Crisis and change: How COVID-19 exacerbated institutional inequality and how institutions are responding

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Abstract
This article explores how the global Coronavirus (COVID-19) pandemic impacted United States higher education over the course of the first year from Spring 2020–Spring 2021. Utilizing a case study methodology, blending proprietary, closely held, public use, and archival data, we find that political and institutional factors shaped the decision to return to in-person instruction or remain online in fall 2020, which in turn, influenced the enrollment and financial health of institutions in that semester and beyond. Although nearly every institution of higher education was impacted, we find that those most adversely impacted are 2-year public and 4-year private baccalaureate institutions. Despite considerable challenges resulting from COVID-19, we highlight several practices of how systems and institutions are innovating and how this work can be replicated to positively impact higher education for years to come.

INTRODUCTION

On March 6, 2020, Bellevue College, a public 2-year institution in Washington state, announced via email that classes would be moved online and that all students should check their e-mail accounts for specific instructions (Bellevue, 2020). The message ended with “thank you all for your understanding and hard work during these uncertain times.” That same day, 840 miles south, Stanford University announced that in-person instruction would be suspended, joining Bellevue College as among the first institutions in the United States to transition from in-person to online instruction for the spring due to COVID-19 (Stanford, 2020). Over the next 3 weeks, higher education would certainly head into “uncertain times” with more than 1500 colleges and universities transitioning from in-person to online instruction (see Figure 1). What is remarkable about these transitions was the rapidity and flexibility that institutions displayed.
Higher education institutions often lead the way in innovation and modeling best practices for the health and safety of their students, faculty and staff. COVID-19 was no different. As Figure 1 demonstrates, higher education saw the public health threat, understood it as credible, and took appropriate action to try to keep students, faculty, staff, and their communities safe (Marsicano et al., 2020). From March 1 to March 31, 2020, nearly 1400 4-year institutions across all 50 states, including institutions that would have normally had few if any online instruction opportunities, announced the transition of in-person instruction to online. With these practices, universities were able to significantly reduce the potential spread of disease transmission. In fact, 90% of institutions announced their shift to online learning before California Governor Gavin Newsom announced the nation’s first COVID-19 stay-at-home order on March 19 (see below Figure 2).

INSTITUTIONAL DECISION-MAKING DURING SPRING 2020

Beyond timing and scheduling constraints, it is important to note the structural components of closure and reopening decisions. As we shall see, these decisions are not simply
an agent-based choice made by the President or Chief Academic Officer of a university in consultation with a few stakeholders. Rather, these decisions included both political and financial considerations that ultimately have substantial impact on institutions in a variety of areas.

Shortly after most institutions transitioned their in-person instruction online, administrators began deliberating when to resume in-person instruction. This deliberation was not simply about the health and safety of students, faculty, and their broader communities. For many, this was a discussion about institutional survival. In the early days of the pandemic, research (Bevins et al., 2020) found that if COVID-19 were to continue into fall 2020, approximately half of all private not-for-profit institutions would experience a revenue gap greater than 5%. Moreover, if the pandemic persisted into fall 2021, 43% of those institutions would experience a gap greater than 20%, signaling the likely closure of scores of institutions. Despite quick action of transitioning to online instruction, it was soon clear that the pandemic would have significant and lasting impacts on colleges and universities across the United States.

The goals of our article are twofold. First, we will explore the factors that influenced universities decisions to resume in-person instruction and, second, we will examine the structural consequences of course scheduling and mode of instruction decisions. The decision to resume in-person instruction is not simply an exercise in relying upon best practices from public health experts. There was a myriad of political and structural factors that could potentially impact the health and long-term viability of the institution. We do not know, and may never know, all the intricacies involved in the deliberation of whether to return to in-person instruction or online instruction. However, it is clear that the fall 2020 mode of instruction decision was central to understanding the enrollment and financial health for many institutions in 2020 and beyond.

HIGHER EDUCATION CHALLENGES THAT PREDATED COVID-19

In order to understand the political and structural factors that influenced whether to resume in-person instruction for fall 2020, it is important to recognize that enrollment and financial concerns, and those related constraints, did not simply emerge out of the ether in early 2020. Rather, before March 2020, higher education was facing a myriad of challenges from declining enrollment to changing student demographics to declining state appropriations to the increasing price of attendance for public and private institutions (Grawe, 2018).

While a great deal has been written upon these topics to date, three specific pressures became more acute following COVID-19. First, as the American Association of Community Colleges (2019) acknowledged in their centennial report, 2-year institutions experienced a national decline in enrollments since 2010. Additional reductions in enrollment would further complicate an already precarious position for 2-year institutions, which serve as a ladder to upward mobility for thousands of Americans. Second, 4-year private institutions, which are disproportionally tuition dependent, were increasingly discounting their tuition to first-year students to attract applicants to their institutions. In October 2020, the National Association of College and University Business Officers (NACUBO) (2020) released the results of their annual tuition discounting study, which found that the first-year discount rate now exceeded 52% (National Association of College and University Business Officers, 2020), marking the third consecutive year that the private discount rate had exceeded more than half, and had increased for the tenth consecutive year. As the report noted, 89% of first-year students at private institutions receive a tuition discount,
which means that “institutions were struggling with enrollment and net revenue” (National Association of College and University Business Officers, 2020) prior to COVID-19. Third, for public 4-year institutions, state appropriations, which often supported the finances for higher education for thousands of institutions continued to decline at significant rates. In fact, a dozen years later, state appropriations had not yet returned to pre-Great Recession levels (Laderman & Weeden, 2019). As a result of these declines, students had never paid as much a proportion of tuition to fund public institutions (nearly $7000 on average), while state obligations had not returned to pre-recession levels (over $8200 per student). At the same time, the public grew increasingly skeptical of the value of a post-secondary degree, with a record low 18% strongly believing that a degree was worth the cost (National Association of College and University Business Officers, 2020).

POLITICAL CONSIDERATIONS AND CONCERNS

It is within this context—institutional concerns of declining enrollment coupled with increased tuition and skepticism of the value of a college degree—that administrators began deliberating on when to resume in-person instruction following their movement to online in spring 2020.

While battling COVID, the United States saw several social justice protests, particularly in areas with many students, as well as a highly partisan Presidential election cycle (Carlson & Gardner, 2020). Driving the news cycle for months prior to and during the 2020 fall semester was the Presidential election, and any decision to resume online instruction or return to in-person instruction was not without political considerations and ramifications. The election highly influenced the framing of the pandemic in the news media and among official public health sources. Prior research found that institutions in states that Donald Trump carried in 2016 had greater odds of in-person instruction (St. Amour, 2020). We extend this analysis to include more proximate leaders to better understand the political context. Our findings show that the odds of being online-only in a state that the Republican party holds majority control (Executive and Legislative Control) was .447 times that of a state where the Democratic party held majority control ($p = .000$) (Appendix A). If an institution was in a state that was controlled by a Democratic governor and a Democratic legislature, that institution was significantly more likely to be predominately online or fully online. Institutions that were represented by Republicans, whether it be Republican-controlled legislatures and Governors, had greater odds of in-person instruction.

Figure 3 presents data on the executive and legislative control of the state by the percentage of institutions that offered in-person instruction for fall 2020. As Figure 3 indicates, nine of the 10 states with the highest percentage of in-person instruction have either Republican Control or a Republican Majority. Conversely, seven of the ten states with the lowest percentage of in-person instruction have either a Democratic Majority, or Democratic Control. This feature is particularly salient when one considers that a state like California, a state with 348 institutions in our data had only 4.3% of its institutions in-person (as compared to South Dakota with only 20 institutions).

Given these findings, it is possible that political control of the state mattered at least as much or more than the number of COVID-19 cases at the state level or official public health guidance in determining open and close-practices as universities. the decision to remain in-person or online were solely determined by health factors, then it is likely that nearly all institutions would have remained online for fall 2020 as was the only option for “lowest risk” for institutions of higher education that was recommended by the Centers for Disease Control and Prevention (2020).
INSTITUTIONAL FACTORS SHAPING FALL COURSE SCHEDULING PLANS

Broadly there are several factors that influenced institutions to resume in-person instruction including admissions selectivity, intercollegiate athletics, institutional size and mission, and financial constraints. We dedicate considerable time to exploring each of these factors, because, as we later argue, they influenced the overall enrollment and financial health of colleges and universities.

Admissions selectivity

We find that an increase in institutional selectivity as measured by an increase in the SAT-Math 75th percentile score was associated with a 1.003 increase in the odds ratio of that institution being online-only \( (p = .010) \) (Table A2, Appendix A). Prior research from Zemsky et al. (2020) found that highly selective institutions, or, as they term them, “Medallion” institutions command a market position that enables them to substantially define their role in higher education. Zemsky et al. advance a “market imperative” model, arguing that if more people wish to attend a particular institution, that institution has greater autonomy in the decision making process relative to more comparable and competitive
spaces in the market (Zemsky et al., 2020). With some notable exceptions—the University of North Carolina at Chapel Hill being one—we find support for this assertion. Highly selective institutions, like Stanford University, were among the first to decide to transition to online instruction in the spring and remain online through the fall. Similarly, Harvard University announced that their fall semester classes would be online (The Crimson Editorial Board, 2020) in early summer, well before other institutions had announced their fall semester plans.

**Intercollegiate athletics**

Although many administrators reported that their fall course scheduling plans were not related to athletics, our evidence indicates that there was a significant difference among NCAA institutions that chose in-person instruction for fall 2020 compared to those that chose to be predominantly or fully online. If an institution had an NCAA football program, the odds were nearly twice as likely that the institution chose in-person instruction in the fall (see Table A3, Appendix A). In addition, if an institution’s athletics budget was separately budgeted, meaning the majority of athletics funding did not come from students services, the institution had even greater odds of in-person instruction (Forde, 2020). Interestingly, this trend also held true for smaller, independent institutions. It was not just large NCAA Division I institutions where there was a clear preference to resume in-person instruction and intercollegiate athletics as soon as possible (Tatum et al., 2020).

Prior research has found that a substantial number of students that attend universities in Divisions II and III, are student athletes (Jones, 2014). Prior to the pandemic, intercollegiate athletics was touted by independent institutions like those in the Council of Independent Colleges (Suggs et al., 2020) as an effective strategy for retaining students over four years (Kelderman, 2020). For example, Berry College, with an enrollment just over 2000 students, remained primarily in-person in fall 2020, as did Central Methodist College, which has 1148 students, 60% of whom are athletes. At Central Methodist, the COVID-19 infection rate swelled to 28% during the fall semester (Diep, 2021). The pressure to maintain an in-person athletics program to ensure enrollment and retention may have stood as an opposing force to choose an online mode of instruction.

**Institutional size and mission**

The larger the institution's enrollment, the greater the odds the institution was to choose online instruction for fall 2020. From a public health perspective, this makes a great deal of sense and could be a contributing factor to the decision to remain online for the fall semester. For example, Sierra College was among the first 2-year institutions to announce that they would continue online instruction in the fall, announcing on April 27, 2020. Sierra College represents the largest seat of activity on a weekly basis in Placer County, California (CBS Sacramento, 2020). Lucas Moosman, Executive Dean for Student Success at Sierra, said that the decision to remain online was made in consultation with county health experts and offered an advantage to faculty. “Knowing that faculty would be online provided them the better part of the summer to prepare” (CBS Sacramento, 2020). Sierra was an innovator and leader in California as the institution’s decision was quickly followed by the California State University system, which announced on May 12, 2020 that all State University System institutions would be online in the fall (The California State University, 2020).
The trend to continue online instruction in the fall was not simply relegated to institutional size, regional differences, or institutional control. Historically Black Colleges and Universities (HBCU) and Hispanic Serving Institutions (HSI) both had greater odds of online instruction for fall than other institutions, even when controlling for the size and political context, selectivity of the institution, and the role of intercollegiate athletics on the fall plan (see Table A4, Appendix A). Similar findings held for HSIs which had greater odds of online instruction. For institutions that opted to remain online, the decision was not without consequences for faculty, students, and the broader community (see Table A5, Appendix A).

Hispanic students may have experienced pandemic-related difficulties related to enrollment and disability services. Our findings indicate that HSIs had greater odds of having a larger proportion of their students with registered disabilities than comparable institutions, and those institutions had greater odds of online instruction. There was a tremendous amount of inequity as research from the National Student Clearinghouse found a 29% decline in low-income high school (Hoover, 2020) and a 14% decline in Hispanics entering public 4-year institutions and a 27% decline among Hispanics entering public 2-year institutions (National Student Clearinghouse Research Center, 2020). Online instruction may have left students at HSIs, especially those in need of disability services, at a disadvantage and might have led to declines in enrollment.

African Americans, who have lower college-going rates than white students (National Center for Education Statistics, 2020) were also disproportionately affected by COVID-19 (Marshall, 2020). In a purposive study conducted by UNCF of more than 5000 students in 40 states, and 17 HBCU institutions, approximately 10% fewer students planned to re-enroll in college if courses were fully online in fall 2020 (UNCF, 2020), with 94% of first-year students preferring a fully in-person or hybrid experience over predominately online, or online-only (UNCF, 2020). A key finding of this study was that of those that thought COVID-19 significantly impacted student well-being, nearly one-quarter (24%) were considering a transfer or would be transferring (4%) (UNCF, 2020). The level and extent the online instruction may have influenced student retention or on-time completion among these institutions is still not yet known.

**Financial considerations**

For many administrators, the decision to remain online or resume in-person instruction was also about the financial survival of their institution. In the early days of the pandemic, research by Bevins et al. (2019) found that if COVID-19 were to continue into fall 2020 approximately half of all private not-for-profit institutions would experience a revenue gap greater than 5%, and if the pandemic persisted into fall 2021, 43% of those institutions would experience a gap in excess of 20%, signaling the likely closure of scores of institutions. Prior research conducted by Kelchen (2020) and Zemsky (2020) have found that the size of an institution’s endowment is positively associated with the likelihood that an institution will remain financially solvent, as these institutions have more resources to draw from during challenging times. We find support for this claim for COVID-19 as our research found the larger the institutional endowment, the greater the odds that the institution would be remain online during the fall semester (Table A6, Appendix).

Tuition price was also an important factor in determining the relative stress of an institution. Some highly selective institutions like Harvard and Stanford have a great deal of competition for admission. Consequently, they experience price inelasticity (Grantz, Neidenhower, and Barnshaw, 2021) and can command the market price desired without
experiencing the financial pressures, other, less selective and more price competitive institutions face. Simply put, many institutions did not have the economic power to provide students and faculty such advance warning about in person and online scheduling. Some private liberal arts colleges delayed the announcement of fall plans (The Chronicle of Higher Education, 2020) until students had provided deposits for the fall semester. Regardless of the political context or structural factors that influenced the decision to remain online or resume in-person instruction the decision had enrollment and financial implications that will likely persist for years to come.

THE ENROLLMENT AND FINANCIAL IMPLICATIONS OF FALL PLANS

Thus far, we have asserted that political and structural factors related to selectivity, athletics, size and mission, and finances influenced the odds that an institution would remain online or resume in-person instruction in fall 2020. We turn now to the implications of these decisions looking at two key areas: enrollment health and financial health. To better understand the challenges institutions faced, we draw upon two, nationally representative studies conducted during fall 2020.

Enrollment implications of fall plans

We conducted a nationally representative sample of colleges and universities in September and October 2020 and found that COVID-19 provided substantial challenges to enrollment for many institutions. Over 80% of the greatest declines (greater than 10%) in enrollment in were among institutions that were hybrid, primarily online, or fully online. Of those surveyed (Kelderman, 2020), the greatest institutional impact was experienced by associate's institutions with 50% of all 2-year institutions reporting an enrollment decline of greater than 10%, while an additional 20% reported enrollment declines, greater than 5% (70% of 2-year institutions reported declines greater than 5%). While 50% of associate's institutions experienced an enrollment decline of greater than 10%, none of the highly selective Association of American University institutions reported a similar decrease. Among 4-year institutions, most enrollment declines were experienced by private institutions, which made up more than three-quarters (76.6%) of institutions that experienced a greater than 10% decline in enrollment. As one institutional respondent noted, “our freshman class was down 32% against a record class in fall 2019. From an average year, it was down about 15%.”

Not all institutions saw a decrease in enrollment in the fall semester. Among the minority of institutions that saw enrollment gains, they tended to be public institutions in a large urban area. One such example was the University of North Carolina Charlotte, which posted the largest class in the institution's 75-year history. Despite COVID-19, and not requiring a student deposit in advance, the institution welcomed the largest first-year class of 4000 students, and of the new 6600 undergraduates 6200 or about 93% resided in North Carolina (University of North Carolina Charlotte, 2020). A growing state, with the desire of many students wanting to stay close to home and in-state likely fueled some of this enrollment growth. Claire Kirby, Director of Undergraduate Admissions noted that “the significance of the role of faculty, staff and students, in recalibrating our enrollment efforts as a result of the coronavirus cannot be overstated.” (University of North Carolina Charlotte, 2020)

While the University of North Carolina was not alone in experiencing an increase in enrollment due to COVID-19, it was not the norm. Many institutions experienced
significant challenges related to enrollment, and even, when the institution did not see a 10% decline in enrollment, they often engaged in practices that did little to help their financial position. Private 4-year institutions, like small, liberal arts colleges, which operate in a competitive space, often have less competition for seats, and thus, experience greater price elasticity.

Often, market price is an indirect function of enrollment pressure. If an institution has an enrollment target of 1000 first-year students, but only 950 students enroll, there is a loss of revenue. Consequently, private institutions, which have greater flexibility in offering tuition discounts, will be more likely to engage in tuition discounting to attract students. Thus, while an institution may be able to attract 1000 students, it may have had to offer deeper discounts to meet target enrollment. This places downward pressure on revenue.

### Financial responses to enrollment changes

In many instances, institutions experienced moderate declines in enrollment, around 5% (or 950 of 1000 students). However, as the rate of discounting increased, to attract students and meet enrollment needs, institutions faced far greater financial stress. Institutions must balance the annual demands of a selective enrollment which increases the likelihood that students will graduate on-time (and provide additional revenue for subsequent years), and a less selective enrollment which increases the likelihood that students drop out.

An increase in the total tuition and fees was associated with a 1.00 increase in the odds of that institution remaining online-only in fall 2020 ($p = .063$) (see Table A2, Appendix A). While this effect may appear insignificant, every thousand-dollar increase in the price of tuition and fees substantially increased the odds that an institution would have classes online. This adds up when one considers that tuition can vary in the tens of thousands of dollars between institutions. The higher the price of attendance, the greater the odds an institution would remain online in fall 2020. This finding again offers support for the importance of market position in determining fall plans. Highly prestigious universities enjoy the benefit of price inelasticity, net of selectivity. For instance, if Harvard were to raise its tuition, the demand for an education at Harvard would remain about the same. Similarly, we can expect institutions with a high cost of attendance, such as Ivy League institutions, to feel less pressure to offer in-person classes to meet enrollment goals, even if students prefer in-person instruction.

Figure 4 indicates the average tuition discount rate for first-time undergraduates by control and Carnegie classification. As you can see from the box and whisker quartile plot,
the median discount rate for private baccalaureate institutions was 53%. Meaning that for every $1000 tuition sticker price, the institution was taking in $470. Perhaps more troubling is that among private baccalaureate institutions, approximately one-quarter of institutions were discounting more than 64% for first-year students.

This is especially problematic for private baccalaureate institutions for at least three reasons. First, private baccalaureate institutions receive no state appropriations, resulting in greater tuition dependency from students. Second, private institutions tend to be less research focused. Thus, they are less able to rely upon alternative revenue sources such as separately budgeted research in the forms of grants and contacts. Third, in contrast to larger institutions that tend to be public, or even private doctoral institutions, private baccalaureate institutions tend to lack the economies of scale to expand classroom caps in challenging times to offset some sources of cost. Additionally, institutions that offered the greatest tuition discounts were also among those that had the greatest odds of declining residence hall revenue, particularly if those institutions were predominately online, or online-only.

Private institutions were also adversely affected as it related to revenue changes in their endowments. Prior research from the NACUBO Survey of Endowments (Ad Astra, 2020) found that since private baccalaureate institutions have smaller endowments, they tend to be less involved in international markets where returns are potentially higher. Our analysis reveals that baccalaureate institutions, institutions with smaller total undergraduate enrollment, and less selective institutions as measured by 4-year graduation rates, had greater odds of decline in endowment revenue. These findings are supported by the NACUBO Survey of Endowments for 2020 (June, 2021), which found that endowments were falling from lost returns and institutions spending down their endowments at a greater rate. Edward Steinmetz, Senior Vice President of Finance and Administration at the University of Scranton, a private master's institution in Northeastern Pennsylvania, felt that COVID-19 was forcing hard, yet necessary decisions. He told Scott Carlson “We’ve had negative variances in the past, but never to that extreme (brought on by COVID-19)…” The pandemic has “forced us to have conversations, which I think is a sea change for campuses like ours and a lot of academic leadership.” Tuition losses will represent about two-thirds of the university's shortfall this year, Steinmetz noted, with the University of Scranton setting its tuition discount rate at 54% with peer institutions being much higher (Carlson, 2020).

Financial changes result in differential revenue declines by institutional type

As fall 2020 progressed, it became increasingly clear that the decision to remain online was having serious financial implications on institutions. In a separate, nationally representative sample of nearly 200 four-year institutions conducted by the authors, we found that enrollment declines were leading to some serious tuition discounts, which as we shall see, turned into financial declines.

Figure 5 indicates that among private baccalaureate institutions, 49% experienced a decline in net revenue greater than 5% (see Figure 5). This steep decline in net tuition revenue was more severe than more selective institutions in a more competitive pricing structure. For example, only 18% of private doctoral institutions experienced a change in net tuition revenue greater than 5% (lowest among all private groups). Among private doctoral institutions, nearly half (43%) experienced an increase less than 3%, indicating that even during challenging times, some more selective private institutions were able to maintain some price inelasticity.
While private baccalaureate institutions were disproportionately affected, this did not mean that public institutions were not affected. As larger, public institutions had greater odds of being online, many experienced declines in enrollment. This resulted in stress on the balance sheet and financial position of the institution. To attempt to offset enrollment tuition declines, many institutions announced staff reductions in fall 2020. As Figure 6
indicates, the most common proposal was to reduce part-time staff (29.7%) followed by administrative staff (27.6%) and full-time support staff (25.2%). Non-tenure track (11.8%) and tenure-track faculty were least likely to face planned staff reductions.

In nominal terms, public institutions with an enrollment over 10,000 undergraduates, had greater odds of declining dining facilities revenue. Institutions that decided to remain online had the greatest odds of dining revenue declines. Public institutions also had greater odds of declining residence hall revenue, with larger more selective (4-year graduation rates) and predominately online institutions having the greatest odds of residence hall declines.

Larger institutions also incurred greater expenditures due to COVID-19. Doctoral institutions that had large undergraduate populations had the greatest odds of incurring more expenses in retrofitting campus. This effect held for institutions that were predominately online or online-only. Even while students and faculty were not utilizing the built environment of their campus, many institutions had begun the process of retrofitting campus for an eventual return to in-person instruction. One such example was Ohio State University, a large, public doctoral institution that has a high graduation rate and spent heavily on health and safety, despite maintaining a hybrid schedule for fall 2020 (Ohio State University, 2020).

For many institutions, whether in-person, hybrid, or online, the testing of students and the community became a considerable new expense. In September, research by Korn and Abbott of the Wall Street Journal (2020) found that as many as 3200 cases a day occurred in the United States as a result of reopening campuses for some in-person instruction, which likely would not have happened if all institutions remained online. As the pandemic raged on, subsequent research found that as many as 6000 cases per day (Andersen et al., 2021) could be attributed to the decision to reopen for instruction.

Large, public institutions with high 4-year graduation rates were also among the institutions that had the greatest odds of additional expenditures on COVID-19 surveillance and testing. One notable example was the University of Illinois that by December 15, 2020, had conducted one million COVID-19 tests (News Bureau, 2020) on campus. By the start of the fall semester, 2% of all COVID-19 tests (Deliso & Bhatt, 2020) in the United States occurred on University of Illinois’s campus. Despite a surge of COVID-19 cases at the start of the semester, it appears that the massive testing regime paid off as the University of Illinois was able to keep on-campus positivity rate below 1% and saw no COVID-19 hospitalizations or deaths (Proctor, 2020) during the fall 2020 semester.

Large public institutions were not the only institutions that developed an outstanding testing regime to keep the prevalence of COVID-19 to a minimum on their campus. Historically Black Colleges and Universities (HBCU) also developed incredible testing regimes. Allan Golston, President of the United States Program at the Bill and Melinda Gates Foundation, noted that HBCU institutions faced a “double risk,” in that black Americans were disproportionately affected by COVID-19 and that colleges faced surging numbers as the semester progressed (Golston, 2020). To effectively respond to these challenges, 29 HBCU institutions created The Just Project, a partnership designed as a hub and spoke model of 10 testing hubs to process 20 of the 100+ HBCU institutions COVID-19 tests within 48 h (Meharry Medical College, 2020). In addition to the excellent work undertaken by HBCU institutions on testing, some began campaigns around vaccine awareness. For example, James Hildreth, President of Meharry Medical College (Meharry Medical College, 2020), began enrolling participants in a clinical trial of one of the vaccines and preparing students, administrators, and the community for the eventual rollout of the vaccine before it was even approved by the Food and Drug Administration.
As institutions moved into the fall, it became increasingly clear that federal policymakers needed to do more. In our financial health survey, nearly one-quarter of all open-ended responses revolved around the CARES Act, nearly all of it positive. “CARES Act was critical to maintaining financial health overall.” Another institutional respondent noted, “The CARES Act funds have greatly assisted. A third noted, that “CARES Act dollars have helped this year, but many unknowns for next fiscal year.”

The importance of the CARES Act is illustrative of the role federal and state policymakers can play in assisting institutions financially through hard times. The American Rescue Plan Act, signed into law by President Biden on March 11, 2021, includes almost $40 billion in funds to relieve financial pressure at colleges and universities. Almost $36 billion will go to 3500 public and non-profit colleges and universities, with $400 million going to for-profit institutions and $200 million to institutions with exceptional need. Minority serving institutions receive almost $3 billion in funding as well. All of this funding will support institutional operations in the same way CARES Act funding helped institutions weather the onset of the pandemic. It is not an exaggeration to say that there are some institutions that will be able to keep their doors open due to the support they receive from the American Rescue Plan. The financial hits institutions have taken in the fall are not yet over; the Spring 2021 semester has proven to follow a similar path to fall 2020.

### TABLE 2 Fall 2020 mode of instruction and spring 2021 mode of instruction

| Spring 2021 mode of instruction | Fully in person | Primarily in person | Hybrid | Primarily online | Fully online | Totals |
|----------------------------------|-----------------|---------------------|--------|------------------|--------------|--------|
| Fully in person                  | 31              | 22                  | 6      | 13               | 0            | 72     |
| Primarily in person              | 20              | 245                 | 53     | 144              | 3            | 465    |
| Hybrid                           | 3               | 101                 | 110    | 220              | 8            | 442    |
| Primarily online                 | 2               | 79                  | 69     | 641              | 16           | 807    |
| Fully online                     | 2               | 13                  | 17     | 133              | 61           | 226    |
| **Totals**                       | **58**          | **460**             | **255**| **1151**         | **88**       | **2012**|

SPRING 2021 AND BEYOND

Following the uncertainty of the fall semester, the spring began with a new Presidential administration and greater hope that more stimulus and relief would come to higher education. Under the Consolidated Appropriations Act (Oliver & Simkanich, 2021), higher education received $22.7 billion in appropriations, plus an additional $4.1 billion for the Governor’s emergency fund. As Table 1 illustrates, most institutions continued or slightly modified plans from the fall into spring 2021. Take for instance, the bottom-leftmost blue box with a value of 2 that has “Fully Online” to its left, and “Fully in person” five cells above it. That represents that two institutions moved from a fully online modality in the fall to a fully in-person modality in the Spring. Likewise, the purple box with a zero in it shows the number of institutions that went from fully in person in the fall to fully online in the spring—zero. There are two different shades of both colors, lighter and darker blue and purple. The lighter colors represent “marginal” changes and the darker colors are “extreme changes.”

Table 2 shows totals for the differences among marginal and extreme changes. There are 857 institutions (857/2012 = 42.59%) that have experienced a marginal change (light orange or purple). The difference between hybrid, primarily online, and primarily
TABLE 2 Severity of changes by spring 2021 mode of instruction

| Change from fall             | Fully in person | Primarily in person | Hybrid | Primarily online | Fully online | Totals |
|-----------------------------|-----------------|---------------------|--------|-----------------|--------------|--------|
| Stayed the same             | 31              | 245                 | 110    | 641             | 61           | 1088   |
| Marginal Change             | 20              | 202                 | 122    | 497             | 16           | 857    |
| Extreme Change—Online       | 0               | 0                   | 6      | 13              | 11           | 30     |
| Extreme change—In-person    | 7               | 13                  | 17     | 0               | 0            | 37     |
| Total change                | 27              | 215                 | 145    | 510             | 27           | 924    |

in-person can be just a handful of classes. An institution with a fairly even distribution of online and in-person classes in the fall can add a few more in-person classes to take that institution’s mode from primarily online to primarily in-person. By the same token, it would not be surprising to see a primarily in-person school add a few more online classes and become a primarily online school. The same stands for fully in-person schools that add some online classes to become primarily in-person, or fully online schools that add some in-person component to move to the primarily online category. The point is that these are marginal changes. If an institution goes from 45% online and 55% in-person classes in the fall to the other way around in the spring is making a choice to change its modes of instruction; the day-to-day life for students, however, probably does not change much under these conditions. For those institutions that did make an extreme change, there is no clear trend in the direction of in-person instruction or online instruction. Note that 37 institutions are making a change that is in the direction of in-person instruction, while only 30 are making extreme moves in the direction of online.

Given the lack of substantial change in modes of instruction from the fall to the spring, it is likely the same political and institutional factors continue to shape instructional decisions. As one respondent noted in our financial health survey, “[our institution is] strong, but continuing to operate online, puts us in a precarious position. Moving to remote-only [permanently] would be very damaging to the operating budget. The enrollment concerns and financial health held by institutions in the fall are most certainly extant in Spring 2021 as well.

PANDEMIC INNOVATORS

Despite considerable challenges, some systems and institutions innovated as the pandemic spread and forced campus and system-level changes to university operations. We highlight three as examples of best practices from innovators.

Idaho changes approach to standardized tests

When it became a considerable challenge for high school students to take standardized tests such as the ACT or SAT to gain entrance to college, the Idaho State Board of Education unanimously waived the college entrance exam as a requirement for admission to Idaho state institutions (Corbin, 2020). Subsequently, since many high schools were issuing courses pass/fail, they also agreed to lower the requirement from 3.0 to a 2.8 GPA for entrance. Taken together, these two policy shifts meant that any Idaho high school student with 2.8 GPA or better could gain admittance to Boise State University, the
University of Idaho, or the other public institutions. In coordination with the public institutions, any Idaho student could set up an account, and visit the Next Steps Program/Apply Idaho website and download their acceptance letters to one of the four 4-year institutions in the state (Idaho State, Boise State, University of Idaho, Lewis-Clark State College). A wonderful way to expand access and promote college-going culture, despite considerable enrollment challenges.

Mohawk Valley Community College examined resource distribution

Mohawk Valley Community College is a public 2-year institution with an enrollment of approximately 4000 students near Rome, New York. Like more than half of the 2-year institutions mentioned previously, Mohawk Valley believed they would experience an enrollment decline of 11.75%, largely due to COVID-19. This likely enrollment decline resulted in the institution looking at a projected budget cut of approximately 10%. To address these challenges, Mohawk Valley partnered with Ad Astra, a course scheduling and enrollment management organization, to better align their course schedule, taking into account courses in general studies, that never previously had large enrollment challenges, but were now suffering due to a lack of first-year enrollment. As Figures 6 and 7 indicates Mohawk Valley was able to gain greater insights into the cost of programs as well as the time to degree for students in real time, to ensure that students were able to get the courses they need when they needed them.

By better understanding the cost to deliver instruction as well as the number of students in each pathway in real time, Mohawk Valley gained greater clarity around which sections to run and where to best prioritize faculty resources, without having to issue widespread faculty reductions. Like the University of Scranton, by addressing challenges of enrollment and financial health simultaneously, Mohawk Valley community College is in a better position after COVID-19 began than prior to COVID-19.

Purdue demonstrates value through industry alignment

Finally, many institutions are seeking to better address challenges of demonstrating value to the public. Prior research by Gallup has found that 95% of chief academic
officers believe (Busteed, 2018) that their institutions are adequately preparing students for the labor market. However, only 34% of undergraduates (Crabtree, 2019) strongly believe that they have the skills needed for labor market success, and only 11% of hiring managers believe students have the skills and competencies their businesses need (Busteed, 2018). One way to better address the gaps between what employers want and what students have when they graduate is to align in-demand skills, which are often taught in the classroom, with what employers want. One novel exemplar of this approach is Purdue University’s Master’s in Business Analytics and Information Management (MS BAIM). This master’s program at Purdue ensures alignment between student skills and labor market demand through engaging in a variety of curricular activities such as requiring applied data projects and capstones that utilize industry experts as mentors, offering highly regarded industry-developed certifications and stackable credentials that help differentiate students from their peers, and continuously accessing labor market skill through alumni and industry surveys and labor market data. Taken together, activities such as these help to instill confidence in students and their families that degrees, and high tuition are worth their cost and help institutions effectively respond to crisis like COVID-19 and change to meet the demands of the future workforce.

CONCLUSIONS AND POLICY RECOMMENDATIONS

As the Purdue University example just detailed, when only 34% of undergraduates and 11% of hiring managers believe that students have, or are graduating with the skills they need to be successful, many have become skeptical of the value of higher education as evidenced by recent surveys (Busteed, 2018; Crabtree, 2019). Higher education institutions need to innovate and demonstrate their value to the public in order to weather future pandemic-scale challenge. There is often a balance between a general interest, in this instance, the safety of students, faculty, staff and the broader community, balanced with political concerns of state actors and institutional factors like admissions, selectivity, intercollegiate athletics and the finances. Our research underscores the importance of institutions and systems develop, or, continue to develop an extensive network of state and federal level political support—as so much of pandemic mode of instruction decision-making was related to the political ecology of institutions’ states. Institutions may want to consider increased lobbying or government relations support whether it be formal positions or liaisons between administrators and state actors like the governor and prominent higher education policymakers. The challenges COVID-19 has created will remain for years for state and federal policymakers. The CARES Act and other state efforts to keep higher education institutions afloat during the pandemic have opened a policy window for greater government investment, after a near decade of declines. We believe that it is relatively easy for both public and private institutions to advocate for more resources as college graduates positively contribute to the economic productivity of states and the nation. However, one reason that it has been relatively easy to reduce state appropriations and federal spending on education has been the lack of advocacy groups to effectively engage policymakers in the value of higher education. The higher education lobby traditionally received favored status among legislators despite much lobbying (Camp, 2021). While established interests exist to advocate for civil service, and retirement benefits, higher education-focused interest group spending pales in comparison to that of other major lobbies. For example, while the leading trade group for higher education institutions, the American Council on Education (ACE), spent $741,274
lobbying Congress in 2020, the trade group for business, the US Chamber of Commerce, spent $82 million, according to the Center for Responsive Politics. A stronger, more strategically aligned interest group could positively improve state and federal appropriations in ways that have not been seen this century. There are some signs this trend may be taking hold; higher education institutions now represent 70% of all education-related interest groups lobbying Congress, and 80% of education lobbying expenditures (Marsicano & Brooks, 2020).

We remain concerned about the fissures of interests between private and public institutions and groups that do not advocate together as they once did (Marsicano, 2019). Generally, state and federal advocacy is strongest when many voices advocate for the same change (e.g., expansion of grants to student; greater state appropriations). Yet public and private institutions with differing goals have shown a lack of cooperation over recent policy issues like taxing non-profit institution endowments (as part of the Tax Cuts and Jobs Act of 2017) and lobbying restrictions that effect non-profit institutions, but not public institutions (Marsicano, 2019). Yet COVID-19 affected both public and non-profit institutions in similar ways. It is our hope that recent fissures give way to a unified sense of purpose as higher education institutions navigate the post-COVID-19 era.

The higher education sector cannot rest on its laurels. Many institutions that succeeded during the COVID-19 pandemic in the fall 2020 semester practiced outrageous innovation. When it became clear early in the fall semester that colleges would only be able to remain open and contain the spread of COVID-19 with an exceptional testing regime, two institutions—Duke University and the University of Illinois at Urbana-Champaign—invested heavily in testing innovation. UIUC developed its own saliva test, dramatically reducing overall costs of testing and the time to receiving testing results. Duke University invested heavily in pooled surveillance testing, allowing the campus to engage in cost-effective, highly targeted testing of at-risk students. Yet, the innovations of the COVID-19 pandemic are not limited to technological innovations; pedagogical innovations also took root. Paul Quinn College and the California State University System built out faculty online teaching capacity, with the former developing a 3-year online bachelor’s degree in business and public policy. Davidson College used the crisis as an opportunity and created the College Crisis Initiative—a student development and research lab. Using the pandemic as a focus, faculty taught students research and data collection methods. The pandemic became an educational experience that facilitated research skills development. In all of these cases, institutions used the crisis to breed innovation. Institutional leaders should understand that so much of crisis response should be determining where challenges can beget opportunities.

Leaders, however, will need help. Institutional innovation is only as good as policy support for it. To combat rising inequality among institutions, the federal government may need to step in to keep some institutions afloat. We have discussed the CARES Act and the American Rescue Plan and their impact on keeping higher education institutions from shutting their doors. Further federal investment is needed to ensure that those institutions that are struggling to survive can thrive. By tying investments to future planning, lawmakers can incentivize innovation on college campuses.

In conclusion, we find that several political and institutional factors shaped the decision to return to in-person instruction or remain online in fall 2020, which in turn, influenced the enrollment and financial health of institutions in that semester and beyond. Just as the long-term impacts of COVID-19 on the human body may not be fully understood for years to come, the impact of COVID-19 on higher education may not fully be understood for years to come as well. One thing is certain: it will have a lasting impact.
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REFERENCES
Ad Astra. (2020). *University endowments: What are they? Why do they matter?* [Link]
American Association of Community Colleges. (2019). *Community college enrollment crisis? Historical trends in community college enrollment.* [Link]
Andersen, M. S., Bento, A. I., Basu, A., Marsicano, C., & Simon, K. (2021). *College openings, mobility, and the incidence of COVID-19 cases.* MedRxiv. [Link]
Bellevue College. (2020). *COVID-19 update archive.* [Link]
Bevins, F., Bryant, J., Krishnan, C., & Law, J. (2020). *Coronavirus: How should US higher education plan for an uncertain future?* McKinsey. [Link]
Busteed, B. (2018). *A new vision for American education: A merger of work and school* [Slides]. Slideplayer. [Link]
Carlson, S. (2020). November 20.). *Colleges grapple with grim financial realities: Net-tuition losses and steep discount rates augur a precarious spring.* The Chronicle of Higher Education. [Link]
Carlson, S., & Gardner, L. (2020). *The year that pushed higher ed to the edge: The pandemic exacerbated long-simmering problems confronting colleges.* The Chronicle of Higher Education. [Link]
CBS Sacramento. (2020). *Sierra College plans on remote instruction for fall 2020 semester.* [Link]
Centers for Disease Control and Prevention. (2020). *Considerations for institutions of higher education.* CDC. [Link]
Corbin, C. (2020). *State Board waives college entrance exam admissions requirement for 2021–22 year.* Idaho Education News. [Link]
Diep, F. (2021). *The college where 1 in 4 students got coronavirus: At one small university, well-intentioned but insufficient preparations meant a fall semester of vast infection.* The Chronicle of Higher Education. [Link]
Ember, C. R., Ember, M., & Peregrine, P. N. (2002). *Anthropology* (10th ed.). Prentice Hall.
Forde, P. (2020). *After a contentious summer, football plays on. Why? It’s complicated.* Sports Illustrated. [Link]
Golston, A. (2020). *Why Black colleges and universities are America’s newest—and most critical—diagnostic testing hubs.* Bill & Melinda Gates Foundation. [Link]
Grawe, N. D. (2018). *Demographics and the demand for higher education.* Johns Hopkins University Press.
Hoover, E. (2020). *The real Covid-19 enrollment crisis: Fewer low-income students went straight to college.* The Chronicle of Higher Education. [Link]
June, A. (2021). *College endowment spending rose and returns fell as the pandemic set in.* The Chronicle of Higher Education. [Link]
Kelchen, R. (2020). *Examining the feasibility of empirically predicting college closures.* Brookings. [Link]
Kelderman, E. (2020a). For these small colleges, no sports could mean game over. *The Chronicle of Higher Education*. https://www.chronicle.com/article/for-these-small-colleges-no-sports-could-mean-game-over

Kelderman, E. (2020b). “We haven’t begun to feel the real economic damage”: A Chronicle survey explores the impact of the pandemic on fall enrollments and how colleges are planning for the spring. *The Chronicle of Higher Education*. https://www.chronicle.com/article/we-havent-begun-to-feel-the-real-economic-damage

Korn, M., & Abbott, B. (2020). Reopening colleges likely fueled Covid-19 significantly, study finds. *WSJ*. https://www.wsj.com/articles/reopening-colleges-likely-fueled-covid-19-significantly-study-finds-11600776001

Ladner, S., & Weeden, D. (2019). *State higher education finance FY 2019*. State Higher Education Executive Officers Association (SHEEO).

Marshall, W. III (2020). *Coronavirus infection by race: What's behind the health disparities?* Mayo Clinic. https://www.mayoclinic.org/diseases-conditions/coronavirus/expert-answers/coronavirus-infection-by-race/?ap=23296

Marsicano, C. (2019). *Lobbying for alma mater: Higher education institutions as interest groups*. [Doctoral dissertation, Vanderbilt University]. Retrieved from ProQuest.

Marsicano, C., Felten, K., Toledo, L., & Buitendorp, M. (2020). *Tracking campus responses to the Covid-19 pandemic*. APSA Preprints. http://doi.org/10.3377/apsa-2020-3wvl

Meharry Medical College. (2020). *Thermo Fisher supports HBCU COVID-19 testing for ‘safe return to campus’*. https://home.mmc.edu/thermo-fisher-supports-hbcu-covid-19-testing-for-safe-return-to-campus/

National Association of College and University Business Officers. (2020). *2020 tuition discounting study*. https://www.nacubo.org/Research/2020/NACUBO-Tuition-Discounting-Study

National Center for Education Statistics. (2020). *College enrollment rates*. https://nces.ed.gov/programs/coe/pdf/coe_cpb.pdf

National Student Clearinghouse Research Center. (2020). *Stay informed with the latest enrollment information: National Student Clearinghouse Research Center’s monthly update on higher education enrollment*. https://nscrresearchcenter.org/stay-informed/

News Bureau. (2020). *Campus tops 1 million Covid-19 tests*. Illinois News Bureau. https://news.illinois.edu/view/6367/468787659

Ohio State University. (2020). *Safe and healthy buckeyes: Navigating Covid-19 together*. https://safeandhealthy.osu.edu/campus-readiness

Oliver, B., & Simkanich, B. (2021). *Policy changes and $23 billion for higher ed—What you need to know*. CLA Connect. https://www.claconnect.com/resources/articles/2021/policy-changes-and-23-billion-for-higher-ed-what-you-need-to-know

Proctor, C. (2021). U. of I.’s Covid protocols praised, copied for new semester after campus saw no hospitalizations or deaths in the fall. *Chicago Sun-Times*. https://chicago.suntimes.com/education/2021/11/18/22221957/university-illinois-covid-testing-saliva-illinois-state-coronavirus

St Amour, M. (2020). Political influence on fall plans. *Inside Higher Ed*. https://www.insidehighered.com/views/2020/10/08/consumer-perspectives-value-higher-education-and-paradox-underneath-enrollment

Stake, R. E. (1995). *The art of case study research*. Sage Publications.

Stanford University. (2020). *Online classes; Admit weekend*. Stanford University Covid-19 Health Alerts. https://healthalerts.stanford.edu/covid-19/2020/03/06/online-classes-admit-weekend/

Suggs, D., Jr., May-Trifiletti, J., & Hearn, J. (2020). Pass or run? The impact of football on independent colleges. The Council of Independent Colleges. https://www.cic.edu/resources-research/charts-data/reports/football-2020

The California State University. (2020). *CSU Chancellor Timothy P. White’s statement on fall 2020 university operational plans*. https://www2.calstate.edu/csu-system/news/Pages/CSU-Chancellor-Timothy-P-Whites-Statement-on-Fall-2020-University-Operational-Plans.aspx

The Chronicle of Higher Education. (2020). *Here’s our list of colleges’ reopening models*. https://www.chronicle.com/article/heres-a-list-of-colleges-plans-for-reopening-in-the-fall/?cfcid=gen_login_refresh&cfcid=gen_sign_in

The Crimson Editorial Board. (2020). *Fall 2020: 100% online, 40% residential, 0% certain*. The Harvard Crimson. https://www.thecrimson.com/article/2020/7/13/editorial-fall-2020-decision/

United Negro College Fund. (2020). *Student pulse survey: Covid-19 impact on fall 2020 educational plans* [Slides]. UNCF. https://uncf.org/wp-content/uploads/UNCF-Student-Pulse-Survey-Results_Final.pdf

University of North Carolina at Charlotte. (2020). *UNC Charlotte sets enrollment record with more than 30,000 students*. Inside UNC Charlotte. https://inside.uncc.edu/news-features/2020-09-21/unc-charlotte-sets-enrollment-record-more-30000-students

Yin, R. (2009). *Case study research: Design and methods* (4th ed.). SAGE Publications. https://doi.org/10.33524/cjar.v14i1.73

Zemsky, R., Shaman, S., & Baldridge, S. C. (2020). *The college stress test*. Amsterdam University Press.
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**APPENDIX: DATA AND METHODS**

The methodological approach for this work has been case study methodology (Stake, 1995; Yin, 2009). *Case study methodology* is a research design that focuses on one or more specific instances, institutions, or occasions (cases) for the purpose of exploring a process that may not necessarily be generalizable in a statistical sense (Priest, 2010). A major strength of the case study approach is that it allows for the exploration of a phenomenon in considerable depth that may not be ascertainable in other methodological approaches. The case study methodology is ideal for examining contemporary events when behavior cannot be manipulated because it allows for a blending of various data sources to provide greater explanatory power than the historical method, or only surveys that may explore conditions at brief periods of time in the survey window (Yin, 2009).

Evidence in case study methodology may come from six sources that may have some potential overlap. These six sources are (1) *documents*, (2) *archival records*, (3) *interviews and surveys*, (4) *direct observation*, (5) *participant observation* and (6) *physical artifacts* and are depicted in Table A1 with their strengths and limitations (Yin, 2009). Although there may be a conventional wisdom or common understanding of each of the preceding terms, in case study methodology each term has a specific meaning that delineates between the sources of evidence.

Wherever possible we have attempted to rely upon the most secure standards of evidence and seeking out information and content that may attempt to contend with or disconfirm our understanding of the phenomena under study, in this case, the higher education landscape from the onset of COVID-19 through the first year.

In some instances, we attempted to gather population-level data as in exploring nearly every available course scheduling plan for fall 2020 or 2021 (Interviews and Surveys). In

| Variable                                | All    | Public | Private |
|-----------------------------------------|--------|--------|---------|
| Total institutions                      | 2,000  | 1,140  | 860     |
| Average total price (in-district, living on campus) | $38,719.72 | $22,888.49 | $51,037.39 |
| Average 4-year graduation rate          | 39.81  | 28.04  | 46.90   |
| Average 6-year graduation rate          | 55.02  | 49.30  | 58.46   |
| Average SAT-math 75th percentile score  | 614.01 | 603.91 | 620.73  |
| Average coronavirus rate per 100,000 by state | 1,756.52 | 1,788.14 | 1,714.00 |
| Average undergraduate total             | 6,475  | 9,340  | 2,683   |
TABLE A2  Ordinal regression predicting fall reopening plan

| Variable                              | Exp(B)  | Standard error | Wald  |
|---------------------------------------|---------|----------------|-------|
| SAT math 75th percentile score        | 1.003** | 0.001          | 6.726 |
| Total tuition and fees                | 1.000*  | 0.000          | 3.467 |
| COVID rater per 100,000               | 1.000   | 0.000          | 0.128 |
| State government majority by political party | 0.447*** | 0.169          | 22.760|

***p < 0.001, **p < 0.05, *p < 0.10

TABLE A3  Ordinal regression predicting fall reopening plan

| Variable                              | Exp(B)  | Standard error | Wald  |
|---------------------------------------|---------|----------------|-------|
| SAT math 75th percentile score        | 1.002*  | 0.001          | 6.253 |
| Number of undergraduate students      | 1.000***| 0.000          | 15.812|
| COVID rater per 100,000               | 1.000   | 0.000          | 0.446 |
| 2016 electoral college (0 = Trump; 1 = Clinton) | 0.389*** | 0.127          | 55.778|
| NCAA football (0 = No; 1 = Yes)       | 1.374*  | 0.126          | 6.37  |

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

other instances, we fell short of a population-level estimate, but were able to make post-stratification adjustments as in our two surveys on enrollment and financial health. In other aspects, time or the availability of accessible data precluded us to explore some areas in greater depth, so we relied upon documentation such as media articles, scholarly publications, archival records or reports that had been previously issued (African American under-representation in college; NACUBO Endowment Surveys) or interviews with relevant stakeholders. Our view is that taken together, the case study methodology can offer a more complete picture of sorting “winners and losers’ of higher education following

TABLE A4  Ordinal regression predicting fall reopening plan

| Variable                              | Exp(B)  | Standard error | Wald  |
|---------------------------------------|---------|----------------|-------|
| SAT math 75th percentile score        | 1.004***| 0.001          | 17.680|
| Number of undergraduate students      | 1.000***| 0.000          | 12.729|
| COVID rater per 100,000               | 1.000   | 0.000          | 0.135 |
| Governor control (1 = Republican)     | 0.453***| 0.122          | 42.046|
| Historically Black college or university (1= Yes) | 4.266*** | 0.347          | 17.436|

***p < .001, **p < .01, *p < .05

TABLE A5  Ordinal regression predicting fall reopening plan

| Variable                              | Exp(B)  | Standard error | Wald  |
|---------------------------------------|---------|----------------|-------|
| SAT math 75th percentile score        | 1.002***| 0.001          | 18.249|
| Number of undergraduate students      | 1.000*  | 0.000          | 4.917 |
| COVID rater per 100,000               | 1.000   | 0.000          | 0.107 |
| Governor control (1 = Republican)     | 0.487***| 0.122          | 34.978|
| Hispanic serving institution (0= No)  | 0.398***| 0.201          | 21.020|

***p < 0.001, **p < 0.01, *p < 0.05
COVID-19 or understanding what happened than any other single methodology such as surveys, content analysis, or qualitative interviews because it seeks to comprise the best facets of all approaches. Despite these strengths, a variety of critiques have emerged about the case study approach (Denzin & Lincoln, 2000). The most frequent critique of case study methodology is the overall lack of statistical generalizability (Kennedy 1976). Since case study methodology focuses on a single case (e.g., United States higher education following COVID-19 from March 2020 to March 2021), our view is that this critique is somewhat misplaced as the intent of a case study is not to make statistical inferences about larger samples or populations, but rather, to understand specific phenomena and make generalizations about social behavior or theoretical propositions (COVID-19 exacerbates institutional inequity). Thus, just as a single dataset or interaction may be indicative of a particular type of behavior or theory, so too is the case study indicative of social behavior or theoretical propositions. While other critiques of the case study methodology exist (Barnshaw, 2010; Yin, 2009), space prevents us from detailing them here. However, we do not believe that these limitations preclude our study from reaching any conclusions that we have reached in this document. In the space permitting, we wish to offer a more detailed explanation of what we did, acknowledging our limitations as researchers and available data during COVID-19.

College crisis initiative quantitative dataset
This article provides research from a unique dataset compiled by researchers at The College Crisis Initiative (C2i). The dataset includes fall and spring course scheduling plans, endowment data, and various institutional characteristics on all Title-IV eligible, degree-granting institutions, with first-time, full-time undergraduates (N = 2000). These data are joined with federally reported data found in the Integrated Postsecondary Education Data System (IPEDS). Additionally, we include data from the Centers for Disease Control on COVID-19 cases as well as tracking data on hospitalizations and infections by region and state. Descriptive data are provided in Appendix Table A1. All data were collected prior to August 15, 2020.

Analyses of these data were performed using an ordinal regression. The variables presented in Table 2 are factors that impacted the odds of whether colleges held classes online or in-person. These predictive variables include the institution’s SAT-Math 75th percentile score, total cost of tuition and fees, COVID infection rate of the state, and the political party that held the majority control of the executive and legislative branches of the state government as of August 15, 2020. The dependent variable in this analysis, 2020 fall plan, is expressed in terms of the odds of an institution being (1) fully-in person, (2) primarily in-person, (3) hybrid, (4) primarily online, or (5) online-only at the beginning of the semester. An example of a hybrid offering would be a course that had one-third of students attend lecture in person on Monday, a second third attend on Wednesday, and the last third attend on Friday. When not attending a hybrid lecture in person, students attend online.

Utilizing ordinal regression, we conducted a series of analyses to provide support for our overall claims that were supported earlier in this article. It is worth noting that many of our findings offer consistent trends throughout our data and are indicative of broader findings that we allude to throughout this article. For example, we consistently found that the political context, whether it be the party that carried the state in 2016, the party of the Governor, or, a combination of the executive and legislative branch consistently predicted the odds an institution would resume in-person instruction or remain online (Democratic control significantly increased the odds institutions in that state would remain online). Thus, we present different variables to highlight broader themes (political context, selectivity, HBCU/HSI) seemed to matter irrespective of one variable or another. Consistently, we
TABLE A6  Ordinal regression predicting fall reopening plan

| Variable                                      | Exp(B) | Standard error | Wald  |
|-----------------------------------------------|--------|----------------|-------|
| Number of undergraduate students              | 1.000* | 0.000          | 4.917 |
| COVID rater per 100,000                       | 1.000  | 0.000          | 0.948 |
| Total endowment in $1000s                    | 1.000**| 0.000          | 8.077 |
| Governor control (1= Republican)             | 0.570***| 0.156         | 12.956|
| Hispanic serving institution (0= No)         | 0.329***| 0.266          | 17.447|

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

also found that the total number of COVID cases per 100,000 was not significant in nearly every model. The only caveat to these general findings is that endowment size and selectivity could not be run in the same model due to multicollinearity (Appendix Table A6). For that reason, and because we specifically mentioned the importance of endowment size selectivity as measured by SAT-Math percentile scores were dropped from that model.