



# Technology Internships Prove Flexible, Resilient, and Critical During COVID

**One Community College's Pivot to Opportunity During the Pandemic**

## Executive Summary

This research is about how one community college preserved and strengthened its technology internships during COVID with commitment and creativity. Although the college, employers, and students faced technical, logistical, and supervisory challenges in maintaining technology internships through the pandemic, the college was committed to ensuring their resilience because they were required for graduation. As a result, many interns had opportunities to gain new skills related to navigating virtual work arrangements. In addition, employers drew on interns to fill staffing shortages and internships continued to serve as a key bridge to technology employment during the pandemic.

We embarked upon this research to explore how COVID has impacted technology internships, including student and employer participation, satisfaction, and challenges; changes in the structure of internships; and impact on student employment outcomes. The roots of this study emerged back in summer of 2021, as we were completing a three-year study funded by the National Science Foundation to examine how community colleges can create effective technology internships as a bridge to employment for community college technology graduates. The study team conducted case studies at two Florida community colleges (Gulf West Community College and Gulf East Community College). The two schools provided an interesting comparison, because internships were required in order to graduate from Gulf West but were required by only some technology programs at Gulf East. Key findings of that study indicated that technology internships do have the potential to serve as an effective bridge to employment,

although few technology students have the opportunity to participate in such internships. Only when the internship was required for graduation did students participate in significant numbers, with benefits from participation found for all students, including men of color and women of all races, who are traditionally underrepresented in high-opportunity technology career pathways.

The COVID pandemic began in the United States just as the initial study was drawing to a close, and the effect of COVID on internships was just starting to emerge. Recent national surveys have documented significant changes in student access to internships and changes in internship structure as a result of the pandemic. In a recent poll by the National Association of Colleges and Employers, about 16 percent of employers reported revoking internship offers in the spring of 2020, and 75 percent made at least one change to their program, including 40 percent who moved their internships online. Another 40 percent of employers surveyed shortened the length of internships, and 20 percent reduced the number of interns they brought on board.<sup>1</sup> Glassdoor reported a 52 percent drop in internship openings in early April 2020.<sup>2</sup> Impacts varied by sector, with students in hospitality, tourism, transportation, and engineering facing the biggest downturns in internship opportunities.<sup>3</sup> Questions remained regarding how the pandemic has altered technology students' access to internships, the structure of internships, and whether the benefits of internships for technology employment and for broadening participation in technology careers have been sustained during the pandemic.

In the fall of 2021, JFF received supplemental funding to fill these research gaps, specifically addressing four broad research questions:

1. How has COVID affected student and employer internship plans and opportunities?
2. What have been the challenges and opportunities in translating internships to a virtual environment?
3. How did internships mediate graduates' transitions to employment during COVID?
4. How has COVID affected the potential for internships to broaden participation in technology careers?

Data for the follow-up study are from Gulf West Community College.<sup>4</sup> Gulf West was selected for the follow-up study because of the high participation rate of students in internships. Between 2010 and 2019, 84 percent of the Gulf West technology graduates had completed an internship<sup>5</sup>, compared with 23 percent of Gulf East Community College technology graduates.<sup>6</sup> Even before the pandemic, it was much harder for technology students at Gulf East to secure and participate in an internship. In the follow-up, we wanted to focus our attention on what had changed during COVID which made Gulf West a good fit. The Gulf West data include interviews with 16

technology students, six employers that provided internships during the pandemic, and eight community college representatives (faculty members, internship coordinators, and deans).<sup>7</sup> We also drew on two internship surveys. The first is from the initial study fielded between April 2019 and April 2020, with responses from 100 students who completed internships before the pandemic and 79 who completed internships during the pandemic. The second, fielded in January and February of 2022, is from a follow-up survey sent to the 179 respondents who completed the initial survey (N = 81).<sup>8</sup>

## Key Findings

Key findings of the follow-up study revealed that technology internships at Gulf West continued to serve as a key bridge to technology employment during the pandemic. The most significant change in the internship program at Gulf West due to COVID was the rapid and large expansion of virtual internships. Before the pandemic, we knew of no Gulf West students who had participated in a virtual internship. Between April 2020 and May 2021, however, close to half (47 percent) of the students surveyed indicated that they had participated in a virtual internship. These virtual arrangements made internships possible during early pandemic lockdowns and created opportunities for many students to continue learning outside the classroom despite pandemic disruptions. With only a few exceptions, Gulf West skillfully navigated COVID disruptions and secured technology internships for students who needed them to graduate during the pandemic. It is likely that the graduation requirement led to the strong resiliency of technology internships during that time. To ensure that its students could graduate, Gulf West had to find internship opportunities for them, despite public health, economic, and workforce uncertainty.

Securing and supporting students in technology internships during COVID was not without its challenges. During the pandemic's initial disruptions, some internships were canceled while others rapidly moved online. Employers had to figure out how to supervise and mentor students online even as they were shifting their own staff members to remote work. The dramatic increase in virtual internships resulted in technical challenges, such as inadequate home internet connections; difficulty supervising students remotely; and interns' inexperience with communicating through virtual platforms. Yet, at the same time, virtualization created more opportunities for some interns to connect with supervisors. For example, several employers spoke about meeting more frequently with remote interns to satisfactorily provide support on work expectations, project goals, roles and responsibilities, and feedback. These interactions led to stronger relationships and guidance for interns.

Early in the pandemic, faculty members had to develop alternatives for students who had had their internship canceled but needed to complete one in order to graduate. Labor market

demand was in flux as some industries experienced dramatic drops in employment while others faced unprecedented increases. In the case of biomedical internships, there was a pivot from hospitals, which were not taking on interns, to biomedical manufacturers. By the fall of 2020, a “new normal” had developed, where more than half of students were participating in online internships while others had to navigate in-person internships amid ever-changing COVID health and safety regulations. Faculty members offered some students alternatives, including on-campus internships that they supervised, capstone projects, or additional coursework.

Once the college and employers had adjusted to the pandemic and its initial disruptions, internships at Gulf West were able to continue to provide students with the unique and valuable real-world learning experiences found in our initial study, as well as new experiences and skills. A key area of professional growth for the online interns was the new communication and project management skills they gained working virtually. Some employers also gave interns more responsibilities, challenges, and learning opportunities as they pivoted to online and remote work. For many students, the internship provided them with the skills and experiences that helped to land their first technology job, in spite of COVID’s workforce disruptions.

Students in the study we conducted before the pandemic experienced a variety of challenges related to securing and completing their internships. COVID-related obstacles exacerbated some of these challenges, including securing and persisting in an internship, and introduced others, such as having to learn how to participate in a virtual internship and being unable to engage in hands-on learning activities in a virtual environment. Engineering technology students, especially those who needed to work with equipment and gain in-person, hands-on experience, had the most difficulty finding internships during the early phases of the pandemic.

Students who were able to secure an internship during COVID discussed challenges related to a lack of structure within their internships and, specifically, a lack of formal mentorship—something that was also reported during our initial research. Some of the companies that students interned with did not have a formal internship program, which led to gaps in supports. Although many of the challenges were also experienced by students before the pandemic, others were a direct result of it. For example, some students were reluctant to risk COVID exposure by participating in an on-site internship if one was even available, and others were not confident about the safety precautions being implemented in some workplaces.

The pandemic provided an opportunity for Gulf West faculty members and administrators as well as the employer partners to sharpen their thinking about what is required for a successful internship. Many faculty members expressed some frustration with the internship program’s infrastructure—concerns that were also expressed in our initial research. This includes the need

to constantly engage new employers and reengage former employers, and the “piecemeal” nature of matching students to opportunities.

Despite the challenges with employer engagement, the pandemic may have shifted expectations somewhat because of the increased need for workers across many technology industries. This labor market demand created opportunities for Gulf West and its technology students to develop relationships with new employers interested in providing internships, along with further advancements in creating a pipeline from internship to employment. In addition, faculty members reported that new local employers had been added to advisory committees, which could lead to additional internship opportunities, stronger relationships, and program improvements at Gulf West.

## **Building Effective Technology Internships in the Post-COVID Era: Promising Practices for Community Colleges**

The pandemic provided an unexpected opportunity for faculty members, administrators, and employers to rethink their current approach to the internship requirement at Gulf West. Faculty members have learned that for many students, the requirement can be met through remote internships, in new industries, and through alternative requirements, like a capstone project, in certain cases. Gulf West recognizes that in order to build more effective technology internships during the post-COVID era, it needs to provide additional support for both students and employers in the online work environment. Employers have learned that they can turn to Gulf West students to meet their workforce needs and to fill project gaps, and that a strengthened relationship with Gulf West can lead to a pipeline for employment.

The following are strategies that Gulf West and other community colleges could implement to strengthen relationships with employers and other supports for student internships. While results were drawn from the field of technology, many of these strategies are general enough to be effective in other programs.

**Faculty externships.** In this scenario, a faculty member would spend several weeks visiting with a local employer. Employer personnel would subsequently visit the college, where they and the faculty member would discuss internship and career opportunities with students. This approach would allow participating instructors to incorporate what they learned into the curriculum, understand the needs of the employer, and serve as a bridge to internship opportunities.

**Employer onboarding.** Community colleges could provide onboarding and support to employers to guide them with a deeper understanding of what is expected of them and their

student interns. Strategies for onboarding could include sharing videos that address topics such as developing an intern scope of work, and internship supervision and mentorship. Employers could also be invited to join Gulf West's steering committees, where they could take on greater responsibility for course and program development while offering input into the skills needed to enter the technology workforce.

**Virtual-work skills.** Community college classes could incorporate the development and assessment of online and in-person communication, teamwork, and professional skills. This would give all students exposure to such skills before an internship. Activities such as group projects, role-playing, and other active practice-oriented approaches, along with instruction on the project management and communications technologies organizations use, could better prepare students for internships.

**Flash work-based learning experiences.** These are one- or two-week work-based learning experiences early in a student's internship program and possibly throughout their two years of study, where an intern receives an overview from various units within an organization without having to commit to one unit for their entire internship. Flash work-based learning experiences are conducted in a rotational style and provide professional development along with a snapshot of a given career track.

## Endnotes

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<sup>1</sup> “Employers Made Changes to 2020 Summer Internships Due to COVID-19,” National Association of Colleges and Employers, October 19, 2020, <https://www.naceweb.org/talent-acquisition/trends-and-predictions/employers-made-changes-to-2020-summer-internships-due-to-covid-19/>

<sup>2</sup> Amanda Stansell, “U.S. Internship Hiring Cut in Half Since COVID-19 Crisis,” Glassdoor, April 28, 2020, <https://www.glassdoor.com/research/internship-hiring-coronavirus/>.

<sup>3</sup> The Wisconsin Center for Education Research has drawn on its prior research to develop best practices for online college internships during the pandemic. See “What to Do About Internships in Light of the COVID-19 Pandemic? A Short Guide to Online Internships for Colleges, Students, and Employers,” available at [https://wcer.wisc.edu/docs/news/CCWT\\_report\\_COVID-19\\_Internships.pdf](https://wcer.wisc.edu/docs/news/CCWT_report_COVID-19_Internships.pdf).

<sup>4</sup> Gulf West is pseudonym to preserve the confidentiality of the college and the staff, faculty, students, and employers we interviewed.

<sup>5</sup> Even though the internship was required at Gulf West, participation rates fell below 100% especially early in the decade as the program was starting up. Some students received internship credit for prior work experiences while others were given alternatives like a capstone project when the internship was not feasible due to their work or family circumstances.

<sup>6</sup> These data are based on author analysis of Gulf West and Gulf East administrative data.

<sup>7</sup> In the follow-up student we interviewed 16 students. The demographics of these students were as follows: three women (19%) and 13 men (81%); five Black students (31%), one Asian student (6%), and 10 white students (63%). Thirteen of the students had graduated from the technology program while three had not. In the initial study, we interviewed 30 students. Demographics from this initial sample included eight women (27%) and 22 men (73%); and four Black (13%), sixteen white (53%), and three Asian (10%) students, as well as seven students with no racial or ethnic information (23%).

<sup>8</sup> Respondent demographics from the initial survey included 36 women (20%), 125 men (70%), and 18 students with no gender information (10%); 18 Black students (10%), 32 Latinx students

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(18%), 95 white students (53%), 15 Asian students (8%), and 19 students with no racial or ethnic information (11%). Respondent demographics from the follow-up survey included 17 women (21%), 54 men (67%), and 10 with no gender information (12%); and nine Asian (11%), eight Black (10%), 10 Latinx (12%), one multiracial (.01%), and 42 white (52%) respondents, plus 11 respondents with no racial or ethnicity data (14%).