

THE DOLLARS AND SENSE OF FREE COLLEGE

*By Anthony P. Carnevale, Jenna R. Sablan, Artem Gulish,
Michael C. Quinn, and Gayle Cinquegrani*



2020

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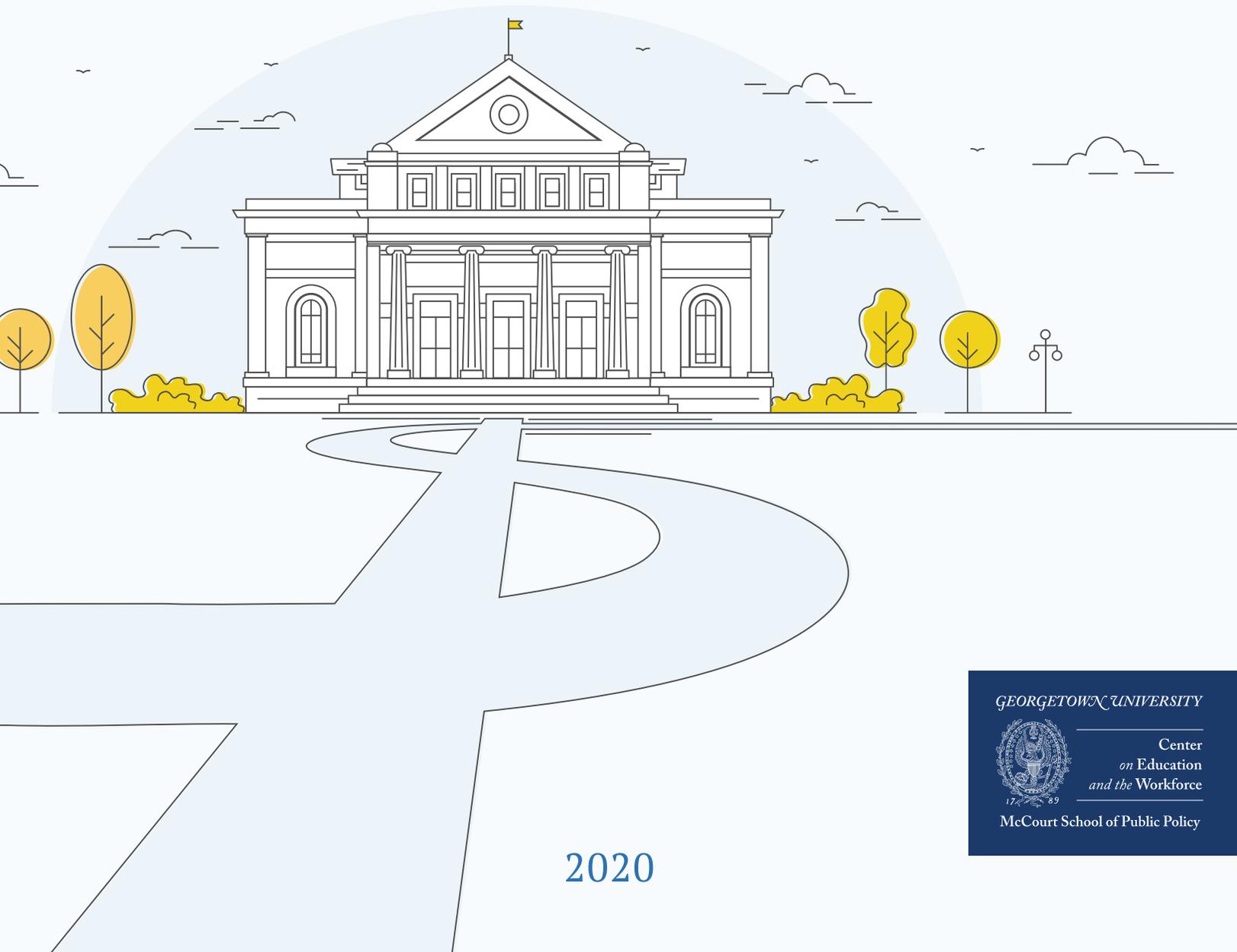
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Introduction

Free college has been gaining traction as a public policy option in recent years and has been adopted in some form by at least 15 states.¹ Enthusiasm for the idea has gained momentum with the growing realization that a healthy economy requires a well-educated workforce² and that workers benefit immensely from education beyond high school. Indeed, job market data show that 80 percent of jobs leading to middle-class wages call for at least some postsecondary education.³

Free college would likely help more students go to college and earn a degree. Despite higher education's obvious benefits, many students avoid or quit college because they simply cannot afford it. Tuition and fees at public four-year colleges have grown 19 times faster than the median family income since 1980 as funding for college has waned at both the state and federal levels, shifting much of the financial burden to students.⁴ Financial aid that fully covers tuition and fees sounds good, but it doesn't account for student living expenses, which represent 60–80 percent of the total cost of attending a public college.⁵ As a result, various free-college proposals differ on the extent to which they allow funding for the full cost of attendance, which includes expenses beyond tuition and fees for students living on or off campus.⁶

The cost of free college would differ depending on the program design. In the three common free-college models that we examined, the likely costs in the first year ranged from \$27.8 billion to \$75 billion. To understand how costs to the government can change over time due to students' responses when tuition price is advertised as free, we also model long-term responses to tuition-free college. During the decade after implementation, the cost of the three tuition-free college programs we examined could be between \$414.9 billion and \$799.7 billion.

● First-dollar tuition-free programs

These programs guarantee that the government will fully pay for tuition at a public college, allowing a student to use any additional financial aid to cover other costs of attendance, such as room and board, books, and transportation. For example, if tuition is \$10,000 and a student receives a \$6,000 Pell Grant, the government would pay the entire \$10,000 tuition bill, leaving the \$6,000 in grant aid to be used for other costs. This type of program would cost \$58.2 billion in the first year of implementation, assuming universal eligibility (Table 1).

¹ Jones and Berger, *A Promise Fulfilled*, 2018.

² Carnevale, "The Sweet Spot on Free College," 2019.

³ Carnevale et al., *Three Educational Pathways to Good Jobs*, 2018.

⁴ Carnevale et al., *Career Pathways*, 2017.

⁵ College Board, "Average Estimated Undergraduate Budgets," 2018–19.

⁶ The Higher Education Act of 1965 defines the cost of attendance (COA) to include expenses such as tuition and fees, room and board, books, and transportation. However, institutions have discretion in calculating these costs, and institutional methods vary.

● **Last-dollar tuition-free programs**

These programs guarantee that the government will pay any tuition remaining at a public college after a student’s existing federal financial aid award is used. For example, if tuition is \$10,000 and a student receives a \$6,000 Pell Grant, the government would pay the remaining \$4,000 of the tuition bill. Overall, a last-dollar program would cost \$27.8 billion in the first year of implementation. The last-dollar approach would cost taxpayers less than the first-dollar model but would not allow the neediest students to use their additional aid for living expenses, as a first-dollar program would.

● **Debt-free programs**

These programs guarantee that the government will cover tuition and all other costs of attendance, such as room and board, books, and transportation, so that students can attend a public college without having to take out loans. This type of program is the most generous and also the most expensive, costing an estimated \$75 billion in the first year.

Of course, free college is not really free for the taxpayers who will wind up paying for it. Nevertheless, supporters of free college argue persuasively that investment in the education system is a public good that yields both economic and noneconomic benefits far beyond its costs. In a diverse democratic society, higher education not only provides a path for economic self-sufficiency, it also contributes to positive outcomes such as improved health, reduced crime, and a greater sense of well-being.⁷ All these factors might reduce costs to society in the long run. Finally, higher education provides civic value by preparing an educated citizenry to participate in the electoral process.⁸

Any assessment of free-college plans needs to consider both costs and benefits. Our analysis of a free-college plan endorsed by presidential candidate Joe Biden in 2020 finds that it would have high costs but would also generate substantial benefits. Biden’s plan would allow all students at community colleges and students with family incomes under \$125,000 at public four-year universities to attend college without paying tuition.⁹ Like other first-dollar plans, Biden’s program would allow students to use their existing financial aid toward other attendance costs, such as room and board. Biden’s proposal for tuition-free college would cost \$49.6 billion in its first year, with

Table 1. The design of a free-college program influences its costs.

	TYPE OF FREE COLLEGE	FIRST-YEAR COST
	First-dollar program	\$58.2 billion
	Last-dollar program	\$27.8 billion
	Debt-free program	\$75 billion

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016–17, and National Postsecondary Student Aid Study (NPSAS), 2016.

⁷ Carnevale et al., *The Value of Economic and Racial Justice in Postsecondary Education*, forthcoming.

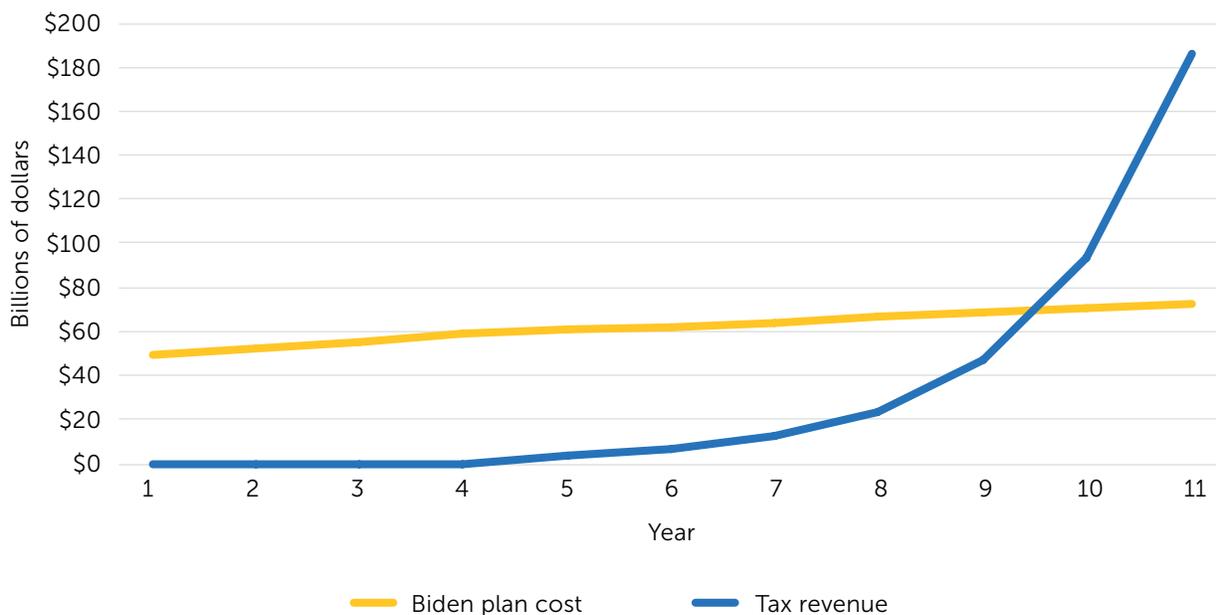
⁸ Carnevale et al., *Educational Adequacy in the Twenty-First Century*, 2018; Carnevale et al., *The Role of Education in Taming Authoritarian Attitudes*, 2020.

⁹ Based on the free-college program for which Biden announced his support in March 2020. Bradner, “Biden Backs Free Public University Tuition in Olive Branch to Progressives,” 2020.

\$33.1 billion in federal spending and \$16.5 billion in state spending. These costs are \$8.6 billion less than the costs associated with a first-dollar plan that would cover all students regardless of their family income.

Our calculations show that the increases in college attainment made possible by a national tuition-free program such as Biden’s plan could yield substantial societal benefits during the 10 years after implementation. This estimate assumes that more students would earn college credentials and get jobs that lead to an additional \$371.4 billion in federal and state tax revenue and private after-tax earnings gains of \$866.7 billion.¹⁰ These benefits would outweigh the costs of tuition-free-college programs, with yearly tax revenue exceeding the annual cost within the first 10 years after a tuition-free program is implemented (Figure 1).

Figure 1. Additional annual tax revenue associated with higher educational attainment would exceed the annual costs of Biden’s tuition-free plan within 10 years of the initial implementation year.



Source: Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Digest of Education Statistics, tables 306.10 and 306.20, 2019; the Integrated Postsecondary Education Data System (IPEDS), 2016–17; and the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2019.

¹⁰ Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Digest of Education Statistics, tables 306.10 and 306.20, 2019; the Integrated Postsecondary Education Data System (IPEDS), 2016–17; and the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2019. For more on calculating earnings and tax benefits from increased educational attainment, see Carnevale et al., *The Value of Economic and Racial Justice in Postsecondary Education*, forthcoming.

We also examine the class and racial equity implications of first-dollar programs with universal eligibility, the Biden plan, and last-dollar programs with universal eligibility. We find that first-dollar programs are more generous and more likely to equitably benefit low-income students and students of color than are last-dollar programs. We also find that a program such as Biden's would produce some equity improvements by virtue of its income cap.

A free-college program could also significantly affect the balance of enrollments between public and private institutions because federal proposals generally appropriate money only for attendance at public institutions. Our cost model projects that student enrollment at public institutions could grow by 6–14 percent over the 10 years following implementation, depending on the strength of students' responses to free-college incentives, while student enrollment at private colleges could decline by 7–14 percent.

Conversations about expanding free college appear to be increasing. At least 15 states already have some form of free college, and there are more than 200 local college promise programs that provide free college to eligible middle and high school students.¹¹ The Democratic majority in the US House of Representatives included a free-community college provision in its 2019 proposed reauthorization of the Higher Education Act. As free college has become a mainstay in the public conversation, further discussions on policy design will likely occur, including the need for effective career counseling, student support services, and accountability and transparency.

¹¹ Jones and Berger, *A Promise Fulfilled*, 2018; Perna and Leigh, "Database of College Promise Programs," n.d.

Federal and State Roles in Free-College Financing

It must be noted that the states and the federal government traditionally fill different roles in financing postsecondary education. Historically, states appropriate funds directly to public institutions, based primarily on student enrollments. The federal government primarily provides financial aid directly to individual students in the form of grants and loans, and these funds can be used at either public or private institutions.

Most free-college proposals apply only to public colleges and universities because of the state government's role in financing these institutions. However, some proposals also include private historically Black colleges and universities (HBCUs), minority-serving institutions (MSIs), and tribal colleges and universities (TCUs). While free college seems like a straightforward concept, the programs that exist at the state and local levels differ based on the types of costs they cover, the types of institutions to which they apply, their eligibility requirements, and their financing models. Proposals at the federal level also vary in their details, but most propose some mechanism by which the federal and state governments share the costs.

The current federal system of higher education finance grew out of a 1960s task force led by economist Alice Rivlin to determine if the federal financial aid model set up by the Higher Education Act of 1965 should give money to institutions or to students.¹² Ultimately, the federal government adopted the voucher model for funding higher education that has shaped federal financial aid programs, such as Pell Grants and Direct Loans. This model allows students to take the federal funding to any school they choose to attend. State and local governments make appropriations to public institutions, historically resulting in lower tuition prices for state and local residents.¹³

Higher education is sometimes called the balance wheel of state budgets. States can increase tuition prices at state colleges and universities, but they cannot easily shift onto consumers the costs of other public programs, such as K–12 education or healthcare provided through Medicaid.¹⁴ Therefore, whenever states face lean times, state legislatures tend to reduce their appropriations for colleges and universities, assuming the colleges can balance the books by raising tuition. Consequently, students and their families generally have had to bear an increasing share of the cost

¹² Mitchell, "The Long Road to the Student Debt Crisis," 2019.

¹³ Alexander and Arceneaux, "The Future of Public Higher Education Funding," 2018.

¹⁴ Delaney and Doyle, "State Spending on Higher Education," 2011.

at state colleges and universities, particularly following the Great Recession.¹⁵ As states suffered revenue losses, they collectively cut appropriations for public higher education by 24.4 percent between 2008 and 2012.¹⁶ The COVID-19 recession is likely to result in similar cuts at the state level.

Federal student aid has not kept pace with today's college prices, especially with the rapid increase in tuition and fees at public colleges and universities. In 2018–19, the federal government disbursed \$151.7 billion in financial aid, including \$28.2 billion in Pell Grants to 6.8 million students, but the purchasing power of the Pell Grant has fallen.¹⁷ The maximum Pell Grant covered nearly 80 percent of the cost of attendance at public four-year universities in 1975, but it covered only 29 percent in 2018.¹⁸

The maximum Pell Grant covered nearly 80 percent of the cost of attendance at public four-year universities in 1975, but it covered only 29 percent in 2018.

Free college is one avenue toward an entirely new financing system in which the federal government and state governments would work together to fully fund institutions so the institutions would no longer charge students for tuition. In this model, the federal government would work in partnership with states to finance public higher education, rather than limiting its role to giving financial aid directly to students. This type of free-college model is similar to the public K–12 system in which a combination of local, state, and federal funding provides tuition-free education.

¹⁵ State Higher Education Executive Officers Association, *State Higher Education Finance: FY 2018*, 2019; Webber, "State Divestment and Tuition at Public Institutions," 2017.

¹⁶ State Higher Education Executive Officers Association, *State Higher Education Finance: FY 2018*, 2019.

¹⁷ College Board, *Trends in Student Aid*, 2019.

¹⁸ College Board, *Trends in Student Aid*, 2019; Reich, "2018 Funding Bill Should Boost Pell Grants," 2018.

The Impact of the COVID-19 Recession

In February 2020, the United States entered a recession as a result of the global coronavirus pandemic. As people stayed home to avoid contracting COVID-19, consumer spending plunged. Wages plummeted when businesses furloughed workers or closed altogether. Colleges and universities moved classes online as students were forced to move off campus, and most faculty and staff began working from home.

The fallout from this recession could strengthen the arguments for a federal free-college program. As businesses delay hiring new workers until their confidence in the economy returns, there will be fewer job openings. For the jobs that are available, workers will need more education and better interpersonal skills because technology will continue to automate repetitive job tasks.¹⁹ During the recovery from the previous recession, the vast majority of net new jobs went to workers with at least some college education.²⁰

Young people, in particular, appear to be vulnerable to cyclical fluctuations in the labor market.²¹ They are usually among the first to be fired and the last to be rehired. The Great Recession of 2008 hit them especially hard, with the unemployment rate among 18-to-24-year-olds climbing to 30 percent for Black workers, 20 percent for Latino workers, and 14 percent for White workers.²² If young people can enter educational programs and upgrade their skills during the COVID-19 recession, they are more likely to be able to make up for the earnings they lost while they were not working. However, with little or no current income, they will be hard-pressed to pay for the education they need.

Some local leaders are already expanding free-college programs in response to the COVID-19 pandemic.²³ However, many observers assume that costly national proposals made by several Democratic presidential candidates must be put on hold as the federal government grapples with industry bailouts and unemployment insurance enhancements. Nevertheless, some advocates contend that this is precisely the situation in which higher education becomes an essential resource to help people gain a foothold in the labor force.²⁴ Adding to the impetus for action, economists have noted that graduating from college in a bad economy can have long-term scarring effects on a person's career.²⁵

¹⁹ Carnevale and Rose, *The Economy Goes to College*, 2015.

²⁰ Carnevale et al., *America's Divided Recovery*, 2016.

²¹ Carnevale et al., *Failure to Launch*, 2013.

²² Carnevale et al., *Failure to Launch*, 2013.

²³ Michigan Gov. Gretchen Whitmer announced a tuition-free college program to reward state residents without a college degree who performed essential services during the pandemic. Whitmer, "Governor Whitmer Announces 'Futures for Frontliners,'" 2020.

²⁴ Newfield, "Only Free College Can Save Us from This Crisis," 2020.

²⁵ Kahn, "The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy," 2010; Rothstein, "The Lost Generation?," 2019.

Higher education also faces an uncertain financial future. Student enrollment could decline due to the pandemic and then spike during a recession as people go back to school to try to improve their job qualifications for when the economy starts to rebound. In the early months of the crisis, institutions announced hiring and spending freezes and furloughs. In several extreme cases, small colleges permanently closed. As states pour their money into healthcare systems and social welfare programs strained by COVID-19, state funding for higher education will likely receive lower priority, and the postsecondary sector may face the same type of financial hits it endured from the Great Recession a decade ago.

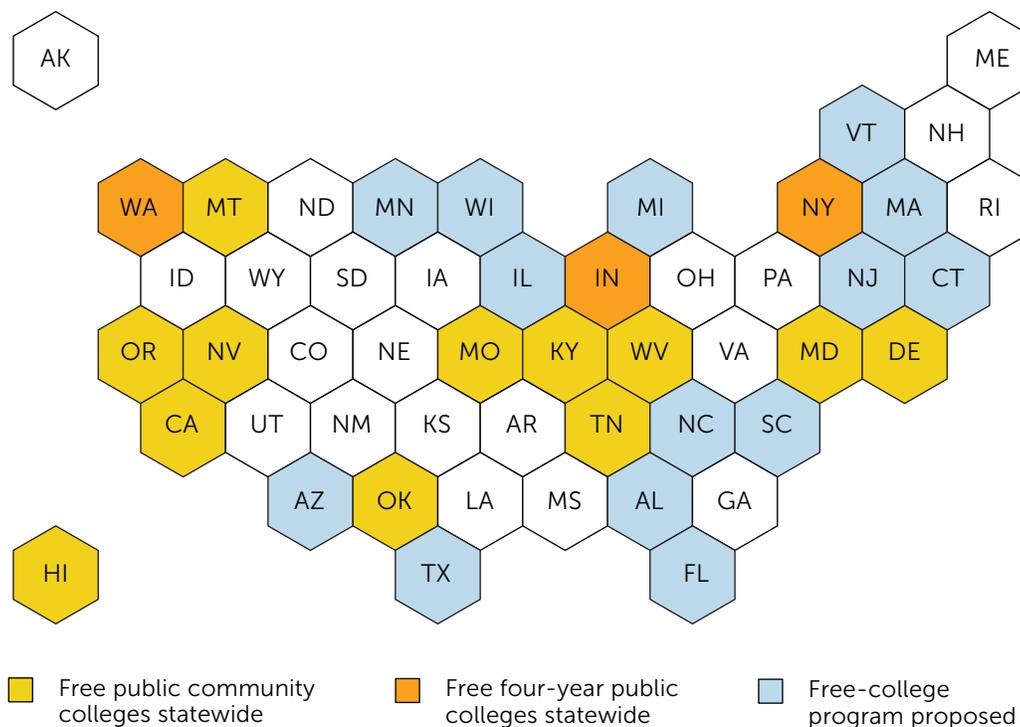


The State of Free College

Free-college programs have existed at the state and local levels for more than a decade. Today, at least 200 local college promise programs provide financial aid to students within a specified locale. One of the earliest was the Kalamazoo Promise in Michigan, a program started by private donors in 2005 that guarantees tuition payments to in-state colleges for students graduating from the Kalamazoo School District.

A number of state governments have created free-college programs principally focused on community colleges (Figure 2).²⁶ In 2015, for example, Tennessee enacted the Tennessee Promise, a free-community college program for graduating high school seniors that was later extended to returning adults.

Figure 2. States differ in the eligibility and scope of their free-college programs.



Source: Georgetown University Center on Education and the Workforce analysis of data from Jones and Berger, *A Promise Fulfilled*, 2018; Education Commission of the States, "State Education Policy Watch List," 2020.

²⁶ Hiestand, "The Promise of College Promise," 2018.

The growth in free-community college programs shows that policymakers are increasingly aware of the necessity of at least two years of postsecondary education.²⁷

Proposals for federal free-college programs generally involve a shared fiscal responsibility between states and the federal government, similar to Medicaid and the federal highway program. Beyond proposing a federal-state partnership, however, free-college proposals differ widely.²⁸ They vary as to the extent to which they will help low-income students and address students' financial needs beyond tuition. They also diverge on the number of years of college they fund and which students they cover.

²⁷ Carnevale, "The Sweet Spot on Free College," 2019.

²⁸ Baum, *Examining the Federal-State Partnership in Higher Education*, 2017.

Estimating Free-College Costs

Previous reports have examined the cost of specific proposed designs for federal programs,²⁹ but here we measure the total cost of free college for all potentially eligible students in the United States. In addition to the costs of the Biden plan, we estimate the initial cost, as well as potential changes over time, for three types of programs—first-dollar, last-dollar, and debt-free.

To create these estimates, we adopted the following definitions and assumptions:

- **Eligible students**

States often use eligibility restrictions based on enrollment intensity (full-time or part-time attendance), age, grade point average, and other factors to limit free-college program costs or target specific populations.³⁰ For this analysis, we consider students of any age or dependency status who are enrolled as an in-state student at a public two-year or four-year institution, whether full-time or part-time.

- **Public colleges and universities**

We limit estimates to costs at public two-year and four-year institutions because most current proposals focus on these institutions.

- **Capacity**

Presumably, offering free college to eligible students would change aspiring college students' enrollment patterns, and some institutions could change their capacity in response.³¹ We used reasonable assumptions of behavioral responses to consider how costs and attendees in a free-college system may change over time.

- **Federal-state share**

Most federal programs envision a federal-state partnership in which the federal and state governments would share the full cost. We do not specify the share of costs each partner would assume but instead solely estimate the total costs.

- **Cost versus price**

Cost refers to the amount that institutions spend to educate a student. Price is the amount that institutions charge students to attend. In general, we use price to refer to the tuition and fees that students and families face and cost to refer to the amount that institutions spend to provide education.

²⁹ Barrett et al., *Starting from Scratch*, 2016; Deming, *Increasing College Completion with a Federal Higher Education Matching Grant*, 2017; Huelsman, *The Affordable College Compact*, 2014.

³⁰ Carnevale et al., *Free College 101*, 2019.

³¹ Carnevale et al., *The Enrollment Effects of Clinton's Free College Proposal*, 2016.

First-dollar free-college programs would cost federal and state governments a total of \$58.2 billion during the first year.

The government covers all tuition and fees in first-dollar programs, so all existing federal financial aid could be applied to other costs of attendance, such as room and board, books, and transportation. We find that providing first-dollar free college at public institutions would cost \$58.2 billion in the first year, in addition to current spending on financial aid.

Funding last-dollar programs would be less expensive, at \$27.8 billion during the first year.

Last-dollar free college is the least expensive of the programs we modeled because it builds on the existing spending on federal and state financial aid. Last-dollar programs would pay whatever tuition costs remain after students apply all their financial aid toward tuition. To calculate the cost of last-dollar free college, we use the same number of eligible students as in our first-dollar estimates and calculate the share of tuition revenue collected from them that would not be covered by their student aid. Using our models, we estimate that last-dollar free college would cost \$27.8 billion during the first year, in addition to current spending on financial aid.

One way to control costs is to provide free college to students based on their income.

The cost estimates presented to this point describe free-college programs that have universal eligibility—open to all in-state students at public colleges and universities regardless of whether they attend full time or part time. In practice, states that have free-college programs often try to save money by restricting eligibility. For example, free-college programs could be limited to students whose grade point average exceeds a specified minimum, to those who enter college immediately after high school, or to those who attend full time.

Imposing an income cap is another way to restrict eligibility. Limiting free-college benefits to students whose incomes fall below a maximum amount would not only control costs but also address concerns that free college should go solely to students who need the most financial help. Other observers object to relying on an income cap. They argue that it can be burdensome for students to prove their eligibility and that it will be easier to amass political support for a program that benefits more people.³²

The issue of universal versus targeted free college surfaced in recent presidential campaigns. Senator Bernie Sanders pushed for universal free public college while campaigning in the 2016 Democratic primaries. Hillary Clinton, the eventual Democratic nominee, compromised with Sanders on a plan that became part of the 2016 Democratic Party platform. The compromise between Sanders and

³² Goldrick-Rab and Miller-Adams, "Don't Dismiss the Value of Free-College Programs," 2018.

Clinton formed the basis for the free-college proposal adopted by former Vice President Joe Biden, the 2020 Democratic presidential nominee. The Biden plan calls for tuition-free community college for all eligible undergraduates, and tuition-free four-year public colleges and universities for eligible undergraduates whose families have incomes below \$125,000.

We estimate that Biden's proposal for tuition-free college would cost \$49.6 billion in its first year, with \$33.1 billion in federal spending and \$16.5 billion in state spending.³³ The Biden plan would cost \$8.6 billion less in the first year than a plan that would cover all students at two-year and four-year public colleges without regard to their family income. One way to curb costs while providing tuition-free college to all students regardless of income would be to limit coverage to community colleges rather than extending it to four-year public colleges. Covering tuition for all students at community colleges would cost \$14.3 billion. For plans that cover both two-year and four-year colleges, additional income restrictions would likely produce additional cost savings, but an income cap of \$125,000 would result in both cost savings and a large base of eligible students, since approximately 80 percent of students at public four-year colleges and universities are from families with incomes under \$125,000.³⁴

First-dollar and last-dollar programs involve tradeoffs and would have different effects on race and class equity.

First-dollar and last-dollar tuition programs involve tradeoffs. First-dollar programs are more expensive, but they also offer more help to low-income students because they allow students who qualify for other types of financial aid to use that assistance to pay for their living expenses.³⁵ Of course, states could reduce the cost of a first-dollar program by restricting eligibility to full-time students or students at two-year colleges. States with less money to spare for free-college programs generally have adopted last-dollar programs.

Last-dollar programs are less expensive because they force students to use their financial aid before the state pays the remaining tuition cost. As a result, these last-dollar programs may not be generous enough for low-income students who still need to cover their living costs during college. If the federal government becomes involved, experts argue that it would have the resources to implement the more expansive first-dollar program.³⁶

³³ In this report, we assume that the federal government would cover 67 percent of costs and state governments would cover 33 percent of costs associated with free college. These estimates are consistent with the College for All Act of 2017, the bill that outlined a framework for the Sanders-Clinton compromise plan of 2016 and that Biden promoted in March 2020.

³⁴ Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, National Postsecondary Student Aid Study, 2016. For independent students, family income refers to the student's own income.

³⁵ Poutre and Voight, "The State of Free College," 2018.

³⁶ Goldrick-Rab and Miller-Adams, "Don't Dismiss the Value of Free-College Programs," 2018; Harris, "America Wakes Up from Its Dream of Free College," 2018.

Overall, a last-dollar program would cost \$30.4 billion less than a first-dollar program in the first year. The cost savings would be considerable, but a last-dollar program would not be as successful at targeting lower-income students. The Biden free-college plan, with a \$125,000 income cap for students at public four-year institutions, would be more beneficial to lower-income students and more likely to improve equity than the universal free-college programs reviewed in this report. Only 13 percent of funds associated with last-dollar programs would go to students in the bottom quartile of income, compared to 25 percent under a first-dollar program and 29 percent under Biden’s plan (Table 2). Importantly, under the more generous first-dollar programs, these lower-income students would be able to apply their additional grant aid to attendance costs beyond tuition.

Table 2. A first-dollar program with or without an income cap would be more beneficial to lower-income students.

Distribution of first-year program costs by income quartile				
Income quartile	Students at public colleges and universities	First-dollar plan	Biden plan	Last-dollar plan
Bottom quartile	25%	25%	29%	13%
Lower-middle quartile	26%	26%	31%	19%
Upper-middle quartile	26%	25%	29%	31%
Top quartile	23%	25%	11%	37%
Total	100%	100%	100%	100%

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Postsecondary Student Aid Study (NPSAS), 2016.

Note: Numbers may not sum to 100 percent due to rounding. The eligible population is restricted to in-state students attending a public two-year or four-year institution. Income quartiles are defined by the entire college-going population. The Biden plan refers to a proposal that would make a first-dollar tuition-free program available to all community college students and students with family incomes under \$125,000 at four-year public universities.

The design of a free-college program influences the amount that various groups stand to benefit. An income cap shifts the program’s benefits toward less affluent students. In comparison to last-dollar programs, first-dollar programs direct a more equitable share of funding toward students of color. White students represent 53 percent of students at eligible institutions, but they would receive 66 percent of the funds under a last-dollar program. Under a first-dollar program, however, White students would receive only 58 percent of the funds. Biden’s plan, which has an income cap, would distribute funding slightly more proportionally by race than a universal first-dollar program, but underrepresented populations may still require additional targeted funds to receive the same benefits as White students (Table 3).

Table 3. A first-dollar program with an income cap would be more racially equitable than a last-dollar program.

Distribution of first-year costs by race and ethnicity				
Race/ethnicity	Students at public colleges and universities	First-dollar plan	Biden plan	Last-dollar plan
White	53%	58%	54%	66%
Black/African American	14%	13%	14%	10%
Hispanic/Latino	21%	17%	19%	13%
Asian	6%	8%	8%	7%
American Indian or Alaska Native or Native Hawaiian/ Other Pacific Islander	1%	1%	1%	<1%
More than one race	4%	4%	4%	3%
Total	100%	100%	100%	100%

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Postsecondary Student Aid Study (NPSAS), 2016.

Note: Numbers may not sum to 100 percent due to rounding. The eligible population is restricted to in-state students attending a public two-year or four-year institution. The Biden plan refers to a proposal that would make a first-dollar tuition-free program available to all community college students and students with family incomes under \$125,000 at four-year public universities.

It is not surprising that White students would receive a disproportionate share of free-college funding in view of current enrollment patterns by race and class. White students and high-income students are disproportionately enrolling at more selective institutions, which tend to have higher tuition prices.³⁷ While the distributions above are a useful benchmark, it is unlikely that they would remain constant over the long term because the incentives associated with free college will likely affect students’ college-going behavior.

These changes could result in a re-sorting of student groups across institutions as student behavior changes. For example, low-income students could become more willing to enroll at more expensive selective colleges. Furthermore, among students who are not attending college, the availability of free college is more likely to motivate low-income students and students of color to enroll.³⁸

In addition to free college, other factors related to public policy and college choice can influence

³⁷ Carnevale et al., *Our Separate & Unequal Public Colleges*, 2018.

³⁸ A majority of students who said they did not attend college for financial reasons are students of color (54%) or low-income students (60%). Georgetown University Center on Education and the Workforce analysis of data from the High School Longitudinal Study of 2009 (HLS:09).

student behavior. In combination, these factors can make it particularly difficult to predict changes in students' college choices by race and class. To ensure that free-college plans have equitable results, policymakers could consider race-conscious measures, such as increasing funding for students attending historically Black colleges and universities (HBCUs), minority-serving institutions (MSIs), and tribal colleges and universities (TCUs).

Debt-free college is the most generous type of free college but also the most expensive.

While first-dollar and last-dollar plans would improve college affordability and potentially reduce race and class equity gaps, neither approach would be as generous as debt-free college. But there is good reason that debt-free college receives less attention from policymakers than first-dollar and last-dollar options—its costs are high and difficult to estimate accurately.

In estimating the cost of making college debt-free, we started with the calculation of current need for all eligible students.³⁹ The total financial need for eligible students in the public system exceeds \$100 billion. After subtracting current grant spending, we estimate that providing debt-free college to eligible students at public colleges and universities would cost \$75 billion during the first year.

Estimating the cost of debt-free college is a challenge. The cost of attendance and expected family contribution calculations required by federal statute can be an inaccurate measure of actual costs and student resources.⁴⁰ The amount a student ultimately borrows can be hard to predict because some students choose sources other than loans to finance their college education. If federal methodologies fail to capture the entirety of student need,⁴¹ the cost of eliminating all student loan debt cannot be accurately estimated. Future debt-free program proposals will have to wrestle with whether the current federal methodologies for calculating financial need are the best way to determine the program's cost or whether entirely new definitions are needed to create a program that will truly guarantee each student a loan-free education. Regardless of the analysis that a debt-free program uses to determine need, however, covering the full cost of attendance would be a formidable investment.

³⁹ We used current federal methodology for determining financial need. See the appendix for details.

⁴⁰ Kelchen et al., "The Costs of College Attendance," 2017; The Institute for College Access and Success, *Designing Financial Aid for California's Future*, 2018.

⁴¹ Taylor, *Creating a Debt Free College Program*, 2017.

Projecting Free-College Costs

Presumably students and institutions would change their behavior if a free-college program were adopted. Students might be more likely to enroll, and institutions might be more likely to raise their prices to maximize the amount of federal cost-sharing funds they would receive. Previous research on students' reactions to changes in tuition and financial aid and adoption of free-college programs helped us to derive the 10-year costs of tuition-free college that take into account students' likely behavioral changes.⁴²

Table 4. Undergraduate enrollment would likely increase at public colleges and decrease at private institutions under a free-college program.

Type of institution	Low estimate of enrollment change	Medium estimate of enrollment change	High estimate of enrollment change
Selective public	0%	2%	5%
Middle-tier public	2%	5%	8%
Open-access public	9%	14%	19%
Total public	6%	10%	14%
Selective private	-3%	-5%	-8%
Middle-tier private	-5%	-8%	-10%
Open-access private	-10%	-15%	-20%
Total private	-7%	-10%	-14%
Overall undergraduate enrollment	4%	6%	8%

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016–17, and the NCES-Barron's Admissions Competitiveness Index Data Files: 1972, 1982, 1992, 2004, 2008, 2014.

Note: Low, medium, and high estimates refer to varying intensities of response to free college during the 10 years following implementation. See the appendix for an explanation of the scenarios that we considered in reaching these estimates. Selectivity tiers are based on Barron's categories, with selective public referring to the top three categories of selectivity, middle-tier referring to the fourth and fifth categories, and open-access referring to those colleges that appear in Barron's noncompetitive category or are not listed as selective.

⁴² Dynarski, "Does Aid Matter?," 2003; Heller, "Student Price Response in Higher Education," 1997; Hemelt and Marcotte, "The Impact of Tuition Increases on Enrollment at Public Colleges and Universities," 2011. Methodological details are provided in the appendix.

The effect of free college on enrollments would likely vary among colleges, depending on their sector and selectivity level (Table 4). In a free-college program, we project that student enrollment in higher education would increase 4–8 percent overall, with a marked shift of students from private colleges to public institutions. Enrollment at private colleges would decrease 7–14 percent, while enrollment at public institutions would increase 6–14 percent. The largest enrollment declines (as high as 20%) would occur at the least selective private colleges. The most selective public colleges may face increased demand, but because many do not have excess capacity, we project that the greatest increases in enrollment would occur at the least selective (open-access) public colleges.⁴³

These enrollment changes have implications for long-term costs and are factored into our calculation of the total cost over a longer period of time. Over the 10 years following the base year, we estimate that a first-dollar tuition-free program would cost \$799.7 billion and that a similar last-dollar program would cost \$414.9 billion. The Biden plan, which would provide a first-dollar program to all community college students and to students with family incomes below \$125,000 at four-year public colleges and universities, would cost \$683.1 billion.

These estimates can change depending on how many more students choose to enroll in college, how much colleges can increase capacity, and how fast college costs increase over time. For example, estimates for a first-dollar program range from \$741.0 billion to \$820.8 billion, and estimates for a last-dollar program range from \$385.2 billion to \$425.8 billion, reflecting low to high projections of the increased-enrollment response (Table 5).⁴⁴

⁴³ In a previous analysis of the enrollment effects of free-college proposals, the Georgetown University Center on Education and the Workforce predicted greater increases at open-access institutions than at selective institutions because of their open-access nature, their lower overall cost of attendance, and the cascading effect of acceptances by selectivity. See Carnevale et al., *The Enrollment Effects of Clinton's Free College Proposal*, 2016.

⁴⁴ We report medium estimates for long-term costs. See the appendix for more details on how we derived various estimates.

Table 5. In the 10 years after implementation of a free-college plan, the cost will depend on the magnitude of changes in enrollment and institutional capacity.

	Year											Total
	1	2	3	4	5	6	7	8	9	10	11	
	First-dollar (in billions)											
Baseline	\$58.2	\$59.6	\$60.9	\$62.2	\$63.5	\$64.8	\$66.2	\$67.7	\$69.3	\$71.0	\$72.5	\$716.0
Low	\$58.2	\$60.1	\$62.5	\$64.8	\$66.2	\$67.6	\$69.0	\$70.6	\$72.3	\$74.0	\$75.6	\$741.0
Medium	\$58.2	\$61.1	\$64.9	\$68.8	\$70.9	\$73.1	\$75.4	\$77.9	\$80.5	\$83.2	\$85.8	\$799.7
High	\$58.2	\$61.5	\$66.2	\$70.9	\$73.1	\$75.4	\$77.8	\$80.3	\$83.0	\$85.8	\$88.5	\$820.8
	Year											Total
	1	2	3	4	5	6	7	8	9	10	11	
	Last-dollar (in billions)											
Baseline	\$27.8	\$28.4	\$29.1	\$29.7	\$30.3	\$30.9	\$31.6	\$32.3	\$33.1	\$33.9	\$34.6	\$341.5
Low	\$27.8	\$29.3	\$31.8	\$34.3	\$35.0	\$35.7	\$36.5	\$37.4	\$38.2	\$39.2	\$40.0	\$385.2
Medium	\$27.8	\$29.8	\$33.0	\$36.2	\$37.3	\$38.5	\$39.7	\$41.0	\$42.4	\$43.9	\$45.2	\$414.9
High	\$27.8	\$30.0	\$33.7	\$37.3	\$38.5	\$39.7	\$40.9	\$42.3	\$43.7	\$45.2	\$46.6	\$425.8

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016–17.

Note: Low, medium, and high refer to assumptions about the intensity of increased enrollment responses to free college, whereas baseline refers to cost increases due to current projected enrollment increases without any potential behavioral effects of free-college programs. See the appendix for additional details on methodology.

Numbers may not sum to totals due to rounding.

Designing a Free-College Program

Many design elements will affect the long-term costs of a national free-college program. These include federal-state partnerships, in-state student enrollments, student support services, and workforce strategy.

Federal-state partnerships rely on cost-sharing, which can have unintended consequences.

Federal-state free-college partnership proposals typically ask the states to cover a portion of the cost of tuition, while the federal government covers the remainder. Each approach to federal-state cost-sharing, however, can lead to unintended consequences. For example, federal-state partnerships that appropriate money based on tuition prices could wind up giving more money to states where public colleges and universities charge high tuition because those states choose to limit their investment in higher education (Table 6).⁴⁵ Furthermore, states with lower incomes may be unable to take advantage of dollar-to-dollar matches, and states not politically inclined to favor free college may refuse to accept the program, as some states did when Medicaid was expanded under the Affordable Care Act.⁴⁶

To avoid these pitfalls, a federal-state partnership could be designed to require the federal government to provide funding proportionate to each state's current level of higher education allocations. Under this approach, larger federal appropriations would go to states with more generous higher education allocations, presumably encouraging state governments to invest more in their higher education systems. Another potential approach would be for the federal government to provide each state a set amount of funding for each enrolled student, regardless of current tuition price.⁴⁷

The goal of the program should influence its design. If the priority of a federal-state partnership is to guarantee free tuition to encourage more students to apply to college, then states and institutions must receive enough money to fully waive tuition for students. A federal payment that is insufficient to do that may be helpful in increasing overall funding for higher education, but it could negate the simplicity of the message that college is free.⁴⁸

⁴⁵ Carey, "The Free College Fantasy," 2019.

⁴⁶ Mishory, *Path to Debt-Free College*, 2018.

⁴⁷ Carey, "The Free College Fantasy," 2019.

⁴⁸ Reed, "No, Thanks," 2019.

Table 6. The cost of implementing a free-college plan would vary by state.

State	First-dollar first-year cost (in millions)	Last-dollar first-year cost (in millions)	State	First-dollar first-year cost (in millions)	Last-dollar first-year cost (in millions)
Alabama	\$933	\$406	Montana	\$138	\$92
Alaska	\$91	\$45	Nebraska	\$316	\$117
Arizona	\$1,070	\$534	Nevada	\$313	\$164
Arkansas	\$520	\$152	New Hampshire	\$226	\$153
California	\$6,008	\$1,448	New Jersey	\$2,361	\$1,517
Colorado	\$1,049	\$561	New Mexico	\$273	\$65
Connecticut	\$599	\$325	New York	\$3,180	\$1,183
Delaware	\$141	\$92	North Carolina	\$1,507	\$526
District of Columbia	\$14	\$4	North Dakota	\$110	\$72
Florida	\$2,217	\$701	Ohio	\$2,317	\$1,260
Georgia	\$1,612	\$566	Oklahoma	\$592	\$194
Hawaii	\$170	\$70	Oregon	\$689	\$393
Idaho	\$221	\$94	Pennsylvania	\$2,984	\$2,077
Illinois	\$3,314	\$2,214	Rhode Island	\$154	\$75
Indiana	\$1,293	\$637	South Carolina	\$971	\$426
Iowa	\$541	\$314	South Dakota	\$150	\$91
Kansas	\$587	\$328	Tennessee	\$1,005	\$302
Kentucky	\$811	\$289	Texas	\$5,544	\$2,501
Louisiana	\$962	\$301	Utah	\$589	\$317
Maine	\$169	\$71	Vermont	\$115	\$73
Maryland	\$1,204	\$743	Virginia	\$2,062	\$1,352
Massachusetts	\$1,207	\$706	Washington	\$1,382	\$711
Michigan	\$2,696	\$1,563	West Virginia	\$265	\$83
Minnesota	\$1,122	\$669	Wisconsin	\$1,079	\$703
Mississippi	\$440	\$112	Wyoming	\$53	\$13
Missouri	\$875	\$370	Total	\$58,240	\$27,778

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016–17.

Note: Numbers may not sum to totals due to rounding.

Free-college plans generally apply to in-state students at public institutions.

Free-college plans apply almost exclusively to public institutions. States justify making tuition free for in-state students because they come from within the state's tax base and likely will join the state's labor force after receiving a degree.

One implication of a national free-college program may be that more students will choose free in-state colleges rather than out-of-state colleges. Tuition prices for in-state students are often heavily subsidized, and the sticker price for a student at an in-state public college or university is generally lower than at an out-of-state public or private nonprofit or for-profit college.⁴⁹ Nevertheless, students may respond more readily to the simple message that college is free than to a more nuanced message that a college's tuition price is heavily subsidized.⁵⁰ Even when in-state public colleges are free, however, an appreciable number of students will continue to choose private schools or out-of-state public schools because of fit, net price, selectivity, prestige, and other factors.

Out-of-state tuition revenue matters more to some institutions than to others. We estimate that if all students switched from out-of-state to in-state institutions, tuition revenue at public colleges and universities would decline by 19 percent because of the loss of out-of-state students paying higher out-of-state tuition prices.⁵¹ A drop in the number of out-of-state students in the public system may not have a pronounced effect on the total cost estimates, but the effect could be significant for the public institutions that rely heavily on out-of-state students to boost revenue. Therefore, the effect on specific individual institutions' budgets is an area for further consideration.⁵²

Colleges should focus on counseling and other support services to ensure that students in free-college programs graduate and launch successful careers.

The need for educational support services will increase as enrollment in higher education grows because most students could benefit from mentoring, mental health counseling, career counseling, or tutoring. Emerging research indicates favorable results for programs such as CUNY ASAP—the City University of New York's Accelerated Study in Associate Programs—which helps students to stay in college and succeed.⁵³ Free-college proposals should include cost estimates and funding for support services because institutions will have to find ways to cover the increased demand for such services.⁵⁴

⁴⁹ The net price, which is the price after institutional and other forms of financial aid are taken into account, can differ for students based on factors other than residency. Some students, including those being recruited by a college because of their academic or athletic achievements, receive heavy discounts on tuition regardless of their residency.

⁵⁰ Harris et al., *The Promise of Free College*, 2018.

⁵¹ Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2016–17.

⁵² We do not consider the role of international students in this analysis, but the recruitment and revenue effects of this population merit further consideration.

⁵³ Scrivener et al., "Doubling Graduation Rates," 2015.

⁵⁴ Smith, "Free Tuition Will Bleed Colleges Dry," 2019.

One critique of free college is that even though it helps students pay for college, it does not ensure that students who start college actually finish.⁵⁵ Lower prices may not increase degree attainment and successful career transitions if students entering college find inadequate student services after they enroll. Students who must spend time in remedial noncredit courses often fall behind their peers in accruing credits and then get discouraged and give up. Therefore, trying to save money by stinting on support services could backfire for colleges. The cost of free-college programs could rise, and the goal of increased degree attainment could be thwarted, if enrollment increases are not accompanied by a meaningful expansion in student support services and reform to developmental education.⁵⁶

Financial aid alone is insufficient to enable many students to complete college and move on to further education or successful career pathways.⁵⁷ Free college can support college completion if it is combined with student support services, such as mentoring or coaching.⁵⁸ Consequently, methods for harnessing free-college programs to improve college readiness and college completion need further exploration.

Free college can be part of a workforce strategy.

Free-college programs obviously will benefit students, but they can also benefit state and local economies by becoming part of the strategy for building a well-trained workforce. Taking into account the potential increases in college attainment, a national free-college program could yield substantial societal benefits during the 10 years after initial implementation that include an additional \$371.4 billion in tax revenue and private after-tax earnings gains of \$866.7 billion.⁵⁹ The long-term economic impact of existing state-level free-college programs is not yet known because most are relatively new. However, studies of long-standing local promise programs and specific policy features of state programs give some insight into how free college relates to workforce development.

Kalamazoo Promise, a philanthropically funded tuition-free scholarship started in 2005 for students who graduate from Kalamazoo high schools and attend local Michigan colleges, is one of the oldest free-college programs. The program has increased the likelihood of students enrolling in any college within six months of high school graduation by 14 percent and the likelihood of students enrolling in a four-year college by 23 percent. As of six years after high school graduation, the Kalamazoo Promise increased the share of students earning some sort of postsecondary credential by 10 percentage points.⁶⁰

⁵⁵ Hiler and Erickson, "What Free Won't Fix," 2016.

⁵⁶ Ngo and Kwon, "Using Multiple Measures to Make Math Placement Decisions," 2015.

⁵⁷ Rosenberg, "Free Public College Is a Terrible Idea," 2019.

⁵⁸ Willard et al., "Designing for Success," 2019.

⁵⁹ Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics, Digest of Education Statistics, tables 306.10 and 306.20, 2019; the Integrated Postsecondary Education Data System, 2016–17; and the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2019. For more information on calculating earnings and tax benefits from increased educational attainment, see Carnevale et al., *The Value of Economic and Racial Justice in Postsecondary Education*, forthcoming.

⁶⁰ Bartik et al., "The Effects of the Kalamazoo Promise Scholarship on College Enrollment, Persistence, and Completion," 2017.

Another early program was Knox Achieves, a privately funded last-dollar program launched in 2008 in the Knoxville, Tennessee, area. Intended to enhance the local workforce and encourage local students to attend college, it paid tuition for Knox County high school graduates at local community colleges.⁶¹ Knox Achieves seems to have had a substantial effect on college enrollment, with eligible students 24.2 percentage points more likely to enroll in college within nine months of high school graduation and 29.6 percentage points more likely to enroll in community college than students who were not covered by the program.⁶² In addition, Knox Achieves appears to have raised earnings of participants during the first seven years after high school and to be associated with a higher likelihood of employment in industries that pay good wages.⁶³

These emerging studies, along with our own model of a national free-college program, show that the benefits of free-college programs, as measured by expected earnings from increased college attainment, can outweigh their costs.

Tennessee Promise, which was modeled on Knox Achieves, and the Excelsior Scholarship Program in New York show the connection between workforce development and free college. Supporters got the Tennessee Promise program passed by emphasizing to policymakers and business stakeholders the role of community colleges in meeting workforce demand.⁶⁴ Tennessee started the tuition-free community college program for recent high school graduates in 2015. It was so popular that the state extended it to adult students in 2018. New York began its Excelsior Scholarship in 2017 as a free-college program in both the two-year and four-year college sectors for in-state students from families with annual incomes below \$125,000. In-state students must repay the grants they received unless they work in the state of New York for a specified number of years after graduating.⁶⁵ The design and impact of these programs illustrate that free college can be instrumental in helping students attain the postsecondary credentials they need to get jobs that pay well. The symbiotic relationship among education, workforce development, and economic growth adds support to the case for free college.

⁶¹ City of Knoxville, "Knox Achieves to Assist 496 Knox County Students," 2009.

⁶² Carruthers and Fox, "Aid for All," 2016.

⁶³ Carruthers et al., *Promise Kept?*, 2020.

⁶⁴ Wermund, "The Red State That Loves Free College," 2019.

⁶⁵ DiMartino, "The 'Free College' Illusion," 2018.

Conclusion

The national debate on free college gained prominence in 2015 with proposals from then-President Barack Obama and, later, presidential candidates Bernie Sanders and Hillary Clinton. The debate reemerged during the 2020 election after former Vice President Joe Biden adopted similar proposals from the 2016 election cycle. Rapidly changing political dynamics make it impossible to predict whether and when a federal free-college program will advance. Nevertheless, the experimentation in state programs and the Democratic legislative proposals in the pending reauthorization of the Higher Education Act suggest that the idea will remain in the public conversation in some format.

When debating whether to create a free-college program, policymakers must decide which expenses would be covered, at which institutions, and for whose benefit. They must also consider new expenses that could accompany a surge in college enrollments, such as increased counseling and other support services. A program could gain more political traction if people consider it fair to everyone. For example, middle-class families who struggle to pay for college even though they are too affluent to qualify for need-based financial aid may be more willing to support a free-college program with no income cap.⁶⁶ Our cost estimates for the most common free-college models will provide a starting point for these important analyses of program design and implementation.

The design of any program should include methods for substantiating the value of investing in the college system. As student debt and college prices have increased, so has public pressure to show that colleges are producing results commensurate with the cost for students and taxpayers.⁶⁷ Accountability and transparency are ideas whose time has come as more policymakers are examining program-level outcomes and earnings to assess higher education's success.⁶⁸ The accountability regime for free college could work with existing or emerging tools, such as the Department of Education's College Scorecard,⁶⁹ or it could place entirely new reporting requirements on the system. Ensuring accountability and transparency is particularly important because of the large expense involved.

⁶⁶ Goldrick-Rab, *Paying the Price*, 2016.

⁶⁷ Kelchen, *Higher Education Accountability*, 2018.

⁶⁸ Carnevale, "The Revolution Is upon Us," 2019.

⁶⁹ The College Scorecard is an online consumer tool that contains information on costs and outcomes of colleges. It includes data on prices, graduation rates, graduates' employment rates, average amount of student loans, and student loan default rates.

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Appendix:

Data Sources and Methodology

First-Dollar, Last-Dollar, and Debt-Free Methodology

We used the Integrated Postsecondary Education Data System (IPEDS) to estimate the costs of first-dollar and last-dollar tuition-free programs, specifically the 2016–17 survey on institutional costs, enrollments, and financial aid. We used the 2015–16 National Postsecondary Student Aid Study (NPSAS), a nationally representative survey of college students and their financial aid packages, as the source for debt-free estimates.

First-Dollar and Last-Dollar Base-Year Estimates

To estimate costs of first-dollar and last-dollar free-college programs, we consider in-state students attending a public two-year or four-year institution. We used IPEDS information on in-state fall enrollment ratios to estimate the number of 12-month undergraduate full-time-equivalent (FTE) in-state or out-of-state students. This allowed us to calculate the total tuition cost for in-state students, who would be eligible for the free-college program. We multiplied these derived numbers by the institutions' in-state and out-of-state tuition and fees rates, respectively.

For the last-dollar estimates, we added a further adjustment by subtracting the total amount of grant aid that out-of-state students would receive. Here we assumed their share of aid was equal to the above in-state, out-of-state ratio.

These assumptions concerning the share of out-of-state students are necessary to calculate the cost attributable to in-state students, but they could render our estimates too high or too low. Slight differences exist in the number of course credits taken by in-state and out-of-state students. According to NPSAS, the biggest difference was at public four-year colleges, where 50 percent of in-state students were full-time and 53 percent of out-of-state students were full-time. Most of that difference came from students who attended full-time during some semesters and part-time during other semesters. There was a similar share of students who were exclusively part-time.

Debt-Free Estimates

NPSAS provides the total student budget (similar to cost of attendance) for each undergraduate sampled as well as total grants received and expected family contribution (EFC). We started with the cost of attendance (COA) and then subtracted the EFC and expected federal grants to reach the total demonstrated need not currently covered by federal spending. We limited the sample to undergraduate students enrolled in-state at a public two-year or four-year college or university.

A straightforward calculation of debt-free college might be the total cost of attendance minus the amount the student is reasonably expected to contribute to living and educational expenses. However, there are challenges in determining the true cost of a debt-free program. These include determining the appropriate COA, estimating the appropriate EFC, and predicting student borrowing behavior.

Federal methodology uses COA and EFC to determine a student's financial need. In general, a student's institutional COA minus the EFC indicates the student's financial need. However, these measures carry limitations that do not always capture the amount that students will ultimately borrow.

The Higher Education Act of 1965 defines the COA and includes expenses such as tuition and fees, room and board, books, and transportation. However, institutions have discretion in calculating these costs, and institutional methods vary. These differences can produce estimates of food, housing, and transportation costs that differ substantially from the expenses that a student actually faces. For example, researchers found that almost half of postsecondary institutions' estimates of living costs varied by 20 percent (either higher or lower) from estimates of living expenses in the surrounding neighborhoods.¹ If an institution's estimated COA is lower than a student's actual living expenses, the institution may award the student a financial aid package insufficient to cover all the student's costs, forcing the student to consider loans.

Another factor in determining students' need is the expected family contribution. The EFC is calculated based on a student's answers on the Free Application for Federal Student Aid (FAFSA), using federal methodology that weighs student and family income. Financial aid staff at institutions can use their professional judgment to adjust students' financial aid packages if there are extenuating circumstances, such as a parent's job loss, that should be factored into the aid calculation.

Despite the formula's complexity, concerns exist regarding the accuracy of EFC calculations.² EFC is a measure of a family's financial strength rather than the amount that the student can afford or the amount that a student will actually pay toward college. A student's EFC does not consider all the factors that can affect a student's ability to pay and therefore may not fully capture the student's financial need.

It is challenging to estimate the cost of debt-free education because several factors influence whether and how much students will borrow for college. The federal government limits the amount that undergraduate students can borrow in Direct Loans, and the current limit for undergraduates is \$31,000 in subsidized or unsubsidized direct loans. If students reach their borrowing limit or want to take out loans above the COA, they must turn to unsubsidized Parent PLUS loans or private student loans. These may be problematic—Parent PLUS loans sometimes require a credit check, and private loans offered through banks or other entities lack some of the consumer protections that federal

¹ Kelchen et al., "The Costs of College Attendance," 2017.

² The Institute for College Access and Success, *Designing Financial Aid for California's Future*, 2018.

student loans have, such as the ability to use federal income-driven repayment (IDR) programs.³ Additionally, research has suggested that some groups of loan-averse students may avoid taking out loans even when they need them.⁴ Students may seek other means to plug gaps in college financing or reduce their need for loans, such as working during college, even though it is becoming increasingly difficult to earn enough during college to forgo using loans.⁵ Other dependent students may have to turn to loans to finance their education because their families are unwilling or unable to contribute the amount that the federal government has determined they can.

Even with the best possible COA and EFC calculations, it can be complicated to predict the amount that a particular student will actually borrow for college because of complex financing rules, family financial conditions, and student behavior. Thus, policymakers crafting debt-free college programs may face great uncertainty in predicting the costs of programs that promise to cover living expenses because current federal methodologies do not adequately capture the true amount of a student's need. Debt-free college may have admirable goals, but in practice, the elimination of all student debt is a challenge. Indeed, the opportunity to attend college without taking out loans may not be realistic for all students.⁶ Future policymakers will have to wrestle with how to fulfill a debt-free promise in view of the current limitations on federal student aid relating to COA, EFC, and financial aid packages.

First-Dollar and Last-Dollar Long-Term Costs

We calculated potential changes in costs over an 11-year period based on various scenarios. We considered how student behavior may shift in response to free college as well as how the college market is expected to change regardless of policy changes.

When calculating program costs, we considered students' and institutions' potential reactions to free-college policies—how likely it would be that people not currently attending college would enroll; how likely students would be to switch from private institutions to public ones; how much institutions would be able to increase their capacity; and how much prices would change. We used the number of spots available at a college (which relates to its selectivity level) to make assumptions about which colleges would absorb the increased number of FTE students.

³ Income-driven repayment programs allow borrowers to repay their loans in affordable payments based on their income after they graduate.

⁴ Cunningham and Santiago, *Student Aversion to Borrowing*, 2008.

⁵ Carnevale et al., *Learning While Earning*, 2015.

⁶ Taylor, *Creating a Debt Free College Program*, 2017.

We then projected how free-college costs would change over time, compared to a baseline model. The baseline estimates did not assume behavioral shifts due to free college but assumed only the current forecasted enrollment changes projected by the National Center for Education Statistics and the average annual increase in tuition prices, which we estimated would be around 2 percent.⁷

Beyond the baseline calculations, we modeled three levels of responsiveness in the enrollment and capacity model—low, medium, and high. In determining these levels, we had two main considerations—the nature of enrollment changes in the public sector, including increases in college-going students and shifts from other institutions, and the amount of price inflation over time.⁸ This is a summary of the models:

- Low scenario: Colleges would continue to increase tuition prices at the average rate, and most colleges would not expand their capacity. The shift of students from the private sector into the public sector would be at the lowest range of potential responses, so most of the increase in public enrollments would be from unused capacity. In this scenario, we estimate that enrollment would decrease 3 percent at selective private colleges, 5 percent at middle-tier private colleges, and 10 percent at open-access private colleges, and the college-going rate of adults would increase 3 percentage points.
- Medium scenario: Colleges would increase the stated tuition price as much as they are allowed, and more colleges would expand their capacity. Proposed legislation, such as America’s College Promise Act, typically includes a cap on tuition price increases based on inflation or a maximum of 3 percent. We assumed the maximum of 3 percent. The enrollment shift from the private sector would be at the medium level. In the medium scenario, we estimate that enrollment would decrease 5 percent at selective private colleges, 8 percent at middle-tier private colleges, and 15 percent at open-access private colleges. The college-going rate of adults would increase 5 percentage points.
- High scenario: Colleges would still increase tuition as much as they are allowed (the maximum of 3 percent), and more colleges would expand their capacity. The enrollment shift from the private sector would be at the high end of the range of possible responses. In this scenario, we estimate that among private colleges, enrollment would decrease 8 percent at selective private colleges, 10 percent at middle-tier private colleges, and 20 percent at open-access private colleges. The college-going rate of adults would increase 7 percentage points.

⁷ Notably, literature on this topic finds weak evidence for the hypothesis that increased availability of federal aid raises sticker prices among colleges and universities in the public sector; instead, most evidence on price increases comes from the private and for-profit sectors. (See Stoll et al., *Overview of the Relationship between Federal Student Aid and Increases in College Prices*, 2014.) To account for inflation of college prices, we use either historical trends of year-to-year price changes, or for the models we describe, the maximum that would be allowed under Congressional free-college bills.

⁸ While college may be free to students, the government would still need to consider the inflation of prices over time to ensure that the amount provided to states will cover institutions’ needed revenue.

It is challenging to predict the exact amount of enrollment increase under a free-college plan that does not currently exist. A Hamilton Project report on a federal-state partnership proposal assumed a 10 percent enrollment increase based on previous college promise program research.⁹ The low, medium, and high rates of responsiveness in this study were derived from the literature on free-college programs such as the Tennessee Promise and work on tuition elasticities and price sensitivity, which provide the best approximations for responsiveness to a federal free-college program.¹⁰

We did not consider all factors in our model. Our analysis mainly focuses on what we believe to be the largest driver of long-term costs—overall responsiveness to free-college policies, capacity differences in various types of colleges, and expected price increases over time.

Tax Revenue and Private Earnings Benefits

We used the predicted increase in enrollment from our medium cost forecast to calculate the tax revenue and private earnings benefits. We used a capacity approach to allocate the new enrollments to the existing colleges (i.e., the most selective public colleges have fewer available seats and will be less likely to expand them in the coming years.)

In the tax revenue estimate, we used current differences in time-to-degree and graduation rates. Arguably, these rates could decline because the new students may be less prepared for college level work than current students. However, there are about 500,000 college-ready high school students every year who do not attain a college credential,¹¹ and we expect that these students would make up the majority of the increased enrollments. Also, some studies show that increased financial aid raises the likelihood that low-income students will graduate,¹² but we did not assume any such increase.

Based on average times to degree, we assumed a three-year period for getting an associate's degree for each two-year college cohort and a five-year period for getting a bachelor's degree for each four-year college or university cohort. As a result, we projected no tax revenue or private earnings benefits during the program's first two years.

Beginning with year three for associate's degree programs and year five for bachelor's degrees, we applied the current graduation rates for associate's degree programs over three years (32.6%) and bachelor's degree programs over five years (58.7%).¹³

⁹ Deming, *Increasing College Completion with a Federal Higher Education Matching Grant*, 2017.

¹⁰ Carruthers and Fox, "Aid for All," 2016; Dynarski, "Does Aid Matter?," 2003; Heller, "Student Price Response in Higher Education," 1997; Hemelt and Marcotte, "The Impact of Tuition Increases on Enrollment at Public Colleges and Universities," 2011.

¹¹ Georgetown University Center on Education and the Workforce, *The Forgotten 500,000 College-ready Students*, 2018.

¹² See Dynarski, "Does Aid Matter?," 2003; Carruthers, *Promise Kept?*, 2020; Deming, David, *Increasing College Completion with a Federal Higher Education Matching Grant*, 2017.

¹³ National Center on Education Statistics (NCES) in the Digest for Education Statistics tables, table 326.10 and table 326.20.

For each year after year three, we added a new cohort of graduates with associate's degrees, and for each year after year five, we added a new cohort of bachelor's degree graduates to the workforce in cumulative fashion. For simplicity, we did not consider graduate program attendance or additional benefits of graduate degree attainment.

Next, to estimate the additional pre-tax earnings we used the current wage distribution by education. We based the additional pre-tax earnings on the difference in the annual earnings between those with an associate's degree and those with a bachelor's degree, relative to those with a high school diploma.¹⁴ For tax revenue calculations, we applied a federal income tax rate of 20 percent, based on historical averages. We applied an average state and local income tax rate of 10 percent in alignment with the tax wedge, or the average difference between salary and take-home pay.¹⁵ For simplicity, we did not consider any federal, state, or local taxes or fees other than income tax. Aggregated across additional graduates, this provided the additional tax revenue benefits depicted in figure 1. The remaining post-tax income represents the additional private earnings benefits of a free college program.

¹⁴ The median earnings by education are based on Georgetown University Center on Education and the Workforce analysis of the data from Current Population Survey, March Supplement, 2019.

¹⁵ See Bellafore, "The U.S. Tax Burden on Labor, 2019," 2019.

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McCourt School of Public Policy

The Georgetown University
Center on Education and the Workforce
3300 Whitehaven St. NW, Suite 3200
Washington, DC 20007
cew.georgetown.edu



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