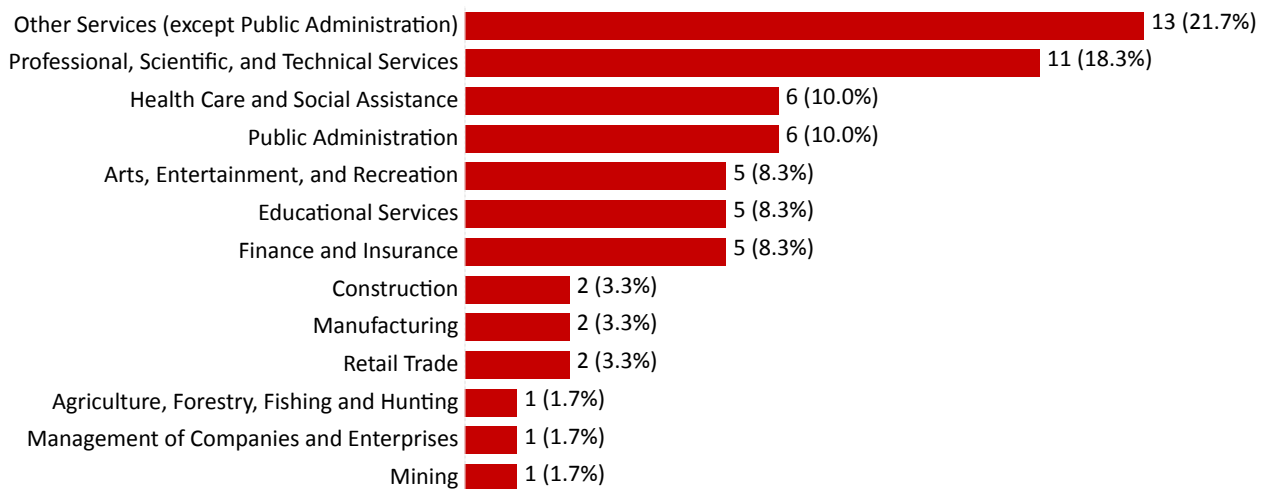**Figure 20. In what type of organization did you participate in this internship? (n = 60)**

Government agency	10 (16.7%)
Non-profit organization	20 (33.3%)
For-profit company	30 (50.0%)

Figure 21. In what industry or field was this internship? (n = 60)

Other Services (except Public Administration)	13 (21.7%)
Professional, Scientific, and Technical Services	11 (18.3%)
Health Care and Social Assistance	6 (10.0%)
Public Administration	6 (10.0%)
Arts, Entertainment, and Recreation	5 (8.3%)
Educational Services	5 (8.3%)
Finance and Insurance	5 (8.3%)
Construction	2 (3.3%)
Manufacturing	2 (3.3%)
Retail Trade	2 (3.3%)
Agriculture, Forestry, Fishing and Hunting	1 (1.7%)
Management of Companies and Enterprises	1 (1.7%)
Mining	1 (1.7%)

As shown in Figure 22, the largest proportion of survey respondents who had taken an internship for 9-12 weeks (38.33%). Further, 63.3% of these students were compensated for their internship work, whereas 36.7% were not (Figure 23). Thirty percent of the students (n = 18) were hourly paid. The average hourly payment is $15.42[8], which is above the estimates of living wages for one adult in Texas ($11.48) (MIT Living Wage Calculator, 2018).

Figure 22. For how many weeks did you participate in this internship? (n = 60)

Category	Value
1-4 weeks	3 (5.0%)
5-8 weeks	8 (13.3%)
9-12 weeks	23 (38.3%)
13-16 weeks	10 (16.7%)
17-20 weeks	7 (11.7%)
21-24 weeks	2 (3.3%)
More than 24 weeks	7 (11.7%)

Figure 23. Was the internship paid or unpaid? (n = 60)

Category	Value
Paid	38 (63.3%)
Unpaid	22 (36.7%)

Figure 24. Hourly compensation of internships (n = 38)

Category	Value
Paycheck based on hourly wages	18 (47.4%)
A lump sum stipend	9 (23.7%)
Bi-weekly paycheck based on a set salary	7 (18.4%)
Monthly paycheck based on a set salary	3 (7.9%)
Weekly paycheck based on a set salary	1 (2.6%)

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[8] Two outliers were removed for calculating the average hourly payment: one is $0.50c and the other is $3.00.

Survey results: presence of internship characteristics associated with positive student outcomes

Next, we turn to one of the primary research questions driving this study: What is the structure and format of internship programs that the students are taking? Examining this issue, we focus on features of internships that the research literature suggests are associated with positive student outcomes.

Link between academic program and internship

One of the core principles of experiential education is the integration of academic or theoretical concepts with opportunities to apply new knowledge in hands-on situations. Research on internships also indicates that close coordination between academic coursework and internship experiences is also linked to interns' satisfaction (e.g., Hergert, 2009).

For the students who participated in an internship at the college, 70.0% (n = 42) felt that their internship was very or extremely related to their academic coursework (Figure 25). In addition, 65% of the students reported that their academic program staff and internship supervisors cooperated very well or extremely well to ensure this integration. However, 13.3% (n = 10) of the students reported "a little well" or "not at all well" (Figure 26).

Figure 25. How related do you feel your internship was to your academic program? (n = 60)
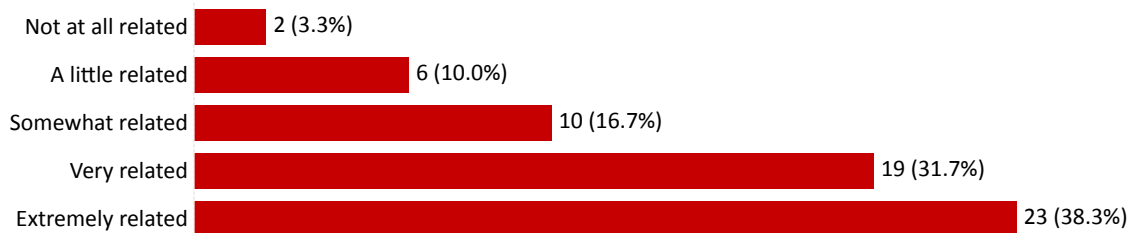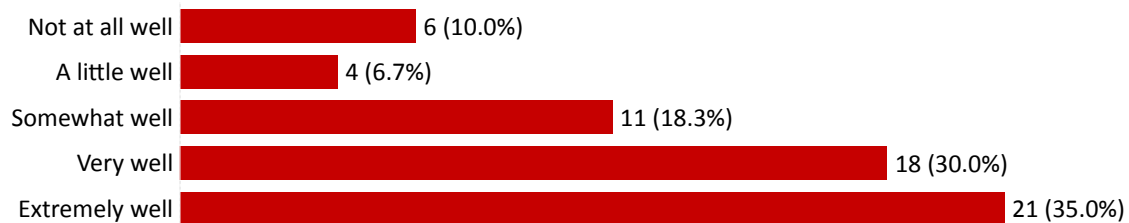
Not at all related	2 (3.3%)
A little related	6 (10.0%)
Somewhat related	10 (16.7%)
Very related	19 (31.7%)
Extremely related	23 (38.3%)

Figure 26. How well did your internship site supervisor and your academic program staff coordinate with one another? (n = 60)

Not at all well	6 (10.0%)
A little well	4 (6.7%)
Somewhat well	11 (18.3%)
Very well	18 (30.0%)
Extremely well	21 (35.0%)

Perceived supervisor support

Next, the literature indicates that supervisors' active support of interns' career development and on-the-job satisfaction is strongly associated with positive student outcomes (McHugh, 2017). Students rated four questions regarding how supportive their supervisors were by choosing from 1 = *not at all*, 2 = *a little*, 3 = *some*, 4 = *quite a bit*, to 5 = *a great deal*. The average score for the four questions equals 4.30 with a standard deviation 0.84. The four questions are: (1) In this internship, how much did your supervisor care about your

well-being? (2) In this internship, how much did your supervisor care about your satisfaction at work? (3) In this internship, how much did your supervisor appreciate the amount of effort you made? (4) In this internship, how much respect did you feel you received? Below we report results from two of these items as examples.

Among the sample students who had recently taken an internship, 78.3% (n = 47) reported that their supervisors cared about their satisfaction at work either quite a bit or a great deal (see Figure 27), and 83.3% (n = 50) reported that their supervisors appreciated the amount of effort they made either quite a bit or a great deal (see Figure 28). Taken together, these represent important indicators of supervisory support.

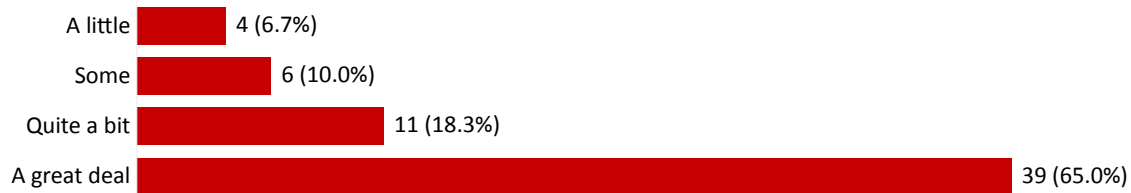**Figure 27. In this internship, how much did your supervisor care about your satisfaction at work? (n = 60)**

Not at all	1 (1.7%)
A little	4 (6.7%)
Some	8 (13.3%)
Quite a bit	17 (28.3%)
A great deal	30 (50.0%)

Figure 28. In this internship, how much did your supervisor appreciate the amount of effort you made? (n = 60)

A little	4 (6.7%)
Some	6 (10.0%)
Quite a bit	11 (18.3%)
A great deal	39 (65.0%)

Supervisor mentoring

Another aspect of supervisor behavior found in the literature to be positively associated with intern satisfaction is supervisor mentoring, which pertains to the provision of direction and feedback about task performance and career planning. For the survey, this construct was measured using five questions with a five-point Likert scale from 1 = *never to* 5 = *extremely often*. The average score for the five questions equals 3.77 with a standard deviation 0.89. The five questions are: (1) How often did your supervisor suggest specific strategies for achieving career goals? (2) How often did your supervisor encourage you to try new ways of behaving in the job? (3) How often did your supervisor give you feedback regarding job performance? (4) How often did your supervisor give you assignments that presented opportunities to learn new skills? (5) How often did your supervisor help you finish tasks or meet deadlines that otherwise would have been difficult to complete? Below we report results from two of these items as examples.

While about half of the participating students (51.6%, n = 31) reported that their supervisors encouraged them to try new ways of performing in the job very often and extremely often, and 70% (n = 42), it is concerning that 30% (n = 18) of them feel that their supervisors didn't or rarely encourage students to try new ways of performing tasks at the internship site and 13.4% (n = 8) of the students reported not receiving adequate feedback regarding their performance (see Figures 29 and 30).

Figure 29. How often did your supervisor encourage you to try new ways of performing in the job? (n = 60)
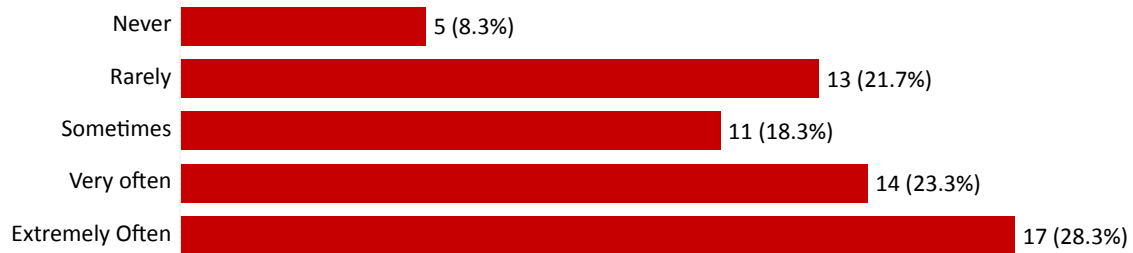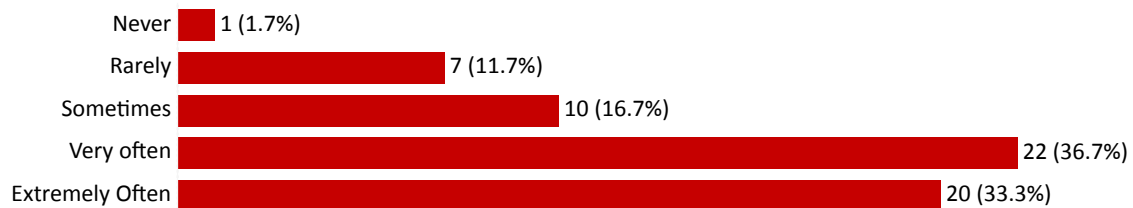
Response	Value
Never	5 (8.3%)
Rarely	13 (21.7%)
Sometimes	11 (18.3%)
Very often	14 (23.3%)
Extremely Often	17 (28.3%)

Figure 30. How often did your supervisor give you feedback regarding job performance (n = 60)

Response	Value
Never	1 (1.7%)
Rarely	7 (11.7%)
Sometimes	10 (16.7%)
Very often	22 (36.7%)
Extremely Often	20 (33.3%)

Goal clarity

Task goal clarity, or clear expectations regarding work products and their evaluation, is associated with reduced stress and increased satisfaction on the internship site (Beenen & Rousseau, 2010). For example, students who complete internships that are poorly designed and lack meaningful work may end up working on ill-structured and poorly managed tasks (Frenette, 2013). Task goal clarity was measured using two questions with a five-point Likert scale from 1 = *not at all clear*, 2 = *a little clear*, 3 = *somewhat clear*, 4 = *very clear*, to 5 = *extremely clear*. The average score for the two questions equals 4.08 with a standard deviation 0.71. Below we report results from these items (see Figures 31 and 32).

The results indicate that the majority (80%, n = 48) of participating students who participated in internships felt that they were given very clear or extremely clear tasks to be completed. A similar proportion (83.4%, n = 50) of students felt the goals to be accomplished were somewhat very clear or extremely clear.

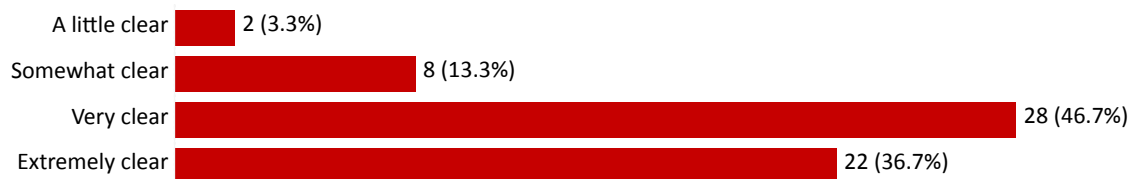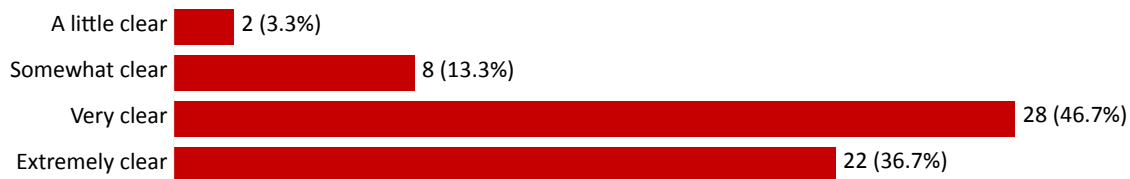**Figure 31. In this internship, how clear you felt about the tasks to be completed? (n = 60)**

Response	Value
A little clear	2 (3.3%)
Somewhat clear	8 (13.3%)
Very clear	28 (46.7%)
Extremely clear	22 (36.7%)

Figure 32. In this internship, how clear you felt about the goals to be accomplished? (n = 60)

A little clear	2 (3.3%)
Somewhat clear	8 (13.3%)
Very clear	28 (46.7%)
Extremely clear	22 (36.7%)

Task autonomy

In addition to benefiting from clearly defined tasks, interns also report higher rates of satisfaction when they are given autonomy and discretion to perform the tasks assigned to them (McHugh, 2017). Task autonomy was measured using two questions with a five-point likert scale from 1 = *none*, 2 = *a little*, 3 = *some*, 4 = *quite a bit*, to 5 = *a great deal*. The average score for the two questions equals 4.33 with a standard deviation 0.85, and below we report results for these items (see Figures 33 and 34).

For participating students, 81.6% (n = 49) reported having considerable flexibility in how they completed their work and 80.0% (n = 48) reported having adequate freedom to decide how to do their work, indicating that for these students the internship provided some opportunity to function with autonomy in the workplace.

Figure 33. In this internship, how much flexibility did you have in how you completed your work? (n = 60)
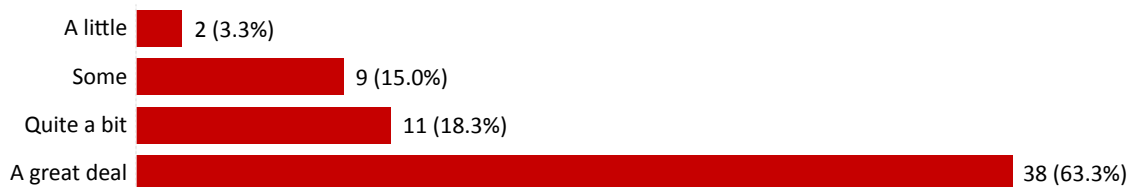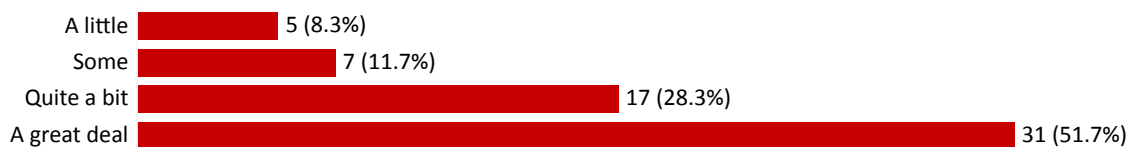
A little	2 (3.3%)
Some	9 (15.0%)
Quite a bit	11 (18.3%)
A great deal	38 (63.3%)

Figure 34. In this internship, how much freedom did you have to decide how to do your work? (n = 60)

A little	5 (8.3%)
Some	7 (11.7%)
Quite a bit	17 (28.3%)
A great deal	31 (51.7%)

Task similarity to entry-level jobs

Finally, one of the persistent questions in the literature is whether interns are provided with work that is of equal difficulty to entry-level employees (Hora, Wolfgram & Thompson, 2017). This construct was measured using one question with a five-point Likert scale from 1 = *not at all similar*, 2 = *a little similar*, 3 = *somewhat similar*, 4 = *very similar*, to 5 = *extremely similar*. The average score for the question was 3.78 with a standard deviation 1.06.

The results indicate 65.0% (n = 39) of the participating students considered their internship tasks were very similar or extremely similar to those in entry-level employment. There were 11.7% (n = 7) of participating students considered their internships tasks not at all similar or a little similar to an entry-level employment (see Figure 35).

Figure 35. During your internship, how similar in nature were your tasks to those in entry level jobs in the organization? (n = 60)

Not at all similar	2 (3.3%)
A little similar	5 (8.3%)
Somewhat similar	14 (23.3%)
Very similar	22 (36.7%)
Extremely similar	17 (28.3%)

Focus group and interview results: What were students' experiences with their internship?

In addition to these results from our online survey, we held 8 on-campus focus groups with a total of 13 students. Four of these students had participate in an internship and they described several key features of their internship experiences, including project-based work, supervision, and feedback. These themes and examples are summarized in Table 4 and further elaborated upon in the text that follows.

Table 4. Student Experiences in Internships (n = 4)*

Focus of Internship	Examples
Project-based work	*Specific role in work on one large coherent project which a specific product or outcome*
Supervision	*The presence of supervisors and mentors to provide work direction and guidance*
Feedback	*Feedback (both positive and constructive) that students receive in the context of their internship*
*Notes. *This sample only includes those focus group participants who had internships*	

Student expressed how the project-based task structure of their internship impacted their career interests, and was led them to acquire new skills and apply academic knowledge to a workplace setting. One student, for example, indicated how she was placed in a project group for her internship, in which she had to meet with managers, supervisors, officers, and other people at the company, to effectively analyze data, identify problems faced by the company, and present the solutions and recommendations.

All the students discussed the importance of supervision in their internship experience. Supervision ranged from highly structured with clear directions for work task, with due dates, regular check-in meetings, and work evaluations; to supervision that allow the student to work more autonomously. A few supervisors additionally provided mentorship to the students, with extra encouragement, career advice, and support with work-place socialization.

Additionally, students discussed the importance of quality feedback to their internship experience. For example, one student shared about the important role of supervisor feedback in her professional development:

> They [supervisors] provided me feedback to get me to think about things. So, I would provide them with information, and they would said, 'what do you think about the case?' And so, I had to give them the information. So, I'd give them my feedback, they tried to lead me with some questions, and they got me to think.

Further, students also discussed the importance of positive and constructive feedback, and the potential for negative, unhelpful, or unclear feedback to frustrate the internship experience, as one student explained, "*I received feedback from the manager [that] I just didn't feel that it was constructive feedback. So, I took it very personal*". She expressed not knowing how to react and had to learn how to make sense and process the feedback.

IX. RESULTS: Outcomes of internships

The impacts that internships have on students is one of the most important questions facing the field of higher education and workforce development, given their growing prominence in educational policy and programming. In empirical research on internships, this question is answered by tracking changes in variables such as employment status, wages, or vocational self-concept over time. In fact, our research team will be following the panel of students who participated in T1 of our study at the college for at least two additional years, with these questions being addressed in the during 2020 and 2021. For this cross-sectional analysis of T1 data, we report outcomes in terms of satisfaction with the internship and student perceptions of how well (or poorly) the experience enhanced their knowledge, skills, and career aspirations.
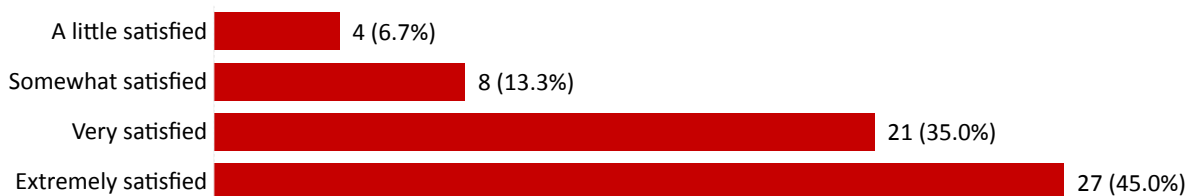
Survey results: Outcomes of internships

Level of satisfaction with internship experience

An important indicator of the usefulness and impact of an internship experience is how students themselves perceive their experience. For this issue we asked a single question about overall satisfaction and students rated themselves from 1 = *not at all satisfied*, 2 = *very satisfied*, 3 = *somewhat satisfied*, 4 = *a little satisfied*, to 5 = *extremely satisfied*. The average score for the question is 4.18 with a standard deviation of 0.91.

Of the students who had completed an internship in this sample, 80.0% (n = 48) of them reported that they were very or extremely satisfied with their internship experience, and 13.3% (n = 8) are somewhat satisfied, which leave only less than 7% (n = 4) of them are only a little satisfied with their experience. (see Figure 36).

Figure 36. How satisfied were you with your internship experience? (n = 60)

A little satisfied	4 (6.7%)
Somewhat satisfied	8 (13.3%)
Very satisfied	21 (35.0%)
Extremely satisfied	27 (45.0%)

To investigate the relationship between internship program features and students' internship satisfaction, we conducted correlation and multiple regressions analyses. Please see Table 2 in Appendix B for the correlation and multiple regression results. The results indicate that supervisor support, supervisor mentoring, goal clarity and autonomy are all positively correlate with students' internship satisfaction with coefficients ranging from 0.42 to 0.60. Relatedness to academic program and similarity to entry-level jobs are not correlated with students' internship satisfaction level. Our multiple linear regression analysis showed that students with greater level of goal clarity were expected to have greater satisfaction, after controlling for other variables in the model (see Table 2 in Appendix B).

Developmental value of the internship experience

Next, we examine the impact of program structure on another important outcome of internships – students' perception of how much their internship experiences have influenced their academic learning and career development (i.e., developmental value). This Developmental Value scale was developed based on the work by McHugh (2017) and Nghia and Duyen (2019), and consists of 10 items of two subscales using a 5-point scale from 1 = *none*, 2 = *a little*, 3 = *some*, 4 = *quite a bit*, to 5 = *a great deal*: a) 5-items regarding developmental value of academic learning with average score 4.17 and standard deviation of 0.79; b) five items regarding developmental value on career development with a same average score of 4.17 and a standard deviation of 0.86.

The first scale was measured using 5-items: 1) This internship helped me to better understand the knowledge I learned in my courses. 2) The internship gave me opportunities to apply knowledge from my coursework to real-world situations. 3) The internship gave me opportunities to identify academic knowledge gaps that need to be filled. 4) The internship helped me recognize what I should focus on studying in my program. 5) The internship motivated me to change from theory-focused to practice-focused learning. The second scale was measured by 5-items: 1) This internship helped me clarify my career goals. 2) This internship provided me with important skills relevant to my chosen career. 3) The internship gave me opportunities to learn new career-related skills. 4) The internship helped me identify specific organizations where I can apply and for jobs in the future (including your internship site). 5) This internship helped me to become more confident in my ability to pursue future career opportunities. We report below the results from the two items of each subscale as examples (see Figures 37-40).

Findings indicate 85.0% (n = 51) of the participating students considered their internships providing quite a bit or a great deal of opportunities for them to apply knowledge from course work to the real-world; and 78.3% (n = 47) reported internships are valuable in terms of providing quite a bit or a great deal of opportunities for them to identify academic knowledge gaps. In addition, when reflecting the value of internship to career development, 78.3% (n = 47) of participating students valued the skills they learned at internships are quite a bit or a great deal important for their career development, and 76.7% (n = 46) reported that their internships quite a bit or a great deal helped clarify their career objectives.

Figure 37. This internship gave me opportunities to apply what I have learned in my courses to real-world situations. (n = 60)

A little	2 (3.3%)
Some	7 (11.7%)
Quite a bit	19 (31.7%)
A great deal	32 (53.3%)

Figure 38. This internship helped me identify my academic knowledge gaps. (n = 60)

None	2 (3.3%)
A little	2 (3.3%)
Some	9 (15.0%)
Quite a bit	17 (28.3%)
A great deal	30 (50.0%)

Figure 39. This internship provided me with important skills relevant to my chosen career. (n = 60)

None	1 (1.7%)
A little	4 (6.7%)
Some	8 (13.3%)
Quite a bit	19 (31.7%)
A great deal	28 (46.7%)

Figure 40. This internship helped me clarify my career goals. (n = 60)

None	2 (3.3%)
A little	3 (5.0%)
Some	9 (15.0%)
Quite a bit	15 (25.0%)
A great deal	31 (51.7%)

To investigate the relationship between internship program features and the developmental value of students' internship experiences, we conducted correlation and multiple regression analyses. Please see Table 3 in Appendix B for the correlation and multiple regression results. The results indicate that supervisor support, mentoring, autonomy, relatedness to academic program and similarity to entry-level jobs positively and correlate with students' perceived internship developmental value with coefficients ranging from 0.29 to 0.55. We found that students with higher scores on autonomy and relatedness to academic program were expected to perceive a higher level of developmental value of their internship experiences, after controlling for the other variables in the model (see Table 3 in Appendix B).

We also looked at the developmental value of academic learning and career development respectively. Regression results show that, in both models, students with greater relatedness to academic program were likely to report the greater internship developmental value to both their academic learning and their career development[9].

These results indicate that there are a variety of structural factors that may contribute to a students' perception of whether or not their internship was a satisfactory and valuable experience. Thus, as institutions and employers work towards improving these co-curricular experiences, these factors should be on the table as areas worthy of further attention, investment, and improvement.

Focus group results: Outcomes of internships

The students who had internships and participated in our focus groups (n = 9) described how the internships affected them, most often discussing that their experience helped them explore their professional field, learn new skills, and engage in personal exploration and development. These themes are summarized in Table 5 and further elaborated upon in the text that follows.

Table 5. Perceived Outcomes of Internship Participation (n = 13)*

Outcome	Examples
Exploration of field	*Narrowing the focus of career goals and trajectory; Exploring specific environments or workplaces.*
Learning and skill development	*Learning and practicing skills specific to the field or job; applying skills learned in classroom to work environment; general learning*
Personal exploration	*Personal development and self-realization; Understanding of self, personal interests, likes and dislikes, attitudes and behaviors, and perspectives.*
*This sample only includes those focus group participants who had internships; outcomes are listed in descending order of frequency	

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[9] The multiple regression results showed = 0.02, p = 0.03 for academic learning; and = 0.31, p = 0.008 for career development. refers to the standardized regression coefficient that demonstrates the change in internship satisfaction per unit change in predictors.

In terms of exploring the professional field, several students offered examples of how the internship application process and experience helped them narrow their focus. Students discussed learning about career interests and about workplace culture, which sometimes helped them to alter or specify their academic and career goals, as this student explains:

> The original intent was to go to law school ... [the internship in the law field] it wasn't as exciting as I thought it would be. Because I decided I don't necessarily want to go to law school anymore. I picked up the minor in statistics to get more, to be more quantitative, and then pursued other opportunities that were more in line with economics, and more analytical.

Students also stated that their internship was a setting in which they were able to learn new skills, including both technical skills such as learning new software, as well as communication, teamwork, presentation, and leadership skills. One student explained:

> Because of the exposure that I got, I'm actually doing some independent studying of different computer-based skills that I know I'm going to need. I think both the more important one for me, it's like just a broader understanding of the opportunities, and the necessary skills you need....

Students also discussed how they grew personally during their internships. Students shared that they gained a better understanding of themselves, personal interests, likes and dislikes, attitudes and behaviors, perspectives, flexibility, and independence. For example, one student described how her internship experience allowed her to think about school beyond the bachelor's degree, and potentially, to pursue a doctorate degree. A number of students similarly described how their internship resulted in an expanded perspective, a clearer sense of their own abilities, and an increased feeling of self-confidence.

X. RECOMMENDATIONS FOR PROVIDING EQUITABLE AND HIGH-QUALITY INTERNSHIPS FOR ALL

The literature and the data contained within this report highlight a key issue in the world of internships – that simply making them available does not guarantee that they will be accessible to all students or that the experience is guaranteed to have a strong and positive impact on student outcomes. Instead, much depends on how internships are structured by educators and employers, and experienced by students (Kuh & Kinzie, 2018; O'Neill, 2010). In this final section of our report, we provide recommendations for students, educators and employers for increasing the availability of high quality and equitable internship programs for all students at the college.

What can students do?

The literature suggests that students are drivers of their self-exploration, career exploration, and career planning and management. Interested students often are the ones who must take initiative to actively pursue quality internship experiences, which may serve as important work-based learning opportunities. Research suggests that positive internship experiences can help college students better know their interests, boost skills, and become adaptive to future challenges and changes.

As illustrated by Figures 2-17, there is considerable social-economic variation among the students who completed our survey, including demographic characteristics, life circumstances, and features of their academic programs. Some of these factors may impact students' ability to access an internship experience, such as parental income (Figure 5.1 and 5.2) and employment status (Figure 6).

While numerous individual and structural barriers exist that make engaging in these activities more challenging for particular students, we offer the following suggestions in hopes that they may assist students in accessing, completing, and making the most of an internship experience.

> **What can students do?**
>
> - Actively search for resources, connections, and assistance in their search for and decision-making around the feasibility of internship participation;
> - Increase self-management and time management skills;
> - Establish and maintain effective communication with internship supervisors or mentors;
> - Seek out and participate in professional development opportunities available to them as an intern;
> - Identify short-term and long-term goals before entering internship.

- Students are encouraged to actively search for resources, connections, and assistance in their search for and decision-making around participating in an internship. This includes utilizing campus resources and asking for support and guidance from faculty, advisors, and peers. Basically, students need to be proactive in discovering opportunities and supports available within the college community, and if these are lacking, to be vocal to their institution that such support is needed.

- Students also are encouraged to consider ways to increase their self-management and time management skills by utilizing campus resources such as attending workshops or trainings. Students can utilize these resources to continue to gain professional development, learning, and skills from their work, coursework, and life experiences.

- It is important for students to manage their relationships with internship supervisors or mentors and work to establish effective communication. Students also are encouraged to seek out and participate in professional development opportunities available to them as an intern. Although students' internship satisfaction and perceived contributions to their development could be limited by many contextual factors, students are encouraged to treat internships as an opportunity for personal and professional development, regardless of whether the internship is required or elective.

- Students should articulate their own short-term and long-term goals before entering an internship, and just as important, these goals need to be communicated with their academic program coordinator/faculty and internship site supervisor.

What can faculty and institutions do?

Educators can play a critical role in building the academic foundation for students' future career, by connecting students to educational- and career-related opportunities, and by cultivating students' professional development. Educators can also disseminate information about internships to students, facilitate connections with employers who host internships, and help students to anticipate how their course learning might apply to future internship and work settings.

We offer the following suggestions to strengthen educators' and campus leaders' impacts on student development and to facilitate high quality internship programs at the college:

- Institutional leaders at the college may benefit from carefully scrutinizing the information presented in the institutional capacity for internship programs section of this report. In doing so, educators are encouraged to consider areas that represent strengths, weaknesses, and opportunities for growth. Educators and campus leaders are encouraged to pay close attention to

What can faculty and institution do?

- Scrutinize institutional capacity and consider areas that represent strengths, weaknesses, and opportunities for growth;
- Enhance coordination with different university-stakeholders and internship supervisors as well as guide students to reflect their internship experiences.
- Understand and advocate for students' needs, especially life circumstances may function as obstacles to participating in an internship;
- Consider ways to maximize opportunities for students to acquire and practice career-relevant skills in their paying jobs;
- Cultivate relationships with employers and maintain connections with former students to build an alumni network;
- Carefully working with students and employers to design, implement, and continuously evaluate students' experiences within the internship program.

ensuring that issues related to equitable access and program quality are addressed before expanding or mandating internships for students.

- There are a number of formalized coordination efforts that educators enact that support the effectiveness of internship programs. This coordination can involve: (1) centralizing communication between different university-stakeholders on sharing resources; (2) having midterm and more frequent check-ins meetings and a final end-of-internship evaluation meetings with the students and supervisors; and (3) assigning and evaluating a reflective writing assignments or other projects for the student to process their experiences. Perhaps some of these reflective writing or other products can be highlighted on the college website.

- Educators and institutional leaders are encouraged to recognize their students' needs and life circumstances that may function as obstacles to participating in an internship (see Figures 2-17, 19). For example, educators may benefit from communicating with students who do not participate in internships to understand their reasons, seek resources to resolve obstacles to participating in an internship (if desired), and continue to build on students' work or life experiences that may contribute to their professional and personal development.

- Given the number of students who work while attending college, academic programs and other campus entities such as Career Services are encouraged to consider ways to maximize opportunities for students to acquire and practice career-relevant skills in their paying jobs. Students indicated a lack of internship opportunities and challenges with finding a relevant internship (Figure 19 and Table 3). As such, it is important for educators and campus leaders to continue cultivating relationships with employers. Educators and campus leaders also may benefit from maintaining connections with former students and building an alumni network for the purpose of internship referrals.

- Educators and campus leaders can support desirable internship outcomes by carefully working with students and employers to design, implement, and continuously evaluate students' experiences within the internship program. These efforts will help educators and campus leaders to ensure that quality work, adequate supervision and mentorship, and relevance to the students' academic program are maintained.

What can employers do?

Employers' recruitment, work setting and design, and mentorship and feedback directly impact students' internship experiences and outcomes. Therefore, employers who host internships or who are planning to host internships are encouraged to attend to the following:

- In addition to the labor and recruitment goals that employers may have for their internship programs,

What can employers do?

- Design internship programs with clear goal setting as well as consistent quality supervision and mentorship;
- Allow for some task autonomy for their interns while providing clear objectives and explanation;
- Highlight interns' progress and accomplishments, while also provide periodic feedback on growth areas and improvement plans;
- Value interns' efforts and time through providing emotional support and financial support;
- Make and communicate short- and long-term goals with interns throughout one's internship and adjust internship activities to support those goals.

internships should primarily be considered as an educational and developmental opportunity for the students. Internship goal clarity is critical to student internship satisfaction. Employers can also enhance this opportunity by carefully designing internship programs to include clear goal setting and explanation as well as consistent quality supervision and mentorship by the supervisor or by other senior staff in the organization (peer mentorship programs may also be supportive).

- Supervisors are encouraged to allow for some task autonomy for their interns by encouraging their creativity, while providing clear objectives and explanation as well as structured guidance about expectations for interns. It is also important for supervisors to provide periodic feedback to interns that highlight their progress and accomplishments, while also providing clear feedback on growth areas and proposed action plans for improvement. Feedback also can be regularly solicited from interns to assess and evaluate the internship program to optimize learning goals and outcomes.

- Employers also are encouraged to value interns' efforts and time through providing emotional support and financial support, when possible. As many students named financial barriers as a primary obstacle to internship, employers interested in recruiting and attracting more diverse applicant pools may also consider financial compensation as a mechanism to successfully recruit applicants who may not otherwise be able to access and participate in internship experiences (see Table 3).

- The relevance of the internship experience to the academic program plays a critical role in students' internship satisfaction as well as their perceptions of the value of internships to their career development. Internship supervisors are encouraged to discuss short- and long-term academic and career related goals with their interns and adjust the internship program when possible to provide experiences that can support those goals.

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APPENDICES

Appendix A: Research Methodology

The College Internship Study is a mixed-methods, longitudinal study (Creswell, 2014; Tashakkori & Teddlie, 2003) of internship programs with three distinct yet inter-related components: (1) an online survey of students while in college and then the workforce, (2) focus groups and interviews with students while in college and then at work (3) interviews with career advisors and other educators involved in internship program administration and with area employers who host interns from the college. Primary data is collected in two phases: Fall of 2019 (T1) and then 12 months later in the Fall of 2020 (T2). The study aims to document the effects of internship participation and program characteristics on a variety of student outcomes, group differences (e.g., socio-economic status, race, gender, discipline, and first-generation status) in internship participation and student outcomes, and institutional experiences with hosting and implementing internship programs.

The survey of students and other data collection activities were conducted in Fall 2019; the current report is based on this data. The online survey was administered to students in the second half their degree programs. In order to focus on students' experiences in internships and not on other internship-like programs, data collection for the survey excluded students in programs with a required practicum (e.g., education fields). The definition of the term "internship" that we employed for the survey and other data collection activities was as follows:

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

To participate in the survey, students were contacted with an email recruitment letter, which directed them to a unique password-protected URL. Via the link, the students could review the IRB-approved consent form and signal their consent to participate in the research by entering their full name and birthdate. Students who completed the survey via this link received a cash incentive by mail.

This survey contains questions regarding whether or not a student has participated in an internship in the last 12 months while in college, their employment status, and demographic characteristics. Students who answered "no" to having participated in an internship in the last 12 months while in college also answered questions about their career preparation and any factors that may have dissuaded them from pursuing an internship (e.g., finances, child care), as well as questions that measure their level of career adaptability. For students who answered "yes" to already having participated in an internship while in college, questions were asked about the design features of their internship (e.g., compensation, type of mentoring, job-site activities, etc.), along with questions about demographics, career adaptability, and their satisfaction and perceptions of the developmental value of their internship experience.

Table 1. Descriptive statistics and Cronbach alpha coefficients of the measuring instruments

	Mean	SD	α
Supervisor support	4.31	0.84	0.89
Supervisor mentoring	3.77	0.89	0.85
Goal clarity	4.08	0.71	0.85
Task autonomy	4.32	0.85	0.83
Relatedness to academic program	3.92	1.12	
Similarity to entry-level jobs	3.78	1.06	
Satisfaction	4.18	0.91	
Development value	4.17	0.78	0.86
Career adaptability composite	3.80	0.54	0.79
Concern	3.82	0.65	0.69
Control	3.85	0.69	0.75
Curiosity	3.65	0.73	0.72
Confidence	3.88	0.69	0.78

The results of the survey were analyzed using methods such as Pearson Chi-square test, and ordinal logistic regression to explore the effects of demographic background on internship participation. In addition, correlation, simple regression, multiple regression was utilized to explore influential factors on college students' internship satisfaction and development value.

After completing the survey, the students were asked if they were willing to be contacted to participate in an in-person focus group and to be contacted a year later to participate in the follow-up survey. Students who had and had not participated in internships at the time of the T1 survey were asked to participate in the follow-up survey, thereby constituting distinct groups that can be statistically compared to one another during analysis. Additionally, students who participated in the focus group at T1 will be asked if they can be contacted for a follow-up online or phone interview.

For the focus groups at T1, groups comprised of one to three students were separated into those who have participated in an internship (n = 4 students in 3 groups) and those who have not (n = 9 students in 5 groups). Prior to the start of the focus group, students were given the opportunity to review the IRB-approved consent forms, ask questions, and to voluntarily consent to participate in the research by signing the form. Students received a cash incentive after consenting to participate in the audio-recorded focus group. Focus groups allow for interactions among participants that explore their experiences and thought processes (Kitzinger, 1995). Students who had an internship experience during college answered questions about the nature of their experience, support from both the academic program and their job-site supervisor, their general level of career adaptability, and so on. For those who have not had an internship, questions focused on the reasons why they have not participated in an internship, as well as their level of career adaptability, and so on.

Lastly, we conducted an audio-recorded interview with educators, career advisors, university personal, and with employers at the college who supports student internships. A list of potential recruits from among the staff and area employers was provided by our colleagues at the college. Prior to the start of the interview, participants were given the opportunity to review the IRB-approved consent forms, ask questions, and to voluntarily consent to participate in the research by signing the form. The educator interview focused on the types of resources available for their college and/or company, their views on the sufficiency of these resources, and issues related to designing, managing, and implementing effective programs. Lastly, documents from career services, academic departments, and employers that offer internships were also collected and analyzed for details about design features of internship opportunities.

Focus groups and interviews were transcribed and analyzed in MaxQDA software, which is a discourse analysis software for sorting and coding transcript data, and ultimately, to identify themes and patterns in the corpus. First, two researchers created a procedure to segment the interviews based on the interview protocol. Both researchers practiced with the protocol and coded a set of focus groups in parallel; and the few discrepancies that were identified were resolved and the rest of the interviews were coded by the two researchers. Then, the researchers reviewed the corpus of transcripts to identify themes in the data regarding the obstacles to participating internship and the characteristics of internship experience (Ryan & Bernard, 2003; Corbin & Strauss, 2014). The codes developed through this process were checked by the pair of researchers applying them in parallel to a selection of 10% of the transcript data; a few discrepancies were identified and resolved by the researchers, and the codes were then applied by the researchers to the entire corpus.

The limitations of this study are the small sample size of the student focus groups which could not be representative of students from the wide range of academic programs offered at the college. This was also a non-random sample, with students self-selecting into the pool of volunteers who we contacted and tried to schedule for focus groups. Finally, in our study we did not examine whether or not study participants had participated in other work-based learning programs (e.g., apprenticeships), and the potential impacts of these experiences on their learning and career goals.

Appendix B: Results of Regression tables

Table 2. Results of correlations and multiple regression analysis of internship program features and students' internship satisfaction

Predictor	Correlation with Satisfaction	Internship Satisfaction	
		β	p
Supervisor support	.60***	.40	.76
Supervisor Mentoring	.42***	.06	.06
Goal Clarity	.59***	.57**	.003
Relatedness to academic	.23	.005	.96
Task autonomy	.46***	-.006	.97
Similarity to entry-level jobs	.22	.034	.81

Dependent variable: Internship satisfaction

Control variables: gender, race, academic program, GPA, employment status

The multiple regression model produces and adjusted R^2 = 0.66, $F(22,36)$ = 3.1, p = 0.0013.

The multiple regression model equation: Satisfaction = 0.57 * goal clarity. Only goal clarity significantly contributes to this multiple regression model.

$β$ refers to the standardized regression coefficient that demonstrated the change in internship satisfaction per unit change in predictors.

Given the low sample size available for running this model, these results can only be interpreted with some caution.

*p < 0.05, **p < 0.01, ***p < 0.001

Table 3. Results of correlations and multiple regression analysis of internship program features and students' development value

Predictor	Correlation with Development value	Developmental Value Composite	
		β	p
Supervisor support	.46***	.23	.187
Goal Clarity	.24	-.13	.400
Supervisor Mentoring	.39**	-.04	.806
Link between academic program and internship	.55***	.27**	.007
Task autonomy	.49***	.30*	.044
Similarity to entry-level jobs	.29**	.11	.405

Control variables: gender, race, academic program, GPA, employment status,

This multiple regression model produces an adjusted R^2 = .65, $F(22, 36)$ = 2.99, p = 0.002.

The multiple regression model equation: Development value = 0.30 * autonomy + 0.27 * relatedness to academic program. Autonomy and relatedness to academic program had significant positive regression weights.

 refers to the standardized regression coefficient that demonstrated the change in internship satisfaction per unit change in predictors.

Given the low sample size available for running this model, these results can only be interpreted with some caution.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Note: CCWT staff are available to conduct program evaluations and/or needs assessments of a college or university's internship program such as the one reported here. Our procedures are guided by the rapid ethnographic assessment method and can involve quantitative and qualitative data sources including surveys, document analysis, focus groups and interviews. After analysis, customized technical reports can be provided to institutional partners with actionable recommendations provided regarding how to address challenges and capitalize on program strengths.

The mission of The Center for Research on College-Workforce Transitions (CCWT) is to conduct and support research, critical policy analysis, and public dialogue on student experiences with the transition from college to the workforce in order to inform policies, programs, and practices that promote academic and career success for all learners.

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