

SIDEBAR

COVID-19 and Higher Education

Beginning in March 2020, the COVID-19 pandemic disrupted colleges and universities throughout the nation. The need for social distancing required an abrupt halt to in-person learning and a transition to online education. Schools closed residence halls and canceled public events. Although some reopened for in-person instruction in fall 2020, they did so with modifications and restrictions that affected campus life. Some schools had to revert to online instruction when COVID-19 case counts rose. The availability of vaccines and federal coronavirus relief funds enabled schools to resume more normal operations in fall 2021. However, new variants and continued economic insecurity still impacted the higher education plans of many people, especially underrepresented minorities and students from low-income families.

Estimated effects on enrollment

Graduating high school students' college enrollment rates were disrupted by the pandemic. Enrollment in fall 2020 of newly graduated high school seniors dropped 6.8% from 2019, 4.5 times the decline of 1.5% from 2018 to 2019. Graduates from high-poverty secondary schools experienced the steepest drops in enrollment rates at postsecondary institutions (down 11.4% compared to 1.6% in 2019) (National Student Clearinghouse Research Center 2021).

Overall postsecondary enrollment, including both undergraduate and graduate students, dropped by 2.6% in fall 2020—nearly 500,000 students—compared with a decline of 1.3% or about 230,000 students from 2018 to 2019. Undergraduate enrollment declined by 3.6%, with public community colleges experiencing the steepest enrollment decline (down 10.1%). Enrollment at public and private non-profit 4-year institutions declined by lesser amounts (down 0.7% and 1.4%, respectively). With infrastructure previously in place for online learning, enrollment at private for-profit 4-year institutions increased by 6.4% in fall 2020, reversing a 10-year trend of declining enrollment (National Student Clearinghouse Research Center 2021).

In contrast to undergraduate enrollment, graduate enrollment increased (3.6%), likely reflecting the prevalence of already-existing online programs and financial support commitments that were made prior to the pandemic. However, over 130 doctoral programs, especially in social sciences and non-S&E fields, suspended fall 2020 enrollment of new students to focus on continuing students (Zahneis 2021). Additional impacts on academic R&D and academic researchers are described in the *Indicators 2022* report “[2022] Academic Research and Development” sidebar COVID-19 and Academic R&D.

Enrollment impacts were geographically widespread but varied by state and within states. Fall 2020 undergraduate enrollment declined over 9% in three states, with nine more states experiencing a 5%–8% decrease in enrollment (National Student Clearinghouse Research Center 2021). Universities and colleges undertook or expanded various initiatives to address declining enrollment, such as making standardized entry tests optional and offering additional lower-cost online alternatives to in-person classes (Busteed 2021).

In California, overall enrollment in the nation's largest community college system dropped around 12% in fall 2020, but some institutions experienced declines of 30%–50%. Declines were greatest among older students, male students, and first-time students (California Community College Chancellor's Office 2021) as well as Black and Hispanic students (Bulman and Fairlie 2021). In Virginia, enrollment declined in 8 of 15 of the state's public 4-year institutions, including 2 historically Black colleges and universities (HBCUs). Lack of home Internet access contributed to an 8% decline in enrollment at one HBCU (Masters 2021; State Council of Higher Education for Virginia 2021).

Spring 2021 enrollment data indicate that overall fall 2020 enrollment trends continued (National Student Clearinghouse Research Center 2021). Overall postsecondary enrollment declined by 3.5% from spring 2020 (about 600,000 students). Undergraduate enrollment was down 4.9%, community college enrollment fell 9.5%, and graduate enrollment continued to grow (up 4.6%).

In an effort to achieve a more normal academic year in 2021–22, universities set expectations for vaccination and wearing a face mask. In August 2021, the Food and Drug Administration provided full (nonemergency use) approval of the Pfizer vaccine. By September 2021, over 800 colleges had adopted vaccination mandates (Nadworny and Dey 2021).

Estimated effects on degree completion, research opportunities, and job prospects

Reversing an upward trend since 2012, recipients of a first undergraduate degree declined in 2020 due to a decline in associate's degrees. The number of individuals receiving their first bachelor's degree increased, but those receiving their first associate's degree or certificate decreased (National Student Clearinghouse Research Center 2021). A September 2020 survey of about 6,000 students revealed that 50% of respondents enrolled in bachelor's degree programs and 56% of those enrolled in associate's degree programs reported that the pandemic would negatively affect their ability to complete their degree (Gallup 2020).

Research and employment opportunities for both undergraduate and graduate students were curtailed. Summer 2020 undergraduate internships were suspended, and ongoing research involving undergraduates was halted (Parry 2020; Stone 2020). In a survey of 10 public research universities, about a quarter of graduate and professional student respondents expected the pandemic to delay their graduation (Soria, Horgos, and McAndrew 2020). On a survey of 1,500 undergraduate students at a large public university, students reported reduced expectations for finding a job by graduation and for their expected earnings at age 35 (Aucejo et al. 2020). A study of 208 institutions awarding graduate science, technology, engineering, and mathematics degrees reported fewer job placements for graduates (Stewart et al. 2021).

The halting of research and the closing of universities also impacted the productivity of the faculty. A study of 284 faculty members reported that female authorship declined, and parents of children under age 6 experienced reductions in academic productivity (Krukowski, Jagsi, and Cardel 2021).

Estimated effects on teaching, student learning, and student well-being

The rapid transition to online learning in March 2020 presented challenges for both faculty and students. Respondents to a survey of almost 900 S&E faculty reported numerous barriers to teaching online, including lack of student motivation and issues related to academic integrity and equity (Seaman, Allen, and Ralph 2021). The vast majority (around 90%) of surveyed students at research universities reported learning obstacles associated with online instruction. Most reported that they lacked motivation to learn online and learned less when they could not interact with other students. Students with family responsibilities struggled to juggle online classes with child or elder care. Low-income and working-class students reported that they lacked a quiet place to study or the appropriate technology to take online classes; they also were not available at designated online meeting times (Soria et al. 2020).

More broadly, college students reported that their educational plans and mental health have been disrupted by the pandemic. Higher proportions of Blacks and Hispanics than of Whites reported that their postsecondary education plans were canceled, whereas higher proportions of Whites than of Blacks or Hispanics reported that they had to take classes in different formats (Liu 2021). A study of 195 students at one large university reported that students had concerns about their health and the health of people they love. These students also experienced difficulty in concentrating, trouble sleeping, social isolation, financial difficulties, and depressive or even suicidal thoughts (Son et al. 2020). Higher proportions of underrepresented minority students seeking counseling reported grief over the loss of a loved one, with the highest rate (17%) among American Indians or Alaska Natives (CCMH 2021). In a study of five

large, public universities, low-income graduate and professional students reported financial hardships caused by many factors, including unexpected increases in living expenses and loss or reduction in income (Soria 2020). In a separate study of undergraduate students at 9 universities and graduate and professional students at 10 universities, one in five students reported food insecurity during the early months of the pandemic (Soria et al. 2020). A large majority (73%) of respondents to an April 2021 survey of presidents of 244 higher education institutions reported “student mental health” as the most pressing issue facing their institutions (Taylor et al. 2021).

Estimated effects on higher education finances

Impacts on revenue and spending varied according to institution type and student demographics. Community colleges that primarily serve low-income families were hit the hardest. For some, their ongoing financial viability is threatened (California Community College Chancellor’s Office 2021). HBCUs are particularly vulnerable financially because many of their students come from families of modest income, and the schools’ endowments are less than those of non-HBCU schools (Manning 2020).

Throughout the higher education system, the pandemic introduced new costs, such as regular coronavirus testing and personal protective equipment. A survey of 68 member institutions of the National Association of Independent Colleges and Universities (NAICU) reported that revenue was lost from tuition, housing, and auxiliary services, such as sporting and theater events (Whitford 2021a; APLU 2020; NAICU 2020). Staffing cuts occurred at a wide range of institution types (Chronicle of Higher Education 2020). Declines in international student enrollment, discussed in the section International S&E Higher Education, reduced revenue for many institutions reliant on tuition from these students.

Several laws address the impact of COVID-19 on higher education. The Coronavirus Aid, Relief, and Economic Security Act of 2020 (March 2020) and the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (December 2020) together allocated \$35 billion in emergency relief funds to universities and colleges, including \$1 billion set aside for underrepresented minority college students and low-income, first-generation college students, with \$500 million going directly to HBCUs. The American Rescue Plan (March 2021) includes \$40 billion for higher education, half of which schools must spend on grants to students. Because of the infusion of federal coronavirus relief funds, overall state funding for higher education institutions remained roughly the same during the 2020–21 academic year as in 2019–20 (CSEP 2021; Laderman and Tandberg 2021; Whitford 2021b). Amounts awarded to states through these laws ranged from \$83 million in Wyoming to just over \$10 billion in California. As of 31 August 2021, the majority of states had spent about half of the appropriated funds, with a range from 27% (Hawaii) to 62% (Kentucky) (U.S. Department of Education 2021). In April 2021, 32% of respondents to a survey of 244 higher education institution presidents reported the long-term financial viability of their institution as a concern, down from 41% in February 2021 (Taylor et al. 2021).