LEARNING AND EARNING BY DEGREES

Gains in College Degree Attainment Have Enriched the Nation and Every State, but Racial and Gender Inequality Persists

Anthony P. Carnevale
Jeff Strohl
Kathryn Peltier Campbell
Artem Gulish
Ban Cheah
Emma Nyhof
Lillian Fix

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GEORGETOWN UNIVERSITY
McCourt School of Public Policy
Center on Education and the Workforce

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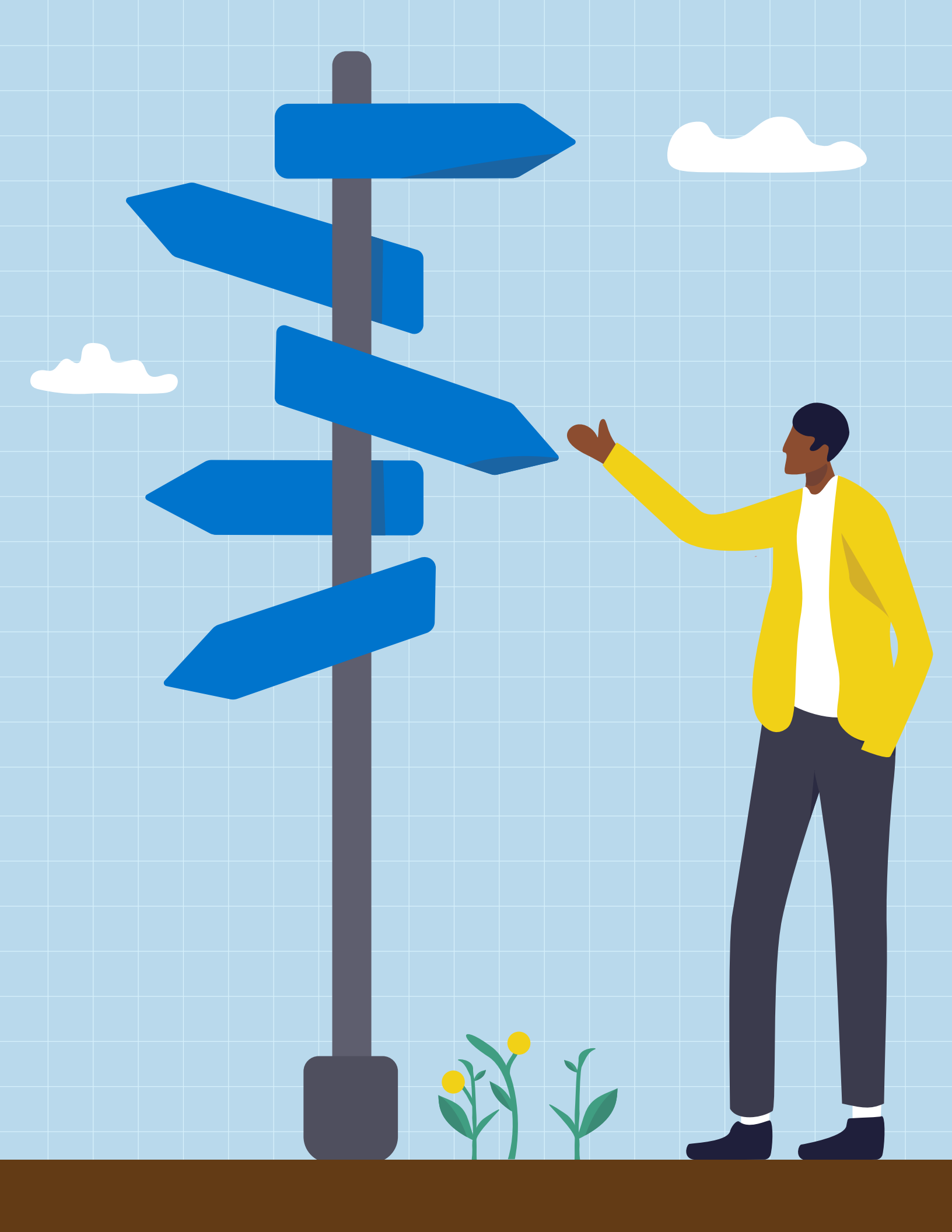

Introduction

The American public has grown increasingly skeptical about the benefits of a college degree.[1] Concerns about rising college costs and uncertain economic returns have combined with a wave of populist backlash to reduce public trust in higher education, which plummeted to new lows in 2023.[2] President Biden, who ran his 2020 campaign on a platform that included student loan forgiveness and free community college, has focused some of his recent public messaging on high-paying jobs for workers without college degrees[3]—despite the fact that such jobs are rare.[4] Multiple state governments have removed degree requirements in hiring,[5] a change intended to lower barriers to opportunity that nonetheless reinforces public doubts about the value of the degree.[6]

Debates around the value of college arise from valid concerns. Critics are right that, in the United States, college has often failed to live up to its promise of delivering equal economic opportunity to all. Greater transparency about college outcomes is needed, especially given how much a college education costs; people deserve good information when making decisions about enrollment. And yet, the critics often gloss over some well-established truths. The data tell us time and again that a college degree is the most reliable pathway to the middle class: 74 percent of workers with college degrees have good jobs, compared with 42 percent of workers with no more than a high school diploma.[7] These statistics indicate that Americans need **both** more access to affordable college education **and** more and better pathways to economic opportunity for workers without college degrees. But they also demonstrate that college degrees remain valuable both to individuals and to society.

As this report shows, recent increases in the overall level of degree attainment have yielded substantial benefits for the United States.[8] In the period from 2010 to 2020,[9] the overall

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1 Blake, "American Confidence in Higher Ed Hits Historic Low," 2023; Belkin, "Americans Are Losing Faith in College Education, WSJ-NORC Poll Finds," 2023.

2 Blake, "American Confidence in Higher Ed Hits Historic Low," 2023.

3 Kanno-Youngs, "No Degree? No Problem. Biden Tries to Bridge the 'Diploma Divide,'" 2023.

4 For example, only 1 percent of the workforce is composed of workers without a college degree who earn $130,000 or more. Carnevale, "Beware the Advice to Skip College," 2023.

5 Murphy and Cox, "Reevaluating Degree Requirements for Government Jobs," 2023.

6 In fact, some have characterized these changes in degree requirements as "populist virtue signaling." Wildavsky, "Let's Stop Pretending College Degrees Don't Matter," 2023.

7 Georgetown University Center on Education and the Workforce analysis of the US Census Bureau, Current Population Survey, 2020–22 (pooled). We define "good jobs" as those paying a minimum of approximately $43,000 in 2022 dollars for workers ages 25–44, a minimum of approximately $55,000 for workers ages 45–64, and a median of $82,000 nationwide. College degrees include associate's degrees, bachelor's degrees, and graduate degrees.

8 In this report, we estimate overall economic benefits based on individual lifetime earnings gains net of costs (net tuition and fees and forgone earnings) aggregated across additional individuals with college degrees. We do not factor in additional broad societal benefits such as productivity spillover effects, multiplier impacts on GDP, and higher tax revenue; nor do we consider corresponding public expenditures on college education at the federal, state, and local levels.

9 The following analyses are based on pooled samples from the US Census Bureau, American Community Survey (ACS), 2009–11 and 2019–21. We refer to these periods as 2010 and 2020 throughout this report.

proportion of the population with a college degree rose by 6.7 percentage points, from 38.5 percent to 45.2 percent.[10] These rising levels of degree attainment were associated with $14.2 trillion in net lifetime earnings gains,[11] with benefits accruing to all racial/ethnic groups. But even though all states and all demographic groups benefited from these gains in degree attainment, pervasive inequality persists in the US economy and society. Indeed, racial/ethnic gaps in attainment and in associated earnings have barely budged, and in some cases have even widened.

The fact that gains in college attainment have brought significant benefits for all groups is something to celebrate. At the same time, persistent inequality raises serious questions about the capacity of education — by itself — to create an economically just world. The economic gains of educational attainment for women and members of marginalized racial/ethnic groups continue to be muted by wage gaps, including some caused or exacerbated by labor-market discrimination. Simply stated, as long as wage inequality persists, education alone cannot entirely close the gaps in economic opportunity.

Gains in college attainment have brought significant benefits for all groups, but persistent inequality raises serious questions about the capacity of education—by itself—to create an economically just world.

Despite its limitations as a remedy for wage inequality, college education improves economic productivity and living standards. Its advantages are multifaceted: education strengthens the economy and civil society, enhances individual opportunity and well-being, and enriches the human condition. For individuals, having a college degree is associated with monetary benefits like higher median wages and higher likelihood of employment, along with nonmonetary benefits like better health and greater reported happiness. At a national level, college degree attainment spurs economic growth,[12] facilitates innovation,[13] and encourages the critical inquiry and deliberative skills that are foundational to a functional democracy.[14]

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10 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled) and 2019–21 (pooled). In this report, we measure the educational attainment of individuals ages 25–64 within the US population. College degrees are based on highest level of attainment and include associate's degrees, bachelor's degrees, and graduate degrees.

11 Net lifetime earnings gains are the difference between the median lifetime earnings associated with holding a college degree and the median lifetime earnings associated with holding a high school diploma. We have adjusted for the individual costs of education (net tuition and fees and forgone earnings). We do not account for the interest payments associated with student loan debt. While we discuss these net lifetime earnings gains as occurring over the 2010–20 period because that is when the educational attainment gains occurred, the majority of these monetary gains will be realized in later years, over the course of workers' careers. See Appendix A for more detail.

12 Psacharopoulos and Woodhall, *Education for Development*, 1985; Psacharopoulos, *The Contribution of Education to Economic Growth,* 1984; Psacharopoulos, "Measuring the Marginal Contribution of Education to Economic Growth," 1972; Hanushek and Woessmann, "Education and Economic Growth," 2010; Hanushek and Woessmann, "Education, Knowledge Capital, and Economic Growth," 2020; Moretti, "Workers' Education, Spillovers, and Productivity," 2004.

13 Biasi et al., "Education and Innovation," 2021; Hanushek and Woessmann, "Education, Knowledge Capital, and Economic Growth," 2020.

14 Gutmann, *Democratic Education*, 1999; Carnevale et al., *The Role of Education in Taming Authoritarian Attitudes*, 2020.

This report documents the considerable economic benefits associated with increases in college degree attainment that occurred between 2010 and 2020, both nationally and within each state. It also describes the nonmonetary ways in which education contributes to human flourishing.

The first part of the report examines the economic benefits associated with increases in the overall levels of college degree attainment during this period. It also assesses the effect that these increases had on racial/ethnic and gender gaps in attainment and earnings, along with the potential monetary gains associated with closing remaining attainment gaps and earnings gaps. The second part further investigates the equity implications of differences by race/ethnicity and gender in the levels of college degree attainment. The third part describes the nonmonetary benefits associated with a college education. Finally, the fourth part provides state-level comparisons of degree attainment gains and associated gains in net lifetime earnings, overall and among Black/African American and Hispanic/Latino residents.

Through this analysis, we demonstrate that increased attainment over the second decade of the 21st century made a substantial difference across the nation. But we also show that the push to expand college access and support degree completion has not been enough to overcome relative differences in degree attainment. Even as attainment has risen across all racial/ethnic groups, colossal gaps persist between white adults and Black/African American, Hispanic/Latino, and Indigenous adults.[15] For several groups, gains in degree attainment lagged behind white gains. American Indian/Alaska Native, Black/African American, and Native Hawaiian/Pacific Islander adults increased their educational attainment — but so did white adults. Hispanic/Latino adults also increased their educational attainment significantly, but their substantial attainment gap with white adults has not narrowed much.

Moreover, college degrees are just one part of the economic opportunity equation. The fact that women and racial/ethnic minority groups continue to be paid less than white men *even when they have the same level of college degree attainment* is a critical obstacle to achieving economic parity. Without combatting factors like occupational segregation and wage discrimination that contribute to unequal pay among different groups, gains in educational attainment can only accomplish so much. Just as reaching attainment parity will require larger relative attainment gains for disadvantaged groups, equalizing the economic promise associated with attainment will require wage parity in addition to parity in degree attainment.

15 For example, the attainment gap between white adults and Black/African American adults is 16.4 percentage points, an increase of 0.2 percentage points from 2010 to 2020.

College degree attainment has been increasingly important to the American economy — but the "college for all" mantra isn't enough to create economic justice.

College enrollment has risen substantially in the United States since the beginning of the 20th century.[16] With the end of World War II, enrollment growth accelerated markedly as veterans returned home and the nation recognized the value of college in sustaining a democracy facing new and daunting scientific and diplomatic challenges.[17] National investment in college education was powered in part by the G.I. Bill, which expanded access to college but also reinforced racial divisions in attainment because its benefits were most readily available to white veterans.[18] It would take decades of progress and decisive victories by the civil rights movement before many colleges and universities began opening their gates to women, Black/African American students, and students from other marginalized groups[19] — and even with that progress, consequential racial/ethnic gaps in college degree attainment remain today.

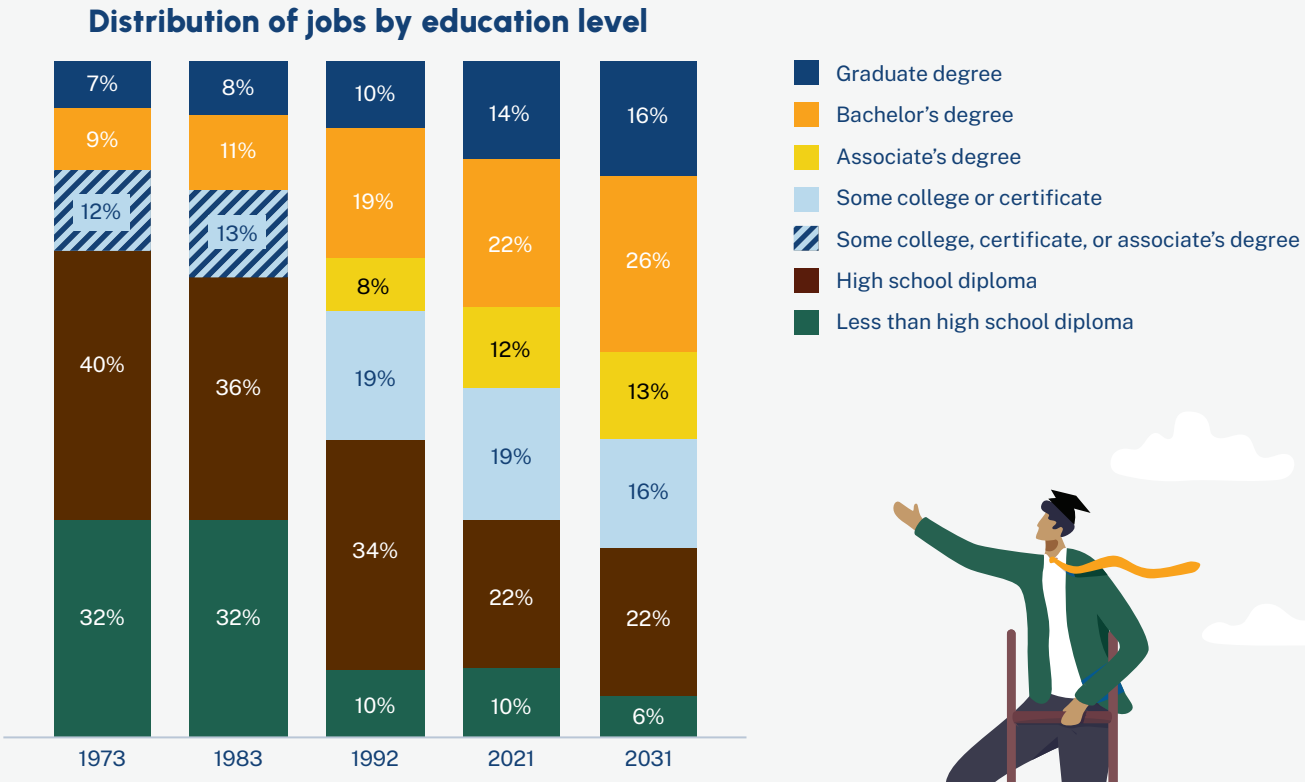
Around the same time that higher education began to desegregate and women became the majority of enrolled college students,[20] the United States became a college economy. In 1973, 72 percent of jobs required a high school diploma or less (Figure 1). But then manufacturing — a bulwark of the high school economy — began to lose its dominance in the American labor market, with employment in the sector reaching its peak in 1979 before falling off beginning in the 1980s.[21] After the 1981–82 recession, profound technological changes in the workforce shifted job requirements to postsecondary education and training across sectors.[22]

These changes in the labor market eroded opportunity for workers with no more than a high school diploma, and college became more a necessity than a luxury.[23] In 1983, 32 percent of American jobs went to workers with at least some college education.[24] That same year, the Department of Education published a report, *A Nation at Risk,* that sounded the alarm: the country's future would depend on its ability to prepare students for the information economy. As a result, high schools began to teach the "new basics" that would ready students for college and ultimately for jobs requiring a college degree.[25]

16 Snyder, *120 Years of American Education*, 1993.
17 President's Commission on Higher Education, *Higher Education for American Democracy*, 1947.
18 Carnevale et al., *The Unequal Race for Good Jobs*, 2019.
19 Carnevale et al., *The Unequal Race for Good Jobs*, 2019.
20 Snyder, *120 Years of American Education*, 1993.
21 Carnevale et al., *Upskilling and Downsizing in American Manufacturing*, 2019.
22 Carnevale and Rose, *The Economy Goes to College*, 2015.
23 Carnevale et al., *Upskilling and Downsizing in American Manufacturing*, 2019.
24 Carnevale et al., *After Everything*, 2023.
25 National Commission on Excellence in Education, *A Nation at Risk*, 1983.

Forty years later, college degree attainment has steadily added more and more value to the country's economy, bolstering the American people's well-being and the overall well-being of the country. The share of workers with postsecondary degrees has consistently risen, reaching 37 percent in 1992 and 48 percent in 2021; conversely, the share of jobs available to people without a college degree fell from 63 percent in 1992 to 51 percent in 2021. These trends are expected to continue in the coming years: by 2031, 55 percent of all jobs in the United States will go to workers with college degrees, and around 45 percent will go to workers without college degrees (Figure 1).

FIGURE 1. The proportion of all jobs held by workers with college degrees is expected to continue rising steadily.



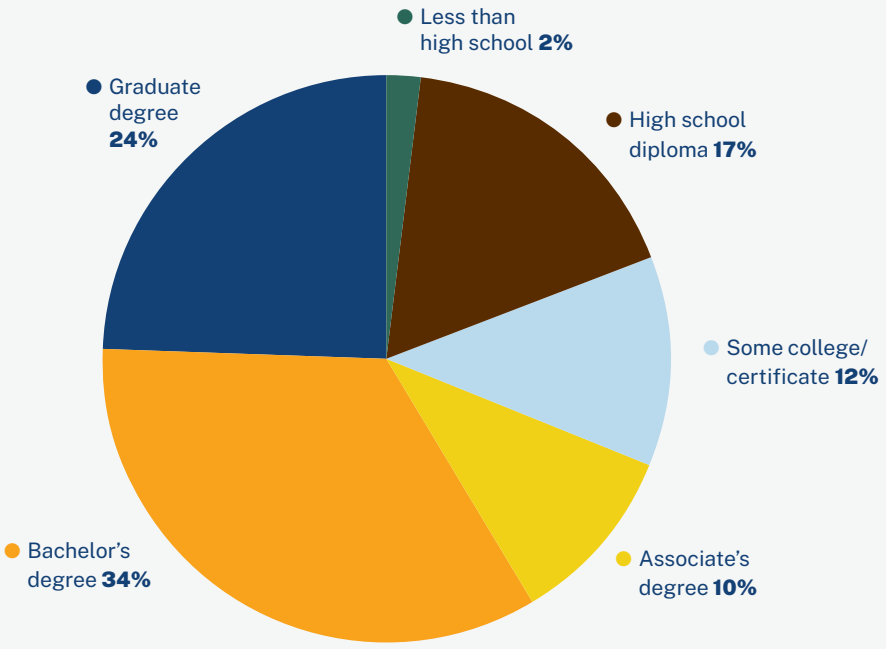
Source: Carnevale et al., *After Everything*, 2023, and Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey (CPS), 1973, 1983, and 1992.

Note: Before 1992, the education variable in the Current Population Survey (CPS) was identified as years of schooling. We are therefore unable to differentiate between "some college or certificate" and "associate's degree" in those years. "Certificate" refers to sub-baccalaureate postsecondary certificates. Values may not sum to 100 percent due to rounding.

Thus, today more than ever, our labor market favors workers with college degrees. And that favoritism is even stronger when it comes to good jobs — those that pay middle-class wages. In 2020, workers with college degrees held 69 percent of good jobs: 24 percent of good jobs went to workers with graduate degrees, 34 percent went to workers with bachelor's degrees, and 11 percent went to workers with associate's degrees (Figure 2). By 2031, 66 percent of good jobs will require a bachelor's degree or higher.[26]

FIGURE 2. Good jobs favor workers with college degrees.

Distribution of good jobs by educational attainment, 2020



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC), 2020–22 (pooled).

Note: The data include workers with positive earnings, ages 25–64. We define "good jobs" as those paying a minimum of approximately $43,000 in 2022 dollars for workers ages 25–44, a minimum of approximately $55,000 for workers ages 45–64, and a median of $82,000 nationwide. These numbers are adjusted for price differences to reflect differences in cost of living by state using US Bureau of Economic Analysis, SARPP Regional Price Parities by State, 2020. "Certificate" refers to sub-baccalaureate postsecondary certificates.

This report covers the period from 2010 to 2020, immediately after the Great Recession of 2007–9 deepened the fault lines between the college haves and the college have-nots, decimating blue-collar jobs among workers with high school diplomas and boosting college enrollment among adults seeking access to economic opportunity.[27] In the decade following the

26 Carnevale et al., *The Future of Good Jobs*, forthcoming.

27 Carnevale et al., *America's Divided Recovery*, 2016; Schmidt, "Postsecondary Enrollment before, during, and since the Great Recession," 2018.

Great Recession, the overall educational attainment of the population grew substantially, and the economic standing of individuals and the average standards of living in society improved as a result. Nevertheless, inequality has persisted, calling into question education's potential as the great equalizer and opening the postsecondary system up to criticism from both the right and the left.

It's true that raising college attainment at all degree levels, including the associate's degree level, would improve economic outcomes for the American people. At the same time, a bachelor's degree or higher remains the gold standard in providing access to economic opportunity. Thus, promoting "college for all" without addressing the differences in levels of attainment is not enough to create equal opportunity.

Attainment gaps by race/ethnicity are concentrated almost entirely at the bachelor's and graduate degree levels, where earnings are the highest. As a result, insofar as economic inequality is driven by gaps in degree attainment, addressing it will require raising the bachelor's and graduate degree attainment of Black/African American, Hispanic/Latino, and Indigenous adults. At present, bachelor's and graduate degree attainment gaps between these groups and white adults remain quite large: the gap favoring white adults reaches 15.3 percentage points at the bachelor's degree level (for American Indian/Alaska Native adults) and 9.8 percentage points at the graduate degree level (also for American Indian/Alaska Native adults). These gaps have not budged much despite attainment gains over the decade.

Promoting "college for all" without addressing the differences in levels of attainment is not enough to create equal opportunity.

For college-educated women, however, economic disparities with men of the same race/ethnicity have nothing to do with gaps in attainment. Women have higher degree attainment than men of the same race/ethnicity, with the exception of Asian/Asian American women.[28] But wage inequality persistently holds women back. Even with one degree more than men, women's median lifetime earnings still fall short of men's by hundreds of thousands of dollars.[29]

On the whole, attainment gains in the period from 2010 to 2020 did much to improve Americans' lives and bolster the American economy. But there is still a long way to go before all Americans experience equal opportunity in education and the workforce — and current shortfalls represent lost opportunities to strengthen the country's economic standing, improve people's lives, and make good on the promise of the American dream.

28 Asian/Asian American men have slightly higher college degree attainment than Asian/Asian American women.
29 See Table 2 for more detail about gender gaps in net lifetime earnings by degree level.

What about the benefits of certificates and other forms of short-term training?

In this report, we focus on the monetary and nonmonetary benefits associated with increased college degree attainment within the population. But while we underscore the value of degrees, we do not discount the value of certificates, other short-term postsecondary credentials, or training.

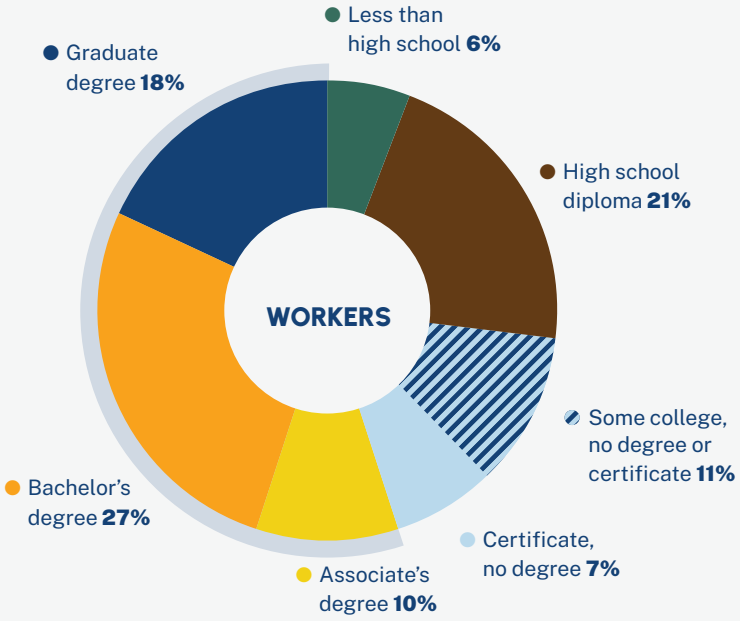
Our decision to focus on degrees is driven in part by necessity: the data on non-degree credentials are limited. At the same time, we know that these credentials have value, both on their own and in combination with degrees. For example, in 2022, workers with certificates but no degrees took home 5 percent of the country's earnings (Figure 3). Legislators and policymakers have recognized the value of such credentials and are interested in investing in training programs through provisions like short-term Pell Grants.

At the same time, the economic data indicate that the stand-alone value of short-term credentials is greatly overshadowed by the value of traditional postsecondary degrees. People with degrees take home an outsized share of total earnings (69 percent) relative to their share of the workforce (55 percent); the same is not true for people with certificates but no degrees, who are 7 percent of workers but take home only 5 percent of earnings (Figure 3).

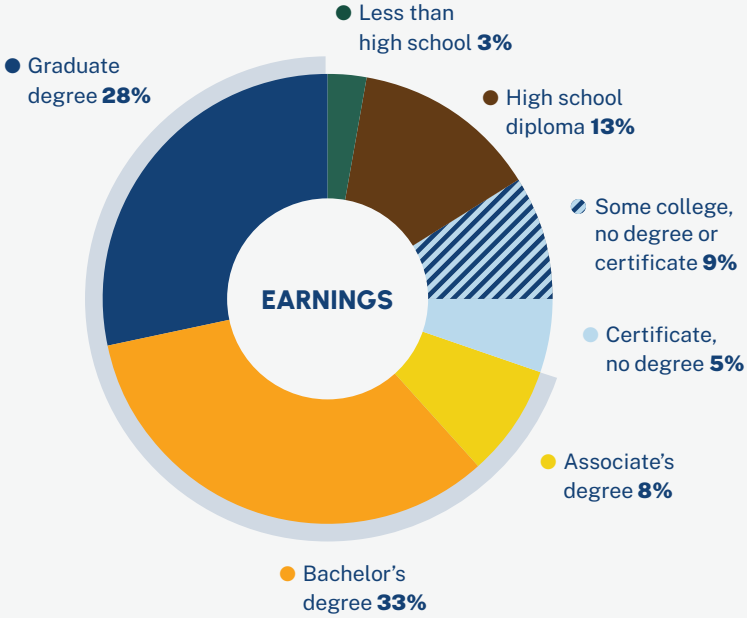
It's possible that the relative value of short-term training will increase in the future — especially if bipartisan investment in short-term training continues to grow, along with investment in jobs that don't require a college degree (such as many of those supported by the bipartisan Infrastructure Investment and Jobs Act of 2021). Historically, however, the college degree has been the key to the best economic opportunities in the United States, and it's likely to retain that distinction in the coming years, as we discuss on pages 13–14. For these reasons, we focus on college degree attainment in this report.

FIGURE 3. Degree holders are 55 percent of workers but take home 69 percent of earnings.

Share of workers by educational attainment



Share of earnings by educational attainment



Source: Georgetown University Center on Education and the Workforce analysis of the US Census Bureau, Survey of Income and Program Participation (SIPP), 2022.

Note: Workers include employees and business owners. Earnings include wages and positive business profits. Values may not sum to 100 percent due to rounding.

The District of Columbia has outpaced the states in college degree attainment gains in the adult population.

From 2010 to 2020, the District of Columbia (DC) had the largest gains — probably due to interstate migration — in the proportion of adults with an associate's degree or higher (12.07 percentage points) and in the proportion of adults with a bachelor's degree or higher (12.11 percentage points).[30] This ranking reflects the nature of the DC labor market: DC's local economy increasingly relies on workers with college degrees. The high gains thus likely reflect the fact that DC has increasingly attracted highly educated workers. Unfortunately, these gains do not reflect high levels of attainment among students in DC's education system, where high school completion lags far behind the national average.[31]

The District of Columbia's local economy increasingly relies on workers with college degrees. Its high gains thus likely reflect the fact that DC has increasingly attracted highly educated workers.

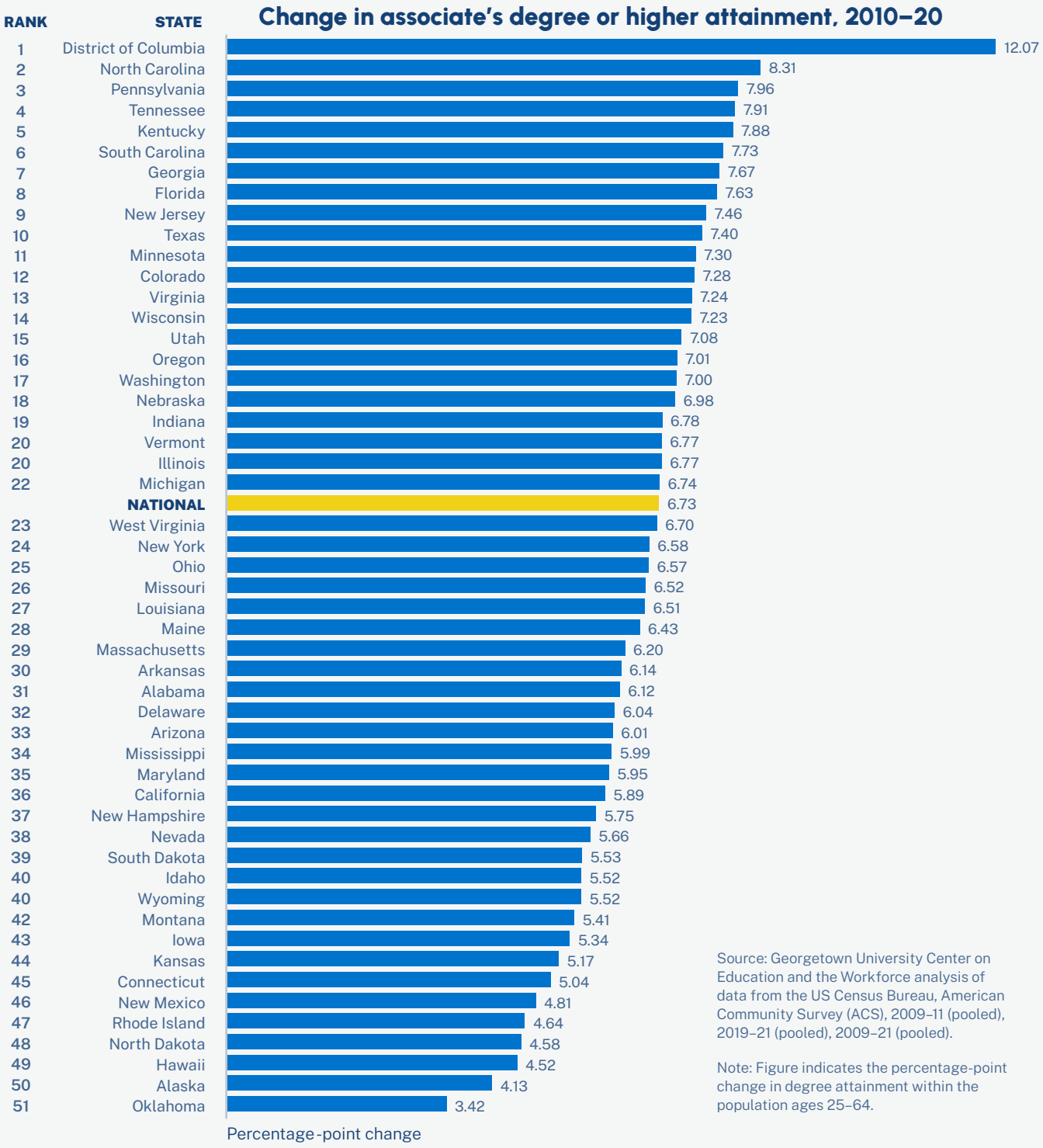
North Carolina had the second largest gains in the proportion of adults with an associate's degree or higher (8.31 percentage points) and in the proportion of adults with a bachelor's degree or higher (7.41 percentage points). Pennsylvania had the third largest gain in the proportion of adults with an associate's degree or higher (7.96 percentage points) but ranked ninth in gains in bachelor's degree or higher attainment (6.79 percentage points).

At the opposite end of the spectrum, Oklahoma had the smallest gain in the proportion of adults with an associate's degree or higher (3.42 percentage points) and the fourth smallest gain in the proportion of adults with a bachelor's degree or higher (3.15 percentage points). North Dakota had the smallest gain in the proportion of adults with a bachelor's degree or higher (2.69 percentage points) and the fourth smallest gain in the proportion with an associate's degree or higher (4.58 percentage points) (Figure 4).

30 In the District of Columbia, the proportion of the population with a bachelor's degree or higher grew more than the proportion with an associate's degree or higher because the city experienced a slight decline in associate's degree attainment. For more detail on state gains in attainment at the bachelor's degree level or higher, see Figure 18.

31 In 2010–11, public high schools in the District of Columbia had a cohort-adjusted four-year graduation rate of 59 percent, compared with the national rate of 79 percent. By 2019–20, this graduation rate had increased to 73 percent, but still lagged dramatically behind the national rate of 87 percent. US Department of Education, Table 219.46 of the *Digest of Education Statistics*, 2021.

FIGURE 4. Due to workforce demand, the District of Columbia saw a larger gain than any of the states in the proportion of the adult population with an associate's degree or higher.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled).

Note: Figure indicates the percentage-point change in degree attainment within the population ages 25–64.

PART 1.

The Rising Tide of College Degree Attainment

Rising college degree attainment has economic value for both individuals and society. The monetary benefits to an individual who earns a college degree include increased likelihood of higher earnings, lower chances of unemployment, and a higher likelihood of working full time. The monetary benefits to a society that has experienced rising levels of attainment include higher tax revenue and more economic activity due to higher consumer spending.[32] Together, these benefits provide strong justification for a national focus on increasing college enrollment and completion.

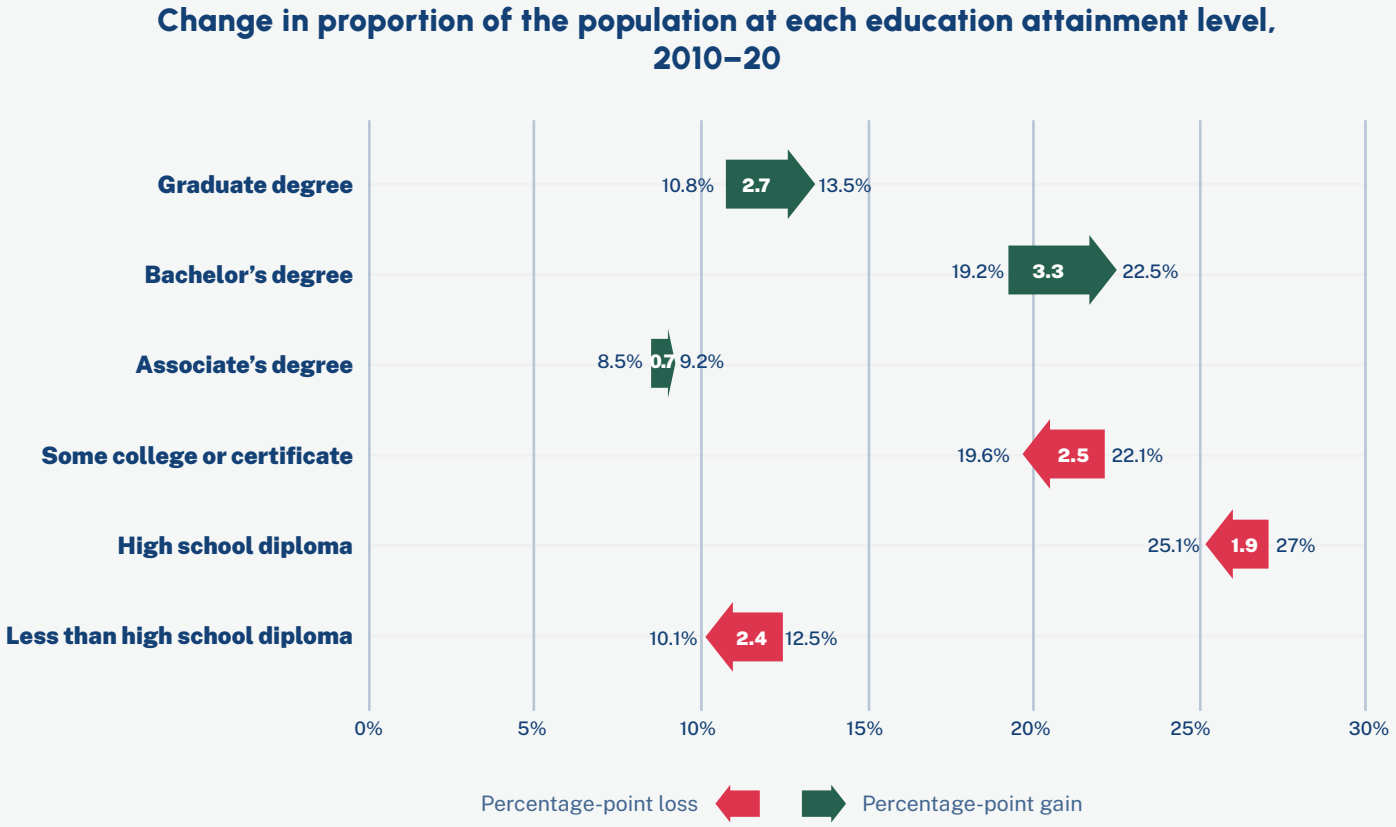
Between 2010 and 2020, rising college degree attainment was associated with significant increases in individual earnings — money that bolstered the US economy through increases in personal spending and tax revenues. All racial/ethnic groups experienced rising attainment, but because those gains were roughly even across groups, the attainment gaps relative to white adults barely budged. In addition, earnings gaps by race/ethnicity persisted, dampening the economic benefits associated with degree attainment for marginalized racial/ethnic groups. Closing these gaps could produce substantial gains for the US economy and for individuals in marginalized groups.

Increased college degree attainment over 10 years will lead to $14.2 trillion in net lifetime earnings gains.

From 2010 to 2020, the proportion of the population holding a college degree increased by 6.7 percentage points. This overall growth reflected an increase of 0.7 percentage points in the proportion with associate's degrees (rising from 8.5 percent to 9.2 percent), an increase of 3.3 percentage points in the share with bachelor's degrees as their highest level of attainment (rising from 19.2 percent to 22.5 percent), and an increase of 2.7 percentage points in the proportion with graduate degrees (rising from 10.8 percent to 13.5 percent) (Figure 5).

32 The value that every extra dollar earned contributes to overall economic activity can be expressed using an economic multiplier. For more about the impact of multipliers on GDP, see Carnevale et al., *The Monetary Value of Economic and Racial Justice in Postsecondary Education*, 2021.

FIGURE 5. The proportion of adults with bachelor's degrees rose more than four times as much as the proportion with associate's degrees.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled).

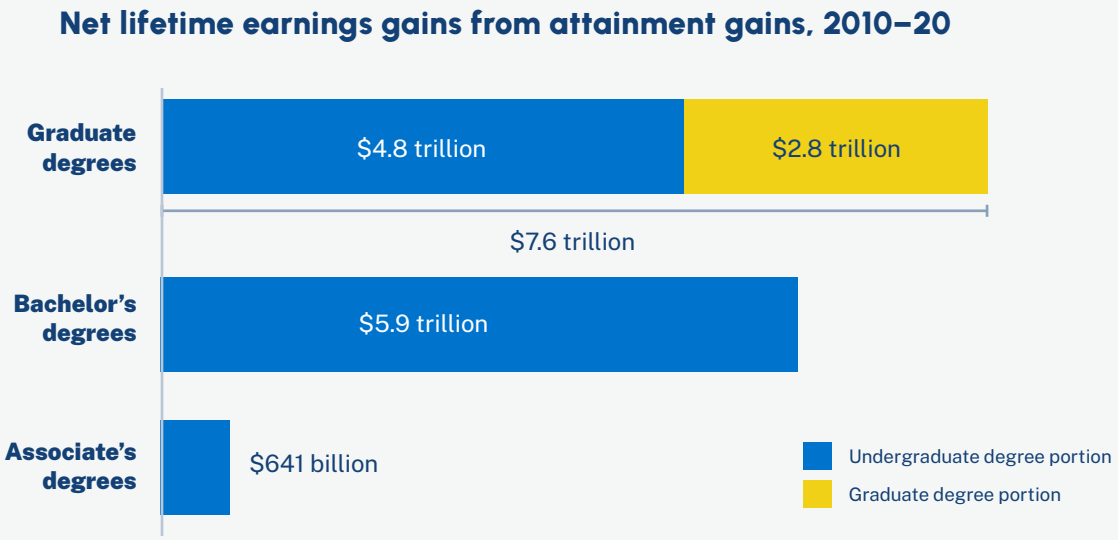
Note: Values may not sum due to rounding. "Certificate" refers to sub-baccalaureate postsecondary certificates.

These increases in the population's educational attainment are associated with earnings benefits.[33] Taking into account the likelihood of not working along with the individual costs of education, we estimated that the net lifetime earnings gains associated with gains in attainment are substantial: $495,000 over a lifetime for people who completed an associate's degree, $1 million for those who completed a bachelor's degree, and $1.7 million for those who completed a graduate degree.

33 To estimate these earnings benefits on a per-person level, we accounted for each person's likelihood of being employed and working full-time. To estimate how much each additional adult with a degree could be expected to earn over a full career, we used the premium in median lifetime earnings for people with each degree level relative to those with a high school diploma, and we subtracted the median costs of attaining the relevant degree (net tuition and fees and forgone earnings). See Appendix A for details.

We then scaled these net lifetime earnings gains up to the whole population. After adjusting for population growth,[34] we found that the increased levels of college degree attainment (11.5 million associate's, bachelor's, and graduate degrees) correspond to overall net lifetime earnings gains of $14.2 trillion — approximately $641 billion in gains from increased associate's degree attainment, $5.9 trillion in gains from increased bachelor's degree attainment, and $7.6 trillion in gains from increased graduate degree attainment (Figure 6).

FIGURE 6. US workers will see an additional $14.2 trillion in net lifetime earnings gains as a result of increased attainment that occurred from 2010 to 2020.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

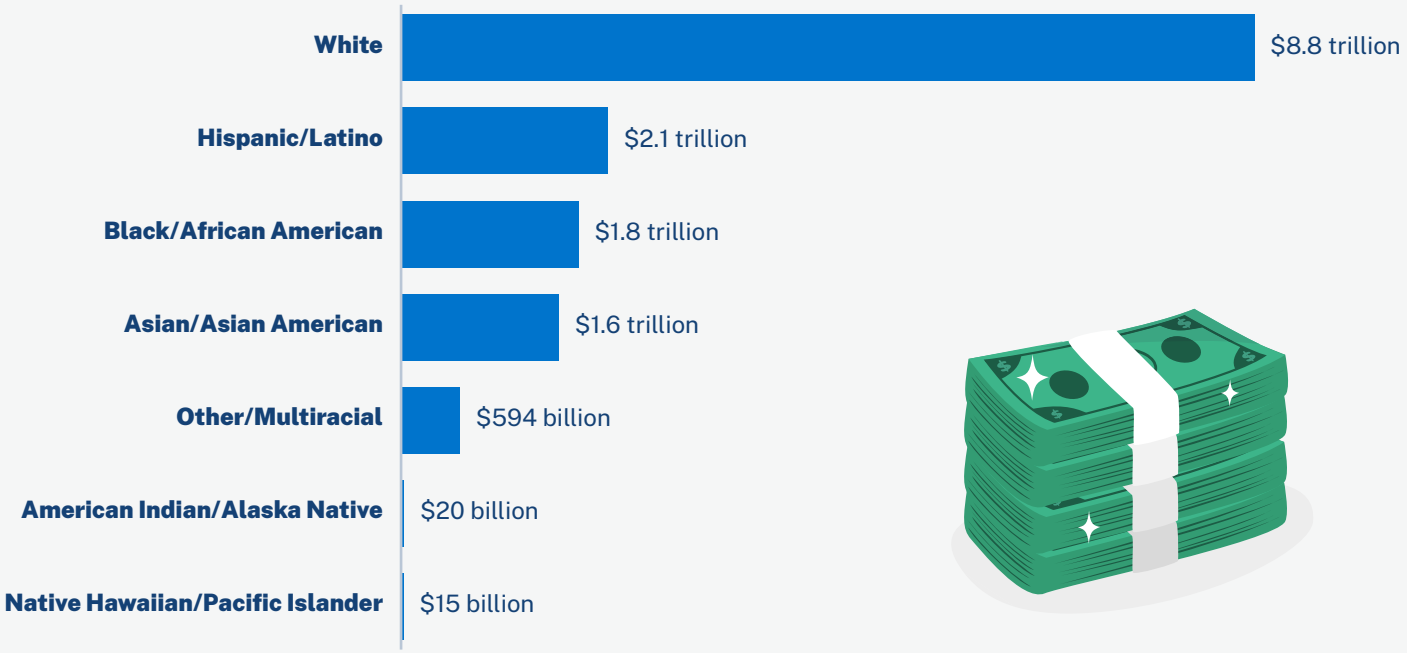
Note: Net lifetime earnings gains are the aggregate marginal gains relative to the expected lifetime earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings).

The net lifetime earnings gains associated with increased college degree attainment were significant over the period. White adults experienced the largest cumulative gains ($8.8 trillion), followed by Hispanic/Latino adults ($2.1 trillion), Black/African American adults ($1.8 trillion), and Asian/Asian American adults ($1.6 trillion). Rounding out the overall net lifetime earnings gains were other/multiracial adults ($594 billion), American Indian/Alaska Native adults ($20 billion), and Native Hawaiian/Pacific Islander adults ($15 billion) (Figure 7). The larger gains for white adults reflect both the larger population and the fact that wage discrimination tends to favor white workers.

34 See Appendix A for details about the population adjustment.

FIGURE 7. Differences in the net lifetime earnings gains associated with attainment gains reflected, in part, differences in population sizes.

Net lifetime earnings gains from associate's degree or higher attainment gains, 2010–20



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for changes in the numbers of adults at each attainment level due to changes in population. Net lifetime earnings gains are relative to the median lifetime earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings).

Both men and women also saw substantial gains in net lifetime earnings due to increased college degree attainment. Even though women still earn less than men with the same level of education, women's attainment grew substantially more than men's over the decade (with women achieving an 8.3-percentage-point increase in degree attainment, compared with a 5.1-percentage-point increase for men). As a result, the net lifetime earnings gains for women ($8.3 trillion) outpaced those for men ($6.5 trillion) (Figure 8).[35]

35 These percentage-point gains in the proportion of the population with degrees corresponded with 7.2 million new postsecondary degrees for women and 4.4 million new postsecondary degrees for men after adjusting for population change. On an individual level, the median net lifetime earnings gains associated with earning an additional postsecondary degree are smaller for women than for men. For more on the gender wage gap, see Part 2 of this report.

FIGURE 8. Because women outpaced men in attainment of college degrees, they also outpaced men in related net lifetime earnings gains over the decade.

Net lifetime earnings gains from associate's degree or higher attainment gains, 2010–20

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for changes in the numbers of adults at each attainment level due to changes in population. Net lifetime earnings gains are relative to the median lifetime earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings).

Rising college degree attainment has done little to close equity gaps.

While increased college degree attainment has benefited the population overall, it has not done much to narrow attainment gaps between white Americans and Americans from marginalized racial/ethnic groups. That's because, for most marginalized racial/ethnic groups, increases in the proportion of the population with a college degree did not exceed those of the white population.

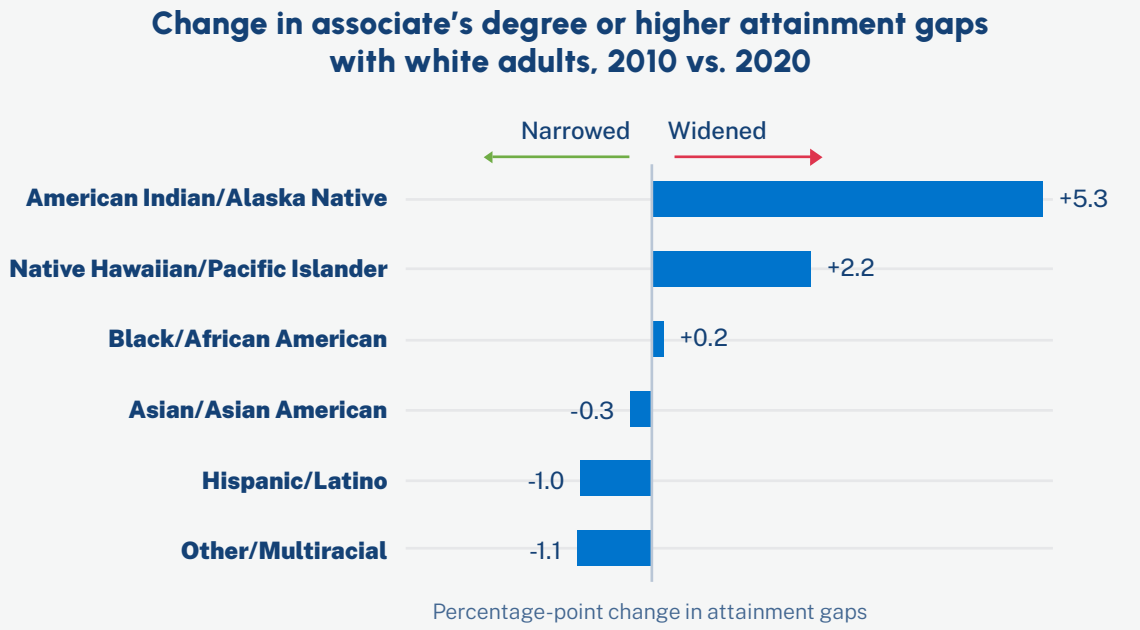
In other words, because all groups made comparable gains in the proportion of the population with a college degree, there was virtually no progress in closing racial/ethnic equity gaps. Racial equity gaps were significant in 2010, and they remained significant in 2020.

In fact, between 2010 and 2020, the attainment gaps between white adults and American Indian/Alaska Native adults, Native Hawaiian/Pacific Islander adults, and Black/African American adults actually widened. While all groups experienced gains in attainment, attainment growth for these three groups lagged slightly behind attainment growth for white adults. During this period, the proportion of white adults with a college degree increased by 7.3 percentage points. Meanwhile, the proportion of American Indian/Alaska Native adults with a college degree grew by 2 percentage points, causing the gap with white adults to increase by 5.3 percentage points; the proportion of Native Hawaiian/Pacific Islander adults with a college degree grew by 5.1 percentage points, causing the gap with white adults to increase by 2.2 percentage points; and the proportion of Black/African American adults with a college degree grew by

7.1 percentage points, causing the gap with white adults to increase by 0.2 percentage points (Figure 9).[36]

For groups that experienced more growth in attainment than the white population, the attainment gaps with white adults narrowed — but only slightly. The gaps between white adults and other/multiracial adults and Hispanic/Latino adults shrank by around 1 percentage point each. Asian/Asian American adults were the only racial/ethnic group with an advantage over white adults in the proportion of the population with a college degree, and this advantage also narrowed slightly over the period because Asian/Asian American attainment grew slightly less than that of white adults.

FIGURE 9. The attainment gap with white adults widened for American Indian/Alaska Native adults, Native Hawaiian/Pacific Islander adults, and Black/African American adults.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled).

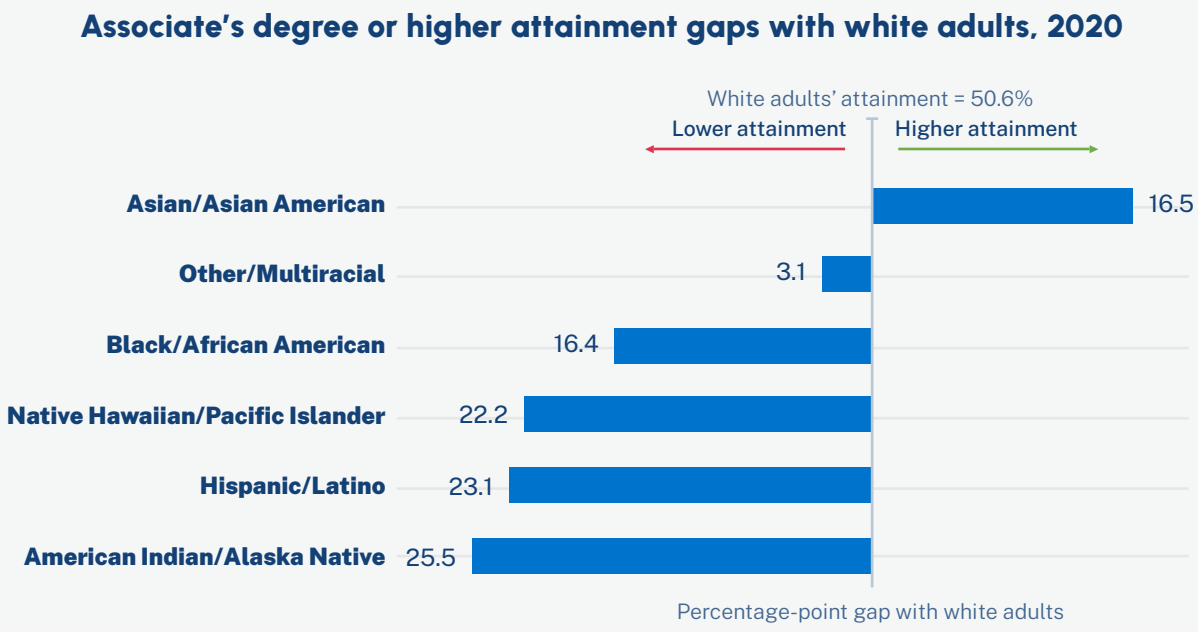
Note: Adults include the population ages 25–64.

36 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled).

At the end of the period, substantial attainment gaps persisted among different racial/ethnic groups even as all groups experienced gains in the proportion of the population with a college degree. The gap in the proportion with a college degree favored white adults by 25.5 percentage points compared with American Indian/Alaska Native adults, by 23.1 percentage points compared with Hispanic/Latino adults, by 22.2 percentage points compared with Native Hawaiian/Pacific Islander adults, by 16.4 percentage points compared with Black/African American adults, and by 3.1 percentage points compared with other/multiracial adults. Meanwhile, Asian/Asian American adults outpaced white adults in degree attainment by 16.5 percentage points (Figure 10).

As reflected in these gaps, the percentage of each racial group with an associate's degree or higher ranged widely, from 25.1 percent (for American Indian/Alaska Native adults) to 67.1 percent (for Asian/Asian American adults). Thus, significant inequalities in college degree attainment persisted, despite gains in attainment among all racial/ethnic groups.

FIGURE 10. Substantial racial/ethnic gaps in college degree attainment remain across the population.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled).

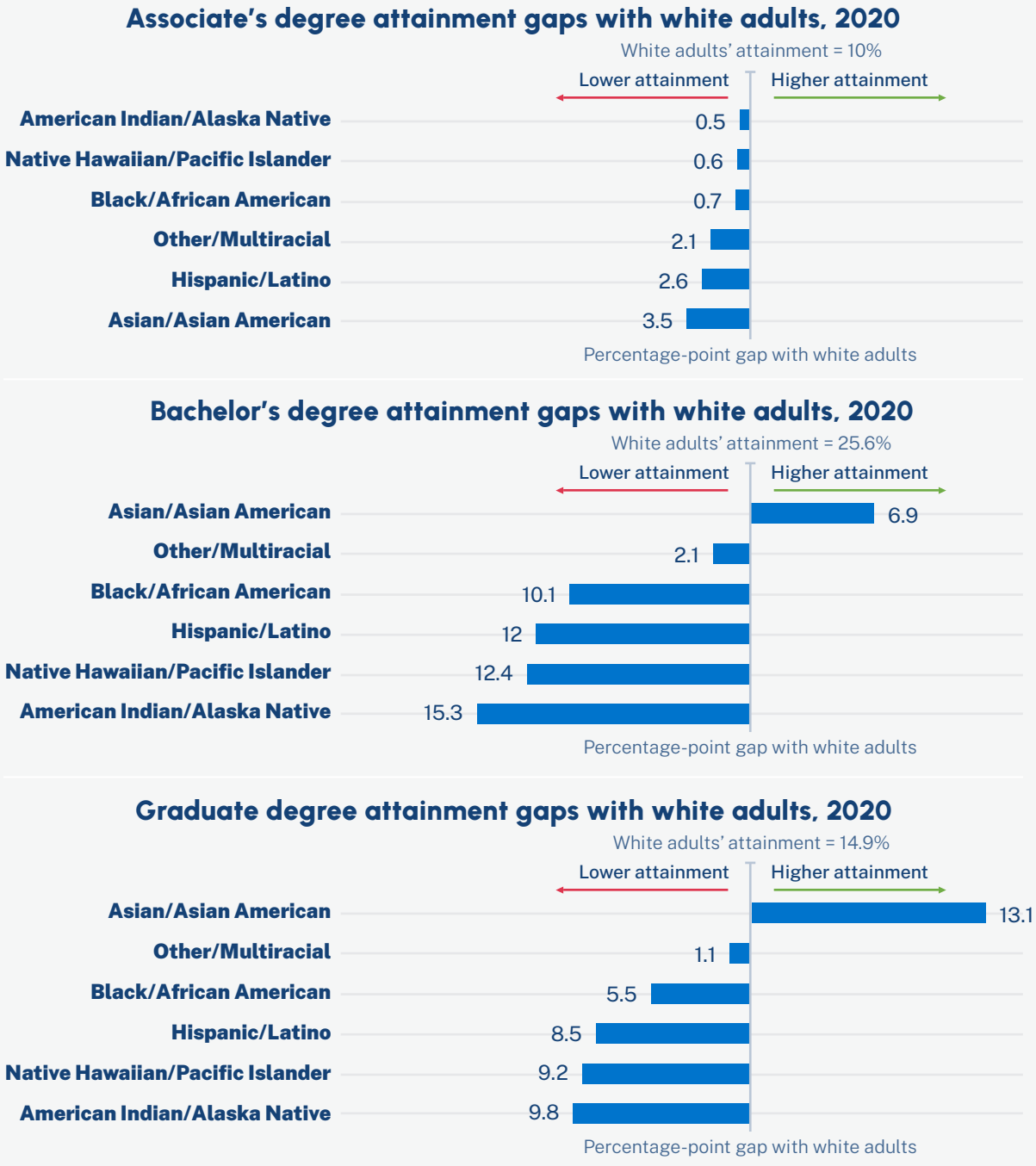
Note: Figure shows the percentage-point attainment gap with white adults within the population ages 25–64.

“College for all” is a good mantra, but it doesn’t equalize opportunity among college graduates.

We can’t promote “college for all” without addressing the importance of degree level in opening up access to economic opportunity. Because median earnings rise with each level of attainment, it matters whether new degrees are at the associate’s degree level, the bachelor’s degree level, or the graduate degree level. For example, while it is important to note that college degree attainment among Black/African American adults trails that of white adults by 16.4 percentage points, it is also important to recognize that the gap is driven almost entirely by differences at the bachelor’s and graduate degree levels.

Most racial/ethnic gaps in associate’s degree attainment relative to that of white adults are fairly small. The largest gaps at the associate’s degree level are between white and Asian/Asian American adults (a 3.5-percentage-point difference, favoring white adults) and between white and Hispanic/Latino adults (a 2.6-percentage-point difference, also favoring white adults). In contrast, the racial/ethnic gaps in bachelor’s degree attainment relative to that of white adults are in the double digits for most groups. Among white adults, 25.6 percent hold a bachelor’s degree as their highest level of attainment. This is 10.1 percentage points higher than among Black/African American adults, 12 percentage points higher than among Hispanic/Latino adults, and more than 15 percentage points higher than among American Indian/Alaska Native adults. The gaps in graduate degree attainment are generally larger than the gaps at the associate’s degree level and smaller than the gaps at the bachelor’s degree level (Figure 11).

FIGURE 11. Only small attainment gaps by race/ethnicity exist at the associate's degree level, while attainment gaps at the bachelor's and graduate degree levels are more pronounced.



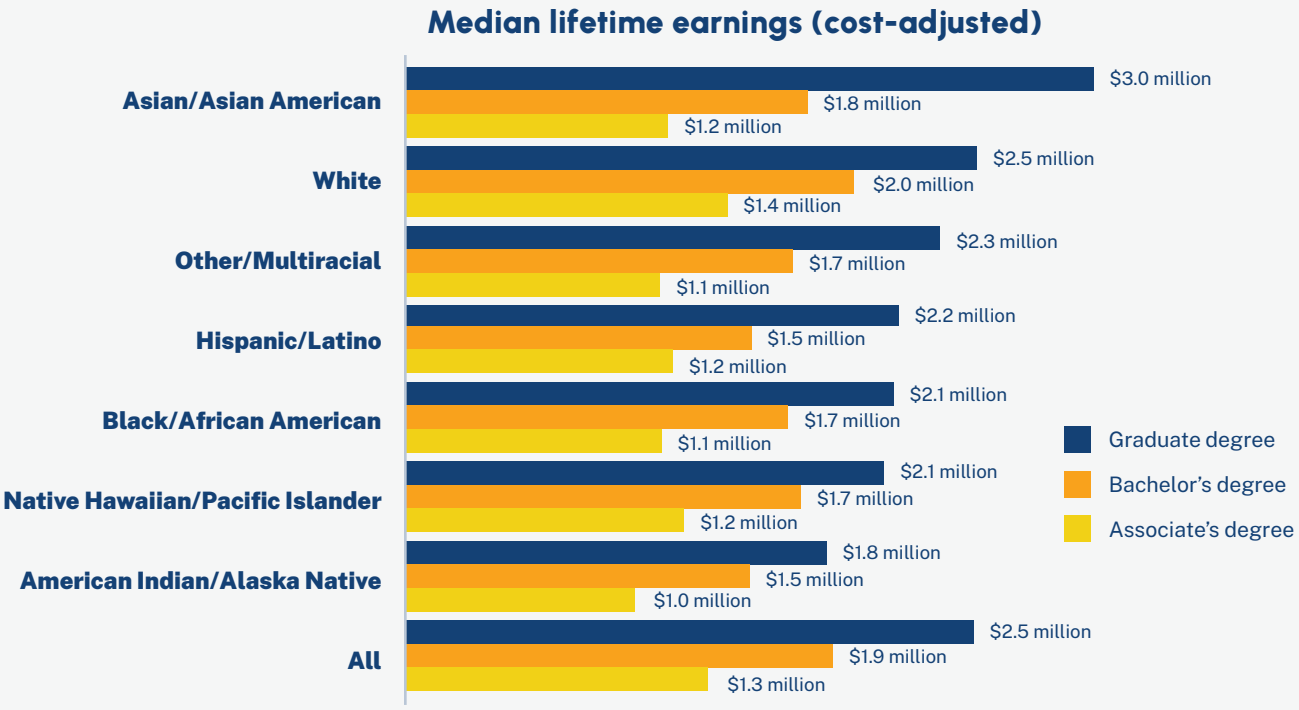
Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2019–21 (pooled).

Note: Figure shows the percentage-point attainment gap with white adults based on the highest level of educational attainment within the population ages 25–64.

Closing attainment gaps will not result in income equality without closing racial/ethnic and gender gaps in earnings among adults with the same levels of education.

Disparities in degree attainment matter because the differences in earnings by degree level are substantial. For example, the difference in median cost-adjusted lifetime earnings between adults with bachelor's degrees and those with associate's degrees is $550,000, and the difference between those with graduate degrees and those with bachelor's degrees is $607,000. However, even when marginalized racial/ethnic groups reach the same levels of attainment as white adults, they do not garner the same earnings in the labor market. For example, the median cost-adjusted lifetime earnings for white adults with bachelor's degrees are roughly $2 million over a full career, while the median cost-adjusted lifetime earnings for Hispanic/Latino adults with the same level of education are $1.5 million (Figure 12).

FIGURE 12. Lifetime earnings vary widely across groups, with white adults typically earning more than other racial/ethnic groups at each attainment level.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

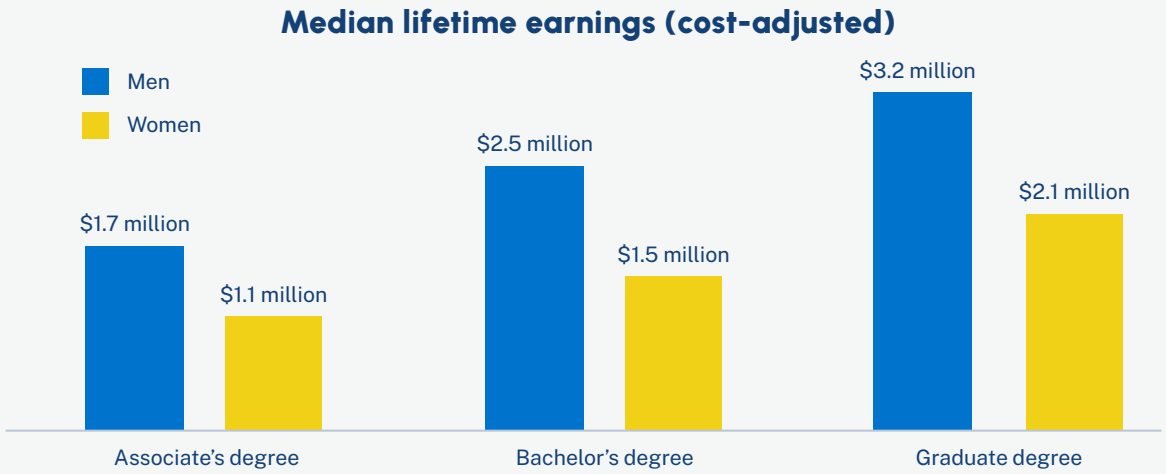
Note: The median lifetime earnings for adults ages 25–64 have been adjusted for the costs of education (net tuition and fees and forgone earnings) and account for the likelihood of working.

White and Asian/Asian American adults benefit from a double dose of advantage: their concentration at higher levels of educational attainment conspires with their higher earnings to sharpen their economic edge. That's why it's essential to address attainment gaps at the bachelor's degree and graduate degree levels while simultaneously identifying and addressing the root causes of racial/ethnic pay gaps at each level of attainment, including occupational segregation and wage discrimination.

Similarly, a comparison between men and women shows clearly that parity in attainment doesn't lead to parity in earnings without addressing gender gaps in earnings at each level of educational attainment. In the United States, women currently have higher college degree attainment than men, but men continue to have higher earnings than women. (For more details on these dynamics, see Part 2 of this report.)

Women have buoyed their career options by increasing their educational attainment, but wage inequality has acted as an anchor on their economic prospects. Women not only earn less than men over their careers but also gain less than men by getting an additional degree. Men earn a cost-adjusted lifetime median of $1.7 million with an associate's degree, increasing to $2.5 million with a bachelor's degree and $3.2 million with a graduate degree. Meanwhile, women earn a cost-adjusted lifetime median of $1.1 million with an associate's degree, $1.5 million with a bachelor's degree, and $2.1 million with a graduate degree. In fact, over their careers, women with graduate degrees make less than men with bachelor's degrees (Figure 13).

FIGURE 13. At every level of college degree attainment, men have higher lifetime earnings than women.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: The median lifetime earnings for adults ages 25–64 have been adjusted for the costs of education (net tuition and fees and forgone earnings) and account for the likelihood of working.

Extensive research has investigated why earnings gaps by race/ethnicity and gender exist. The evidence suggests that differences in degree level, college major, occupation, and industry are all contributing factors, as is discrimination based on race/ethnicity and gender. Differences in major, occupation, and industry stem in part from constrained choices — that is, choices between options that are predetermined by the specific opportunities available to an individual and that are affected by factors like societal expectations and exposure to role models. Further, multiple studies have shown how discrimination at the individual and systemic levels contributes to earnings gaps. Such discrimination takes various forms, from personal biases that affect hiring decisions to structural biases that limit access to good schools and good jobs.[37]

Women need at least one more degree than men to have equivalent earnings. Unless these earnings gaps close between men and women with the same level of education, women will continue to have strong incentives to seek more education than their male counterparts.

These earnings gaps and the factors that affect them may help explain why women's overall educational attainment continues to rise, even as women are already more educated as a group than men. As we have written elsewhere, women need at least one more degree than men to have equivalent earnings;[38] the gap is even larger when taking differences in workforce participation into account. Unless these earnings gaps close between men and women with the same level of education, women will continue to have strong incentives to seek more education than their male counterparts.

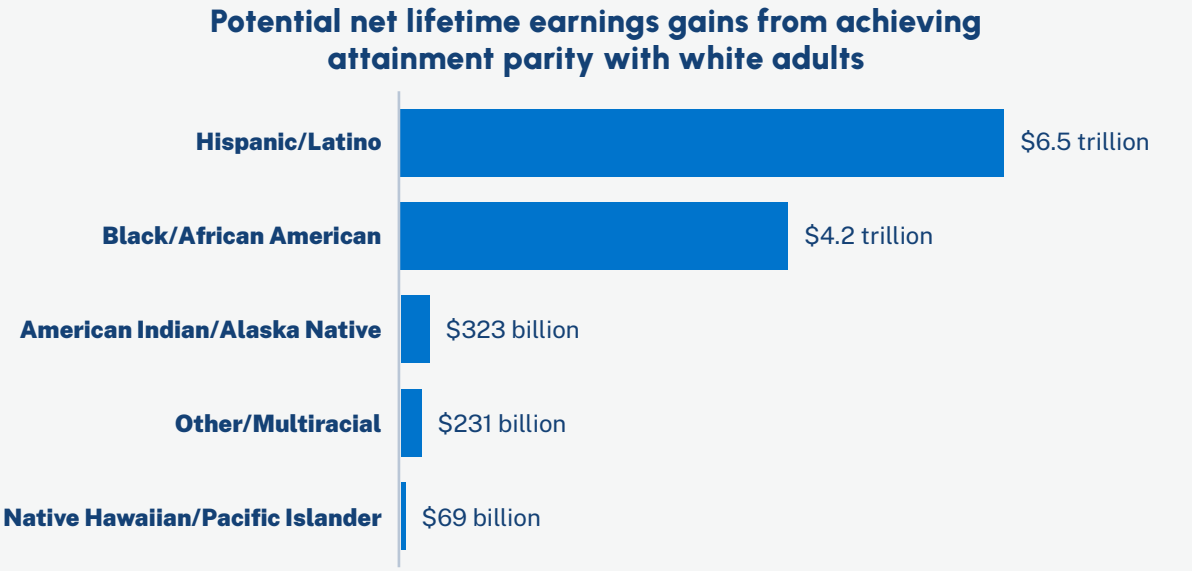
Inequality in attainment and earnings holds back the US economy.

Persistent attainment gaps translate into major shortfalls relative to the benefits that would be possible if parity in degree attainment were realized — an outcome that would require national, state, and local investments in improving the pathway to and through college for all groups. Indeed, if all racial/ethnic attainment gaps closed, individuals and the economy would benefit from considerably higher net lifetime earnings gains. Overall, if all racial/ethnic groups had degree attainment at least as high as that of white adults, the nation would realize an additional $11.3 trillion in net lifetime earnings gains beyond the $14.2 trillion resulting from attainment gains over the decade (Figure 14).

37 For a discussion of the different forms of discrimination and how they affect labor-market outcomes, see Carnevale et al., *How Racial and Gender Bias Impede Progress toward Good Jobs*, 2022.

38 Carnevale et al., *Women Can't Win*, 2018.

FIGURE 14. Closing attainment equity gaps with white adults would yield another $11.3 trillion dollars in net lifetime earnings gains.

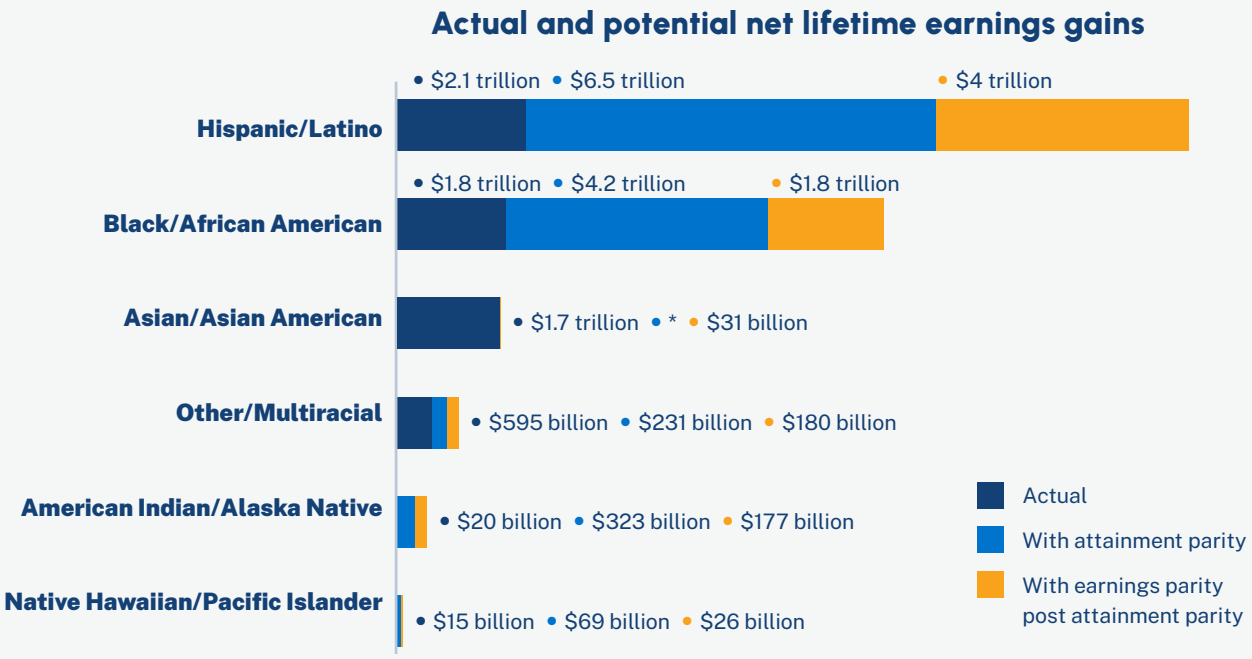


Source: Georgetown University Center on Education and the Workforce analysis based on data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for population differences between racial/ethnic groups. Net lifetime earnings gains are relative to the median lifetime earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings). Potential net lifetime earnings gains are the net lifetime earnings gains that would be realized if the groups' attainment distribution matched that of white adults in 2020. Asian/Asian American adults were excluded from this analysis due to having higher associate's degree or higher attainment than white adults.

Closing these earnings gaps among people with the same degree attainment levels in addition to closing the degree attainment gaps would lead to even greater gains in net lifetime earnings. In fact, achieving parity in attainment without closing earnings gaps would take us only about two-thirds of the way to the additional earnings gains that would be possible if two things happened: (1) the adults who gained in attainment during the period earned at least as much as white adults with the same level of education, and (2) the additional adults needed to equalize attainment with white adults also earned at least as much as white adults with the same level of education. On top of the $14.2 trillion in lifetime earnings gains resulting from attainment gains over the period and the $11.3 trillion in lifetime earnings gains that equalizing attainment would bring, this earnings parity would provide an additional $6.3 trillion. These additional net lifetime earnings gains would include approximately $177 billion for American Indian/Alaska Native adults, $31 billion for Asian/Asian American adults, $1.8 trillion for Black/African American adults, $4 trillion for Hispanic/Latino adults, $26 billion for Native Hawaiian/Pacific Islander adults, and $180 billion for other/multiracial adults (Figure 15).

FIGURE 15. Closing earnings gaps by education level after closing attainment gaps would more substantially increase the gains possible over closing attainment gaps alone.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for population differences between racial/ethnic groups. Net lifetime earnings gains are relative to the median lifetime earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings). Potential net lifetime earnings gains are the net lifetime earnings gains that would be realized if the groups' attainment distribution and/or earnings matched that of white adults in 2020.

*Because Asian/Asian American adults have higher attainment than white adults, attainment parity with white adults would not result in additional potential earnings gains among Asian/Asian American adults.

Clearly, the $11.3 trillion in earnings gains resulting from parity in educational attainment and the $6.3 trillion in gains achieved by equalizing wages at each level of education would go a long way toward increasing income and wealth for racial and ethnic groups that historically have had limited access to economic opportunity.

PART 2.

Persistent Economic Advantages for White Men despite Slower Attainment Growth

In Part 1 of this report, we explored the monetary gains associated with rising college degree attainment across racial/ethnic and gender groups while outlining remaining gaps in degree attainment and earnings. Examining these gaps by race/ethnicity and gender simultaneously gives new texture to the story, highlighting the fact that white men continue to hold on to their economic advantages despite having smaller college degree attainment gains than many other groups. In this section, we take a deeper dive into the racial/ethnic and gender dynamics that help determine who has access to economic opportunity in the United States.

Within nearly every racial/ethnic group, women's college degree attainment increasingly surpasses that of men. And among men and women of the same race/ethnicity, the differences in attainment gains over the last decade can be quite large. The proportion of Hispanic/Latina women with an associate's degree or higher grew by 9.2 percentage points between 2010 and 2020, compared with a gain of 7.3 percentage points for Hispanic/Latino men. The proportion of Black/African American women with an associate's degree or higher grew by 8.5 percentage points, compared with a gain of 5.7 percentage points for Black/African American men. The largest difference was between white women and men: the proportion of white women with an associate's degree or higher grew by 9.2 percentage points, compared with a gain of only 5.3 percentage points for white men.

As a result of these trends, the attainment gap favoring white women over white men has doubled from around 4 percentage points in 2010 to 8 percentage points in 2020, while the attainment gaps favoring white men over Hispanic/Latina women and Black/African American women have shrunk by 3.9 and 3.2 percentage points, respectively. Even among men, most groups have reduced their attainment gaps with white men. For example, Hispanic/Latino men have shrunk their gap with white men by 2 percentage points.

The story changes when it comes to earnings. White men continue to outearn every other group at every degree level except for graduate degrees, where they are edged out by Asian/Asian American men. In fact, white men with just some college credit outearn most groups of women with bachelor's degrees. For example, the median annual earnings for white women with bachelor's degrees are roughly $41,000, compared with median annual earnings of $42,000 for white men with only some college credit but no degree.

This disparity in earnings may help explain why white men have not increased their college degree attainment as much as other race/ethnicity and gender groups. This decision has had consequences for their economic standing: as Case and Deaton have documented, white adults with lower levels of education have suffered declining economic opportunities relative to previous generations.[39] At the same time, with just some postsecondary education and training coursework, white men attain earnings equivalent to or better than the earnings of men and women with college degrees in other racial/ethnic groups. The contrast between men and women is especially stark: with just a high school diploma, white men earn more than any group of women with an associate's degree.

Thus, a look at college degree attainment by both gender and race/ethnicity illuminates the dynamics at play in who has access to economic opportunity. White women and Asian/Asian American women outpace all other groups except for Asian/Asian American men in college degree attainment. At the same time, white men see higher earnings than other groups at all degree levels except for graduate degrees, where Asian/Asian American men take the lead.

College degree attainment is increasingly higher among women than among men of the same race/ethnicity, except among Asian/Asian American adults.

In 2020, 48.9 percent of women held at least an associate's degree, compared with 41.3 percent of men, with women having higher attainment at all degree levels. This held true for all racial/ethnic groups except two: Asian/Asian American adults and Native Hawaiian/Pacific Islander adults. Among Asian/Asian American adults, men had slightly higher levels of overall college degree attainment (67.4 percent for Asian/Asian American men compared with 66.8 percent for Asian/Asian American women) and more of an advantage in graduate degree attainment (with 30.2 percent of Asian/Asian American men holding a graduate degree versus 26.2 percent of Asian/Asian American women). Among Native Hawaiian/Pacific Islander adults, men had an advantage in graduate degree attainment (with 5.8 percent of Native Hawaiian/Pacific Islander men holding a graduate degree versus 5.7 percent of Native Hawaiian/Pacific Islander women) (Table 1).

39 Case and Deaton, "Mortality and Morbidity in the 21st Century," 2017.

TABLE 1. For most racial/ethnic groups, women have higher attainment than men.

Percentage of adults at each degree attainment level, 2020

	Race/ethnicity	College degree (associate's, bachelor's, or graduate degree)	Associate's degree	Bachelor's degree	Graduate degree
WOMEN	All women	48.9%	10.3%	23.8%	14.8%
	American Indian/Alaska Native	29.5%	11.2%	12.1%	6.2%
	Asian/Asian American	66.8%	6.8%	33.8%	26.2%
	Black/African American	39.2%	10.6%	16.9%	11.6%
	Hispanic/Latina	30.9%	8.3%	15.2%	7.3%
	Native Hawaiian/Pacific Islander	30.4%	10.6%	14.2%	5.7%
	Other/Multiracial	51.2%	11.1%	24.8%	15.3%
	White	54.6%	11.2%	26.8%	16.6%
MEN	All men	41.3%	8.1%	21.2%	12.1%
	American Indian/Alaska Native	20.6%	7.8%	8.6%	4.1%
	Asian/Asian American	67.4%	6.0%	31.1%	30.2%
	Black/African American	28.7%	7.8%	13.9%	7.0%
	Hispanic/Latino	24.2%	6.5%	12.1%	5.6%
	Native Hawaiian/Pacific Islander	26.2%	8.1%	12.3%	5.8%
	Other/Multiracial	43.6%	9.0%	22.3%	12.3%
	White	46.6%	8.8%	24.5%	13.3%

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2019–21 (pooled).

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

While attainment gaps by race/ethnicity did not change much over the period (as detailed in Part 1), the female attainment advantage grew. Overall, the proportion of women holding a college degree rose by 8 percentage points between 2010 and 2020, compared with a 5-percentage-point increase by men. Women's gains overwhelmingly occurred at the bachelor's degree and graduate degree levels.

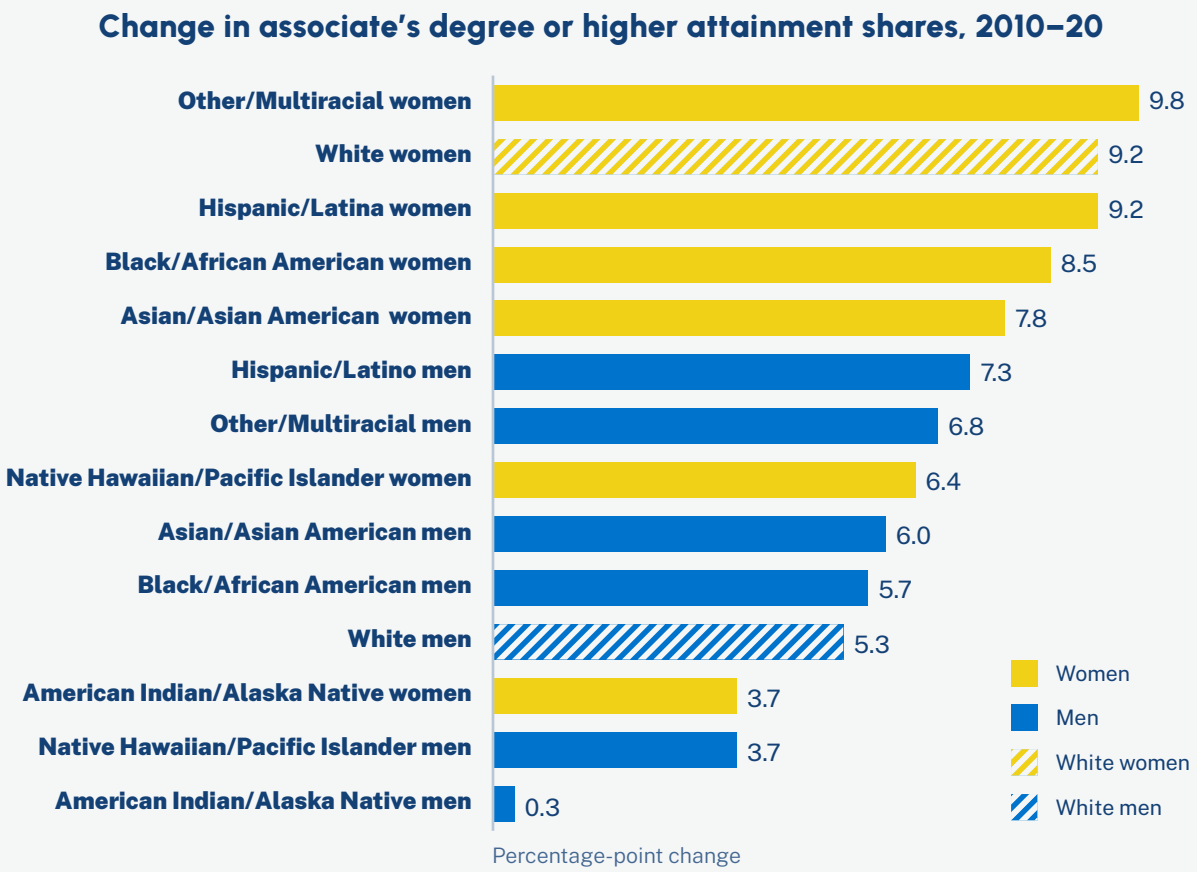
Among women in marginalized racial/ethnic groups, gaps in college degree attainment relative to white women were fairly constant over the time period. The two exceptions were the gaps between white women and American Indian/Alaska Native women and between white women and Native Hawaiian/Pacific Islander women. Both groups made smaller gains in the proportion of the population with college degrees (a 3.7-percentage-point increase and a 6.4-percentage-point increase, respectively) than the gains obtained by white women (a 9.2-percentage-point increase). Asian/Asian American women also stand out. Although their overall attainment gains were similar to those of white women, Asian/Asian American women's gains were almost entirely at the graduate degree level.

While men experienced smaller attainment gains than women, they saw more variation in their relative gains. White men's attainment gains were among the smallest of all groups; relative to other male racial/ethnic groups, their gains outpaced only those of American Indian/Alaska Native men (who experienced almost no gains in attainment) and Native Hawaiian/Pacific Islander men (whose gains were slightly smaller than those for white men). Black/African American, Hispanic/Latino, and Asian/Asian American men experienced larger increases in the proportion with a college degree than white men, slightly reducing attainment gaps with white men. Gains for Asian/Asian American men, as for Asian/Asian American women, were concentrated at the graduate degree level (Figure 16).

Wage inequality persistently holds women back despite their high levels of attainment.

It's often said that women require one postsecondary degree more than men to make the same wages. Taking into account differences in labor-market participation, our analysis shows that the story is even more dire: with one degree more than men, women's median lifetime earnings still fall short of men's by hundreds of thousands of dollars. This finding generally holds true within each racial/ethnic group.

FIGURE 16. Men and women within most racial/ethnic groups (with the exception of many Indigenous adults) have outpaced white men in college degree attainment gains.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled).

Note: Calculations are for adults ages 25–64.

The gender wage gap is evident for every racial/ethnic group and at every degree level. The smallest gap is for Native Hawaiian/Pacific Islander women with graduate degrees, who earn 89 cents on the dollar compared with Native Hawaiian/Pacific Islander men at the same degree level, while the largest gap is for Asian/Asian American women with bachelor's degrees, who earn only 53 cents on the dollar compared with Asian/Asian American men at the same degree level (Table 2).

TABLE 2. Within every racial/ethnic group, women have lower earnings than men with the same level of education.

	ASSOCIATE'S DEGREE		
RACE/ ETHNICITY	MEN (lifetime earnings*)	WOMEN (lifetime earnings*)	GAP RATIO (cents on the dollar)
American Indian/Alaska Native	$1.3M	$0.9M	$0.72
Asian/Asian American	$1.5M	$0.9M	$0.58
Black/African American	$1.3M	$1.1M	$0.82
Hispanic/Latino	$1.5M	$0.9M	$0.62
Native Hawaiian/Pacific Islander	$1.6M	$1.1M	$0.68
Other/Multiracial	$1.5M	$0.9M	$0.60
White	$1.9M	$1.1M	$0.61
All	$1.7M	$1.1M	$0.63
	BACHELOR'S DEGREE		
RACE/ ETHNICITY	MEN (lifetime earnings*)	WOMEN (lifetime earnings*)	GAP RATIO (cents on the dollar)
American Indian/Alaska Native	$1.7M	$1.4M	$0.78
Asian/Asian American	$2.4M	$1.3M	$0.53
Black/African American	$1.8M	$1.6M	$0.88
Hispanic/Latino	$1.9M	$1.2M	$0.63
Native Hawaiian/Pacific Islander	$2.1M	$1.5M	$0.70
Other/Multiracial	$2.2M	$1.3M	$0.60
White	$2.7M	$1.5M	$0.56
All	$2.5M	$1.5M	$0.58
	GRADUATE DEGREE		
RACE/ ETHNICITY	MEN (lifetime earnings*)	WOMEN (lifetime earnings*)	GAP RATIO (cents on the dollar)
American Indian/Alaska Native	$2M	$1.7M	$0.87
Asian/Asian American	$3.7M	$2.1M	$0.57
Black/African American	$2.4M	$2M	$0.85
Hispanic/Latino	$2.6M	$1.9M	$0.71
Native Hawaiian/Pacific Islander	$2.2M	$2M	$0.89
Other/Multiracial	$2.9M	$2M	$0.68
White	$3.2M	$2.1M	$0.64
All	$3.2M	$2.1M	$0.64

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: "M" indicates million.
*Lifetime earnings are adjusted for the costs of education (net tuition and fees and forgone earnings), as well as for the likelihood of being employed. Values shown in table are rounded.

Asian/Asian American men with graduate degrees are the only group of men whose lifetime earnings exceed those of white men. The fact that men in this group do so well comparatively might be one reason for the significant gain in the proportion of Asian/Asian American men with graduate degrees during this period.

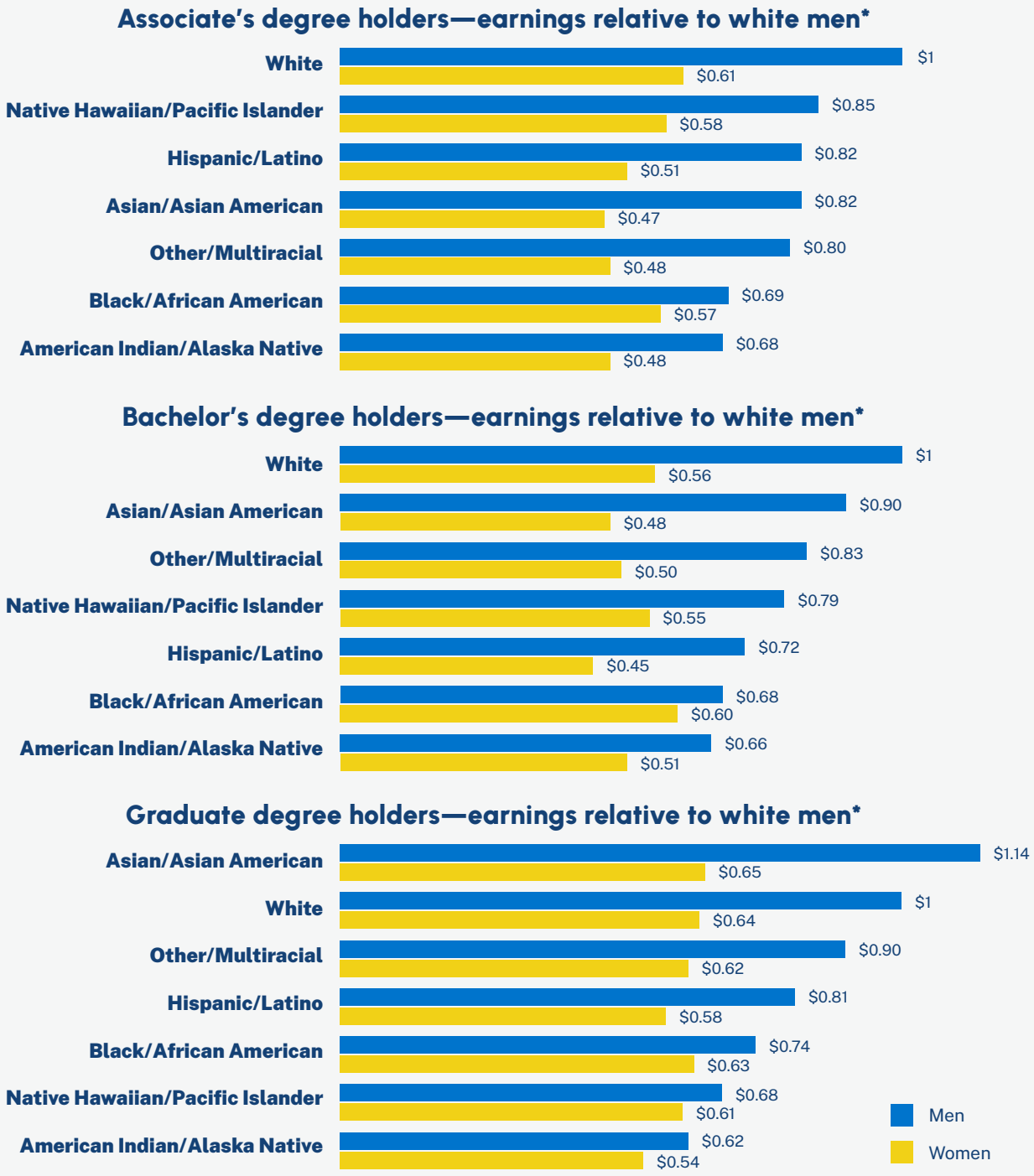
The overall result of these dynamics is that white men maintain an edge in earnings at each level of education except the graduate degree, where their earnings trail those of Asian/Asian American men (Figure 17).

White men persist in holding an earnings advantage, even among similarly educated groups. This, along with their high base levels of college degree attainment relative to those of other men, may help explain why they had among the lowest attainment gains of all groups. When they are able to earn more than other groups even without holding a college degree, they have less motivation than other groups to go to college. Indeed, 30 percent of white men without a college degree indicate that they didn't complete college because it wasn't necessary for their careers; 27 percent of white women say the same. Black/African American adults and Hispanic/Latino adults are less likely to report this reason.[40]

And yet, as we outline in the next section, the benefits associated with earning a college degree are much broader than just higher earnings. Many white men may be able to meet their career goals without a college degree, but in opting out of college, they may be missing out not only on potential monetary gains, but also on substantial nonmonetary benefits that affect their health and happiness and that of their families and communities.

40 Parker, "What's behind the Growing Gap between Men and Women in College Completion?," 2021.

FIGURE 17. White men have the highest earnings at each education level except for the graduate level, where Asian/Asian American men earn the most.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

*Earnings relative to white men are based on lifetime earnings adjusted for the costs of education (net tuition and fees and forgone earnings), as well as for the likelihood of being employed.

PART 3.

The Nonmonetary Benefits of College

In debates about the primary purposes of college, the pendulum swings with the times. In 1917, the US Department of the Interior's Bureau of Education produced a bulletin titled *The Monetary Value of Education*, noting in a prefacing letter that the relationship between education and national wealth was often overlooked.[41] Thirty years later, the US Department of Education published *Higher Education for American Democracy*, which instead emphasized the role of college education in sustaining a functional democracy, supporting international cooperation, and addressing contemporary problems.[42] Despite the differences in emphasis, these positions need not be in competition: clearly, college education has both monetary and nonmonetary benefits.

In the sections above, we detailed the monetary gains associated with rising levels of education within the population; in this section, we discuss the positive nonmonetary benefits associated with additional education after high school.[43] These nonmonetary benefits include better health, lower likelihood of engagement in crime, enhanced cognitive skills and civic engagement, stronger resistance to authoritarianism, greater appreciation for pluralism, and higher levels of happiness. Together, these benefits can significantly improve people's lives and raise the average standards of living within society, all while supporting the health of American commerce and American democracy.

Health

Higher levels of educational attainment are associated with a wide range of positive health outcomes, including longer life expectancy, decreased mortality, increased participation in healthy behaviors, and protection against mental illness. Adults with a postsecondary degree report better health and fewer health problems than those without one.[44] Meara and

41 Ellis, *The Money Value of Education*, 1917.
42 President's Commission on Higher Education, *Higher Education for American Democracy*, 1947.
43 This section of the report expands and revises discussion included in Carnevale et al., *The Cost of Economic and Racial Injustice in Postsecondary Education,* 2021.
44 Gallup and Lumina Foundation, *Education for What?*, 2023.

colleagues find that life expectancy is seven years longer on average for those who have been enrolled in college than for those who have not, with larger gains for Black/African American men (8.4 years) and white men (7.8 years) than for either Black/African American or white women (5.4 years).[45] Other research similarly finds gains in life expectancy associated with higher education, but finds that Black/African American men have lower health returns from education than white men or women of either race.[46]

Mortality rates are inversely correlated with educational attainment,[47] as are incidences of chronic diseases.[48] In fact, the mortality gap between adults with and without a bachelor's degree has widened in recent years, and rose especially quickly during the COVID-19 pandemic (when mortality rose for both groups).[49] Research indicates that the risks of mortality from "highly preventable causes of death" such as diabetes and lung cancer, respiratory diseases, and external incidents such as accidents are much lower for more highly educated individuals.[50] These effects on mortality have also been found to extend across generations: higher levels of maternal educational attainment have been associated with lower levels of infant mortality,[51] and higher levels of educational attainment for both mothers and fathers have been associated with lower levels of child mortality.[52] In evaluating chronic disease, Cutler and Lleras-Muney find that four additional years of schooling at any level are associated with reduced risk of heart disease and diabetes, but with no change in the likelihood of less-preventable diseases.[53]

Behavioral changes resulting from increased educational attainment likely account for some of the differences in life expectancy, mortality, and disease. A college education is associated with fewer negative health behaviors and more positive ones. For example, studies have found that those who have attended college have a lower likelihood of smoking,[54] drug use,[55] and alcoholism.[56] In addition, those with higher levels of educational attainment consume healthier

45 Meara et al., "The Gap Gets Bigger," 2008. The researchers compared life expectancy for those with 12 or fewer years of education and those with 13 years or more.

46 Everett et al., "The Nonlinear Relationship between Education and Mortality," 2013.

47 Trostel, *It's Not Just the Money,* 2015; Meara et al., "The Gap Gets Bigger," 2008; Hummer and Hernandez, "The Effect of Educational Attainment on Adult Mortality in the United States," 2013; Everett et al., "The Nonlinear Relationship between Education and Mortality," 2013.

48 Cutler and Lleras-Muney, "Education and Health," 2006. This study did not differentiate among primary, secondary, and postsecondary effects.

49 Case and Deaton, "Accounting for the Widening Mortality Gap between Adult Americans with and without a BA," 2023.

50 Risk of death from "highly preventable diseases" is 93 percent higher for those with 9 to 11 years of schooling than for counterparts with 17 years or more of schooling. This study measured educational attainment levels by years of schooling instead of by completion of credentials. See Hummer and Hernandez, "The Effect of Educational Attainment on Adult Mortality in the United States," 2013; Phelan et al., "'Fundamental Causes' of Social Inequalities in Mortality," 2004.

51 Green and Hamilton, "Maternal Educational Attainment and Infant Mortality in the United States," 2019.

52 Balaj et al., "Parental Education and Inequalities in Child Mortality," 2021.

53 Cutler and Lleras-Muney, "Education and Health," 2006. This study did not differentiate among primary, secondary, and postsecondary effects.

54 Sander, "The Effects of Schooling and Cognitive Ability on Smoking and Marijuana Use by Young Adults," 1998; Aizer and Stroud, "Education, Knowledge and the Evolution of Disparities in Health," 2010; Cutler and Lleras-Muney, "Education and Health," 2006; Assari et al., "Race, Educational Attainment, and E-Cigarette Use," 2020.

55 Cutler and Lleras-Muney, "Education and Health," 2006; Assari et al., "Race, Educational Attainment, and E-Cigarette Use," 2020.

56 Sander, "Cognitive Ability, Schooling and the Demand for Alcohol by Young Adults," 1999; Cutler and Lleras-Muney, "Education and Health," 2006.

diets,[57] invest more in preventive care,[58] and are more likely to avoid risky situations.[59] Four additional years of education are associated with a higher likelihood of obtaining regular flu shots, mammograms, Pap smears, and colonoscopies, as well as increased seat belt usage.[60]

Better mental health is also generally associated with higher educational attainment. A college degree appears to offer some protection against depression, with stronger effects for those from more disadvantaged backgrounds.[61] Evidence is mixed on whether this protective effect decreases or increases with age.[62] College-educated white adults are less likely to report anxiety or depression than their counterparts with less education,[63] and college completion offers some protection against future risk of suicide for non-Hispanic white adults, although not for non-Hispanic Black/African American adults.[64] Additionally, those with college degrees are less likely to suffer from chronic pain than those without.[65]

Crime and Incarceration

Higher educational attainment contributes to a safer society.[66] Research shows that individuals with a bachelor's degree are less likely to be involved in crime than those with no more than a high school diploma. This relationship exists even among individuals with a similar likelihood of completing college, although to a lesser degree than among the general population.[67] Research shows that college degree attainment is associated with lower crime in cities nationwide.[68] At the same time, education has diminishing returns when it comes to crime reduction: based on research

57 Cutler and Lleras-Muney, "Education and Health," 2006; Fard et al., "On the Interplay between Educational Attainment and Nutrition," 2021.
58 Cutler and Lleras-Muney, "Education and Health," 2006.
59 Vila, "The Non-Monetary Benefits of Education," 2000; Lochner, "Nonproduction Benefits of Education," 2011; Cutler and Lleras-Muney, "Education and Health," 2006.
60 Cutler and Lleras-Muney, "Education and Health," 2006.
61 Bauldry, "Variation in the Protective Effect of Higher Education against Depression," 2015. "Disadvantaged" in this study refers to those who have a low propensity to complete some college or attain a college degree, which was derived using information on sociodemographic factors, family resources, academic measures, adolescent health and health behaviors, symptoms of depression in adolescence, and an indicator for having received counseling in the past year. This study found that completing some college had about the same protective effect against depression as attaining a four-year degree.
62 Bjelland et al., "Does a Higher Education Level Protect against Anxiety and Depression?," 2008.
63 Cutler and Lleras-Muney, "Education and Health," 2006; Bjelland et al., "Does a Higher Education Level Protect against Anxiety and Depression?," 2008; Bauldry, "Variation in the Protective Effect of Higher Education against Depression," 2015.
64 Assari et al., "Higher Educational Attainment Is Associated with Lower Risk of a Future Suicide Attempt among Non-Hispanic Whites but Not Non-Hispanic Blacks," 2019.
65 Case and Deaton, *Deaths of Despair and the Future of Capitalism*, 2020. This finding was for white individuals ages 45–54, who were 15 percentage points less likely to report suffering from chronic pain if they had a college degree than if they did not.
66 Vila, "The Non-Monetary Benefits of Education," 2000; Lochner and Moretti, "The Effect of Education on Crime," 2004; Trostel, *It's Not Just the Money,* 2015.
67 Dennison, "The Crime-Reducing Benefits of a College Degree," 2019.
68 Boessen et al., "Long-Term Dynamics of Neighborhoods and Crime," 2023.

by Lochner and Moretti, Trostel estimates that the "reduction in crimes" due to high school completion is 5.4 times higher than the reduction due to college completion.[69]

Researchers have further examined the association between education and specific types of crime. Compared with those with higher levels of education, individuals with lower levels of education are more likely to be arrested for murder, assault, and motor vehicle theft.[70] Researchers estimate that there are 4 fewer murders, 406 fewer assaults, and 648 fewer property crimes for every 100,000 bachelor's degrees issued nationally.[71]

Because higher educational attainment is associated with a lower likelihood of committing a crime, it logically follows that educational attainment would be negatively associated with incarceration rates.[72] The likelihood of incarceration falls with each additional year of schooling: incarceration rates for those without a high school diploma surpass rates for college graduates by 2.98 percentage points for Black/African American men and 0.76 percentage points for white men.[73] Though incarceration rates decline with increasing educational attainment across racial groups, Black/African American men are incarcerated more frequently than their white counterparts at every level of educational attainment.[74] In fact, white male high school graduates without any further education are incarcerated at approximately half the rate of Black/African American male college graduates.[75]

These differences in incarceration rates may reflect differential treatment in the criminal justice system. Researchers have found that Black/African American young adults are seven times as likely to be arrested as white young adults after controlling for various contextual and behavioral factors.[76] Racial disparities also occur in sentencing.[77] On average, after controlling for education levels and other factors, Black/African American individuals receive sentences that are approximately a month longer, and Hispanic/Latino individuals receive sentences that are just over a month longer, than sentences received by white individuals for committing the same white-collar crimes.[78]

Research suggests that people who are attending school are less likely to be involved in certain types of crime.[79] Separate research highlights the importance of education policy in reducing crime through compulsory schooling laws and investments in school quality.[80] The relationship

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69 Trostel, *It's Not Just the Money,* 2015.
70 Lochner and Moretti, "The Effect of Education on Crime," 2004.
71 Trostel, *It's Not Just the Money,* 2015, interpreting Lochner and Moretti, "The Effect of Education on Crime," 2004.
72 Lochner and Moretti, "The Effect of Education on Crime," 2004; Trostel, *It's Not Just the Money,* 2015.
73 Lochner and Moretti, "The Effect of Education on Crime," 2004.
74 Lochner and Moretti, "The Effect of Education on Crime," 2004.
75 Lochner and Moretti, "The Effect of Education on Crime," 2004.
76 Schleiden et al., "Racial Disparities in Arrests," 2020.
77 Schanzenbach and Yaeger, "Prison Time, Fines, and Federal White-Collar Criminals," 2006.
78 Schanzenbach and Yaeger, "Prison Time, Fines, and Federal White-Collar Criminals," 2006.
79 Anderson, "In School and Out of Trouble?," 2014; Jacob and Lefgren, "Are Idle Hands the Devil's Workshop?," 2023; Bell et al., "Why Does Education Reduce Crime?," 2022.
80 Cano-Urbina and Lochner, "The Effect of Education and School Quality on Female Crime," 2019.

between incarceration and education works the other way as well: criminal activity in youth can inhibit one's ability to complete an education.[81]

Cognitive Skills

Research has found a possible association between educational attainment and critical thinking skills as well as general cognitive skills and abilities.[82] Optimistic results suggest that college increases students' critical thinking skills by 0.59 standard deviations,[83] and that each year of postsecondary education increases the standard deviation in cognitive ability by 21 percent.[84] However, some studies indicate that gains in critical thinking skills developed in college are smaller than this and decrease over time.[85] Others suggest that gains in critical thinking skills during college depend on a student's field of study, though the evidence on this is mixed.[86]

Education has also been found to have a positive association with intelligence and cognitive ability,[87] and there is evidence that the benefits of education are strongest among those with low scores on intelligence tests in childhood.[88] Older research suggests that one benefit of these effects is the ability to respond to economic change.[89] In addition, education has a strong, positive association with literacy skills.[90]

Postsecondary education in particular appears to be especially effective in increasing performance on cognitively complex tasks involving reasoning, and may also have a protective effect against declines in these skills with age.[91] Other evidence has suggested that higher educational attainment among later cohorts partially accounts for the declining incidence of cognitive impairment in old age compared with earlier cohorts.[92] The relationship between

81 Lochner and Moretti, "The Effect of Education on Crime," 2004.
82 Arum and colleagues are currently investigating the relationship between postsecondary education and outcomes like critical thinking in their Next Generation Undergraduate Success Measurement Project; see Arum et al., *Ensuring a More Equitable Future*, 2021.
83 Huber and Kuncel, "Does College Teach Critical Thinking?," 2016.
84 Gallup and Lumina Foundation, *Education for What?*, 2023.
85 Arum and Roksa, *Academically Adrift,* 2011; Pascarella and Terenzini, *How College Affects Students,* 2005.
86 Huber and Kuncel, "Does College Teach Critical Thinking?," 2016; Pascarella and Terenzini, *How College Affects Students,* 2005.
87 Falch and Massih, "The Effect of Education on Cognitive Ability," 2011; Hegelund et al., "The Influence of Educational Attainment on Intelligence," 2020.
88 Hegelund et al., "The Influence of Educational Attainment on Intelligence," 2020.
89 Schultz, "The Value of the Ability to Deal with Disequilibria," 1975; Shields and Shields, "Families, Migration and Adjusting to Disequilibrium," 1988.
90 Green and Riddell, "Literacy and Earnings," 2003.
91 Guerra-Carrillo et al., "Does Higher Education Hone Cognitive Functioning and Learning Efficacy?," 2017; Lehman and Nisbett, "A Longitudinal Study of the Effects of Undergraduate Training on Reasoning," 1990.
92 Leggett et al., "Recent Improvements in Cognitive Functioning among Older U.S. Adults," 2019.

education and cognitive ability may also be bidirectional, as higher cognitive ability appears to predict the choice to pursue further education.[93]

Civic Engagement

Multiple studies point to a positive relationship between educational attainment and civic engagement.[94] Education fosters an interest in politics,[95] and individuals with postgraduate degrees are nearly twice as likely to report that voting is a duty as those without a high school diploma.[96] This greater interest in and sense of civic duty translates to deeper knowledge of political issues, and thereby higher levels of political participation.[97] Research suggests that there may also be an indirect positive relationship between college and voting because people with degrees tend to have higher socioeconomic status, which may promote political participation.[98] That being said, education can play an important role in eliminating differences in political participation by socioeconomic status, with research from Europe indicating that education helps to close the political participation gap between low-income and high-income young adults.[99]

Self-reported voting rates are higher for those who have completed some college education than for those who never enrolled in college. Ahearn and colleagues find that self-reported voting rates are approximately 12 percentage points higher for individuals who attend college than those who do not, although individuals with a high propensity to attend college have a high probability of voting regardless of college attendance.[100] Milligan, Moretti, and Oreopoulos find a positive association between educational attainment and voting rates in US national elections: among individuals who dropped out of high school, 52 percent report voting in national elections, compared with 67 percent of high school graduates, 74 percent of individuals who complete some college, and 84 percent of college graduates.[101] According to Trostel's analysis, local elections show a similar pattern;[102] Gallup and Lumina Foundation find that self-reported rates of voting in both federal and local elections rise with each additional level of educational

93 Lövden et al., "Education and Cognitive Functioning across the Life Span," 2020.
94 Lipset, "Some Social Requisites of Democracy," 1959.
95 Hanushek, "Publicly Provided Education," 2002.
96 Hansen and Tyner, "Educational Attainment and Social Norms of Voting," 2019.
97 Lewis-Beck et al., *The American Voter Revisited*, 2008.
98 Ahearn et al., "How, and for Whom, Does Higher Education Increase Voting?," 2023.
99 Sloam et al., "Voice, Equality and Education," 2021.
100 Ahearn et al., "How, and for Whom, Does Higher Education Increase Voting?," 2023.
101 Milligan et al., "Does Education Improve Citizenship?," 2004.
102 Trostel finds that 28 percent of high school graduates with no college education report always voting in local elections, compared with 41 percent of college graduates with no further education and 45 percent of advanced degree holders; Trostel, *It's Not Just the Money,* 2015.

attainment.[103] One limitation of studies that use self-reported voting behaviors, however, is that individuals may misreport their own voting participation,[104] and individuals with higher levels of education are especially likely to overreport their actual voting behaviors.[105]

Specific coursework taken also can affect voting behavior. For instance, students who took at least one political science course at a community college were approximately 9 percent more likely to register to vote and 8 percent more likely to vote than students who did not take a course in political science. The political science students also had more knowledge about how the US government works than the students who did not take a political science course.[106]

Education also helps people develop the skills necessary to distill political concepts.[107] Additional schooling is associated with increased newspaper readership, community involvement, and support for free speech.[108] Individuals with more education are more likely to identify with a political group and follow elections.[109] Further, educational attainment is positively correlated with an array of behaviors associated with political engagement, including boycotting or purchasing products based on a company's political or social platform, contacting a public official, discussing politics, working on a community project, and attending a community meeting.[110]

Participation in community organizations and volunteering both rise with educational attainment. Participation in a community organization of any kind, including school or community associations, service or civic organizations, and religious institutions, jumps from just under 20 percent for high school graduates to 36 percent for individuals who completed some college, 48 percent for bachelor's degree holders, and 59 percent for advanced degree holders.[111] Individuals with at least a bachelor's degree are also more likely to volunteer, pursue nonprofit employment, and make charitable contributions than their counterparts with less education. Research has shown that 17 percent of high school graduates, 28 percent of individuals with some college, 40 percent of bachelor's degree holders, and 49 percent of advanced degree holders regularly volunteer.[112] Polling by Gallup and Lumina Foundation finds a moderate positive relationship between college education and voting, volunteering, donating, and participating in a school or neighborhood association.[113]

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103 Gallup and Lumina Foundation, *Education for What?*, 2023.
104 Milligan et al., "Does Education Improve Citizenship?," 2004.
105 Silver et al., "Who Overreports Voting?" 1986; Hansen and Tyner, "Educational Attainment and Social Norms of Voting," 2019.
106 Fernandez, "Turnout for What? Do Colleges Prepare Informed Voters?," 2021.
107 Verba et al., *Voice and Equality*, 1995.
108 Dee, "Are There Civic Returns to Education?," 2004.
109 Milligan et al., "Does Education Improve Citizenship?," 2004.
110 Trostel, *It's Not Just the Money,* 2015.
111 Trostel, *It's Not Just the Money,* 2015.
112 Trostel, *It's Not Just the Money,* 2015. Contrasting research has found no significant relationship between educational attainment and the likelihood of volunteering; Dee, "Are There Civic Returns to Education?," 2004.
113 Gallup and Lumina Foundation, *Education for What?*, 2023.

Resistance to Authoritarianism

Education produces an informed citizenry with the capacity to resist tyranny,[114] including through resistance to authoritarianism.[115] More-educated individuals tend to be more democratically oriented than their counterparts with less education[116] and are less susceptible to conspiracy theories.[117]

Our own research shows an inverse relationship between higher levels of education and preferences for authoritarianism. At each successively higher level of educational attainment, people are less inclined to support authoritarian regimes or express a lack of support for democracy. People with higher educational attainment are also less inclined to express authoritarian attitudes about childrearing practices. This disinclination toward authoritarianism is particularly strong among college graduates.[118]

While higher education on the whole plays a role in mitigating authoritarian tendencies, certain types of college education play a stronger role than others. Liberal arts majors are particularly disinclined to express authoritarian preferences and attitudes when compared with majors in science, technology, engineering, and mathematics (STEM) or business-related majors.[119] This speaks to the important role of liberal arts education in sustaining American democracy.

Pluralistic Orientation

An ability to collaborate across differences is essential to success in the 21st-century workforce and in American life. As the country becomes more diverse and workplaces become more team-oriented, workers increasingly need to be able to communicate across different backgrounds and viewpoints. Moreover, there are economic incentives associated with increased diversity: when companies improve their level of racial, ethnic, and gender diversity, their performance improves too.[120] At their best, colleges and universities cultivate students' ability to contribute to a diverse workforce and society through encounters with different people and perspectives, and encourage them to freely and respectfully debate the merits of different ideas.

114 Lipset, "Some Social Requisites of Democracy," 1959.
115 Carnevale et al., *The Role of Education in Taming Authoritarian Attitudes*, 2020.
116 Kołczyńska, "Democratic Values, Education, and Political Trust," 2020.
117 Georgiou et al., "Conspiracy Beliefs in the General Population," 2019.
118 This research measures authoritarian mindsets using survey data on political preferences as well as preferences related to childrearing practices; see Carnevale et al., *The Role of Education in Taming Authoritarian Attitudes*, 2020.
119 Carnevale et al., *The Role of Education in Taming Authoritarian Attitudes*, 2020.
120 Carnevale and Smith, "The Economic Value of Diversity," 2016.

Learning environments that promote meaningful engagement with diversity can help instill "a pluralistic orientation,"[121] which reflects an openness to other perspectives, a tolerance of different beliefs, and an ability to navigate controversy and disagreement. Interracial interactions specifically have been associated with such outcomes as "openness to diversity, cognitive development, and self-confidence"[122] and "intellectual ability, civic interest, and social skills."[123] Racially diverse campuses can set the stage for these interracial interactions: particularly for white students, the presence of racial diversity on campus has been shown to increase interactions across race.[124]

Colleges can also set the stage for interaction across other types of differences, including religious and political perspectives. In one study, the overwhelming majority (93 percent) of students reported engaging in interfaith friendship, although far fewer (41 percent) indicated navigating disagreements about religious differences. The same study found that students' attitudes toward liberal perspectives improved over four years of college, but their attitudes toward conservative perspectives improved only in the first year of college before falling to precollege levels.[125]

While meaningful interactions with diversity can lead to important learning outcomes, differences can also result in conflict. Cross-racial interactions that are negative in nature are associated with increased "intergroup anxiety."[126] Additionally, debate persists over whether education leads to deep and lasting appreciation for difference or simply teaches individuals to more adeptly promote their own self-interest, including by voicing an egalitarian mindset that aligns with social norms.[127]

This body of research suggests that while a college education may not intrinsically produce a pluralistic orientation or appreciation for diversity among students, it nonetheless offers significant access to learning opportunities that promote these outcomes. Importantly, both the presence of compositional diversity and opportunities for positive engagement across groups are essential to producing these benefits.[128]

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121 Engberg and Hurtado, "Developing Pluralistic Skills and Dispositions in College," 2011. Engberg and Hurtado measure pluralistic orientation according to "students' self-ratings regarding their ability to see the world from someone else's perspective, tolerance of others with different beliefs, openness to having one's views challenged, ability to work cooperatively with diverse people, and ability to discuss and negotiate controversial issues." The authors found that these effects were not uniform across racial/ethnic groups, and that pluralistic orientation upon college entry seemed to play a role in pluralistic orientation after two years in college.

122 Chang et al., "The Educational Benefits of Sustaining Cross-Racial Interaction among Undergraduates," 2006.

123 Chang et al., "Cross-Racial Interaction among Undergraduates," 2004.

124 Chang et al., "Cross-Racial Interaction among Undergraduates," 2004.

125 Rockenbach et al., *IDEALS*, 2020.

126 Engberg and Hurtado, "Developing Pluralistic Skills and Dispositions in College," 2011.

127 Dražanová, *Education and Tolerance*, 2017; Wodtke, "The Impact of Education on Inter-Group Attitudes," 2012.

128 In fact, college environments characterized by "white habitus" can increase "colorblind ideological orientations" among white students, potentially undermining the role of college in promoting racial justice. See Jayakumar, "The Shaping of Postcollege Colorblind Orientation among Whites," 2015.

Happiness

While evidence on the relationship between educational attainment and happiness can be difficult to interpret due to its subjective nature,[129] higher levels of education are generally associated with higher levels of happiness and satisfaction. Independent of income, high school graduates are 4 percentage points more likely than high school dropouts to report that they are happy, and college graduates are 2 percentage points more likely than high school graduates to report the same.[130] The positive relationship between education and happiness is stronger for men than for women[131] and for Black/African American adults than for white adults.[132] The effect is also more significant for low- and middle-income groups than it is for high-income groups.[133]

The latter point raises a question: Is the positive relationship between education and happiness due to education, or is it due to the increased income generally associated with higher levels of education? Academic literature offers differing perspectives. Some research shows that the relationship persists even when controlling for income, unemployment levels, and health. This suggests that education provides satisfaction independent of its effect on other aspects of life, such as earnings.[134] Contrastingly, Blanchflower and Oswald's survey of the literature revealed that the effect of education on happiness is primarily due to the effect education has on income levels. Their results indicated that one additional year of education in the United States is associated with a 0.017-percentage-point increase in self-reported happiness.[135]

Levels of reported happiness associated with education have changed over time. Americans with both high and low levels of education have experienced downward trends in self-reported happiness levels since the 1970s, and that decline has been approximately equivalent regardless of education level.[136] Other research finds that the happiness gap between white college graduates and white individuals with less education has grown since the late 20th century. White individuals without a college education are more likely to report regular feelings of unhappiness than college graduates in the same demographic group.[137]

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129 It is possible, for example, that groups reporting higher levels of happiness are not happier per se but are simply more likely to say that they are happy due to socialization or other factors.
130 Oreopoulos and Salvanes, "Priceless," 2011.
131 Blanchflower and Oswald, "Well-Being over Time in Britain and the USA," 2004.
132 Assari, "Race, Education Attainment, and Happiness in the United States," 2019.
133 Salinas-Jiménez et al., "Education as a Positional Good," 2011.
134 Salinas-Jiménez et al., "Education as a Positional Good," 2011.
135 Blanchflower and Oswald, "International Happiness," 2011.
136 Blanchflower and Oswald, "Well-Being over Time in Britain and the USA," 2004.
137 The researchers included only white adults in this analysis. Case and Deaton, *Deaths of Despair and the Future of Capitalism*, 2020.

PART 4.

The Value of Attainment Gains in the States

Over the decade from 2010 to 2020, every state in the nation saw economic benefits associated with gains in the proportion of the adult population holding an associate's degree or higher. The size of the increases varied widely by state, however. In addition, some states saw more success in raising attainment at the level of an associate's degree or higher than in raising attainment at the level of a bachelor's degree or higher.

When considering rising educational attainment at the state level, it is important to recognize that attainment gains do not necessarily reflect improvements in degree production within a state's school system. Not all adults in a state were educated in that state; some moved to the state after completing their educations. We do not account for the effects of interstate migration on educational attainment distribution in this report. The level of educational attainment within any state should therefore be interpreted as a reflection of the demands of the labor market within that state more than as a reflection of the relative performance of that state's school system. This distinction is especially relevant in places like the District of Columbia, which outpaced all the states in

college degree attainment gains over the period but which still lags far behind the national average in K–12 outcomes.[138]

In this section of the report, we break down attainment gains and related net lifetime earnings gains by state. We identify which states experienced the largest (and smallest) gains in college degree attainment, and we estimate how much each state's population benefited from an increase in net lifetime earnings as a result. We also examine attainment gains and net lifetime earnings gains for the Black/African American and Hispanic/Latino populations within each state.[139]

Attainment Gains by State

Profiles showing gains in educational attainment, attainment gaps by race/ethnicity, and associated earnings gains are available at cew.georgetown.edu/AttainmentGains.

The biggest jump in college degree attainment among adults occurred in the District of Columbia.

The District of Columbia, North Carolina, and Pennsylvania saw the largest gains in the proportion of adults with an associate's degree or higher (with gains of 12.07 percentage points, 8.31 percentage points, and 7.96 percentage points, respectively). The District of Columbia, North Carolina, and New Jersey saw the largest gains in the proportion of adults with a bachelor's degree or higher (with gains of 12.11 percentage points, 7.41 percentage points, and 7.24 percentage points, respectively). At the other end of the spectrum, Oklahoma, Alaska, and Hawaii had the lowest gains in the proportion of adults with an associate's degree or higher, and North Dakota, South Dakota, and New Mexico had the lowest gains in the proportion of adults with a bachelor's degree or higher (Figure 18).

As at the national level, these increases in the level of college degree attainment were associated with net lifetime earnings gains. Among the states, these gains range from $9 billion in Wyoming to $1.9 trillion in California, reflecting such factors as the state's population size, the increase in degree attainment at each degree level (associate's, bachelor's, or graduate), and how much adults at each level of education earn within the state relative to the cost of living in that state (Figure 19).

138 The District of Columbia's public high school graduation rate was 73 percent in 2019–20, far behind the national rate of 87 percent. US Department of Education, Table 219.46 of the *Digest of Education Statistics,* 2021.

139 We do not include analysis for racial/ethnic minority groups other than Black/African American and Hispanic/Latino populations due to insufficient sample sizes in many of the states.

FIGURE 18. The District of Columbia had the largest increases in the proportion of the population with an associate's degree or higher or with a bachelor's degree or higher in the decade spanning 2010 to 2020.

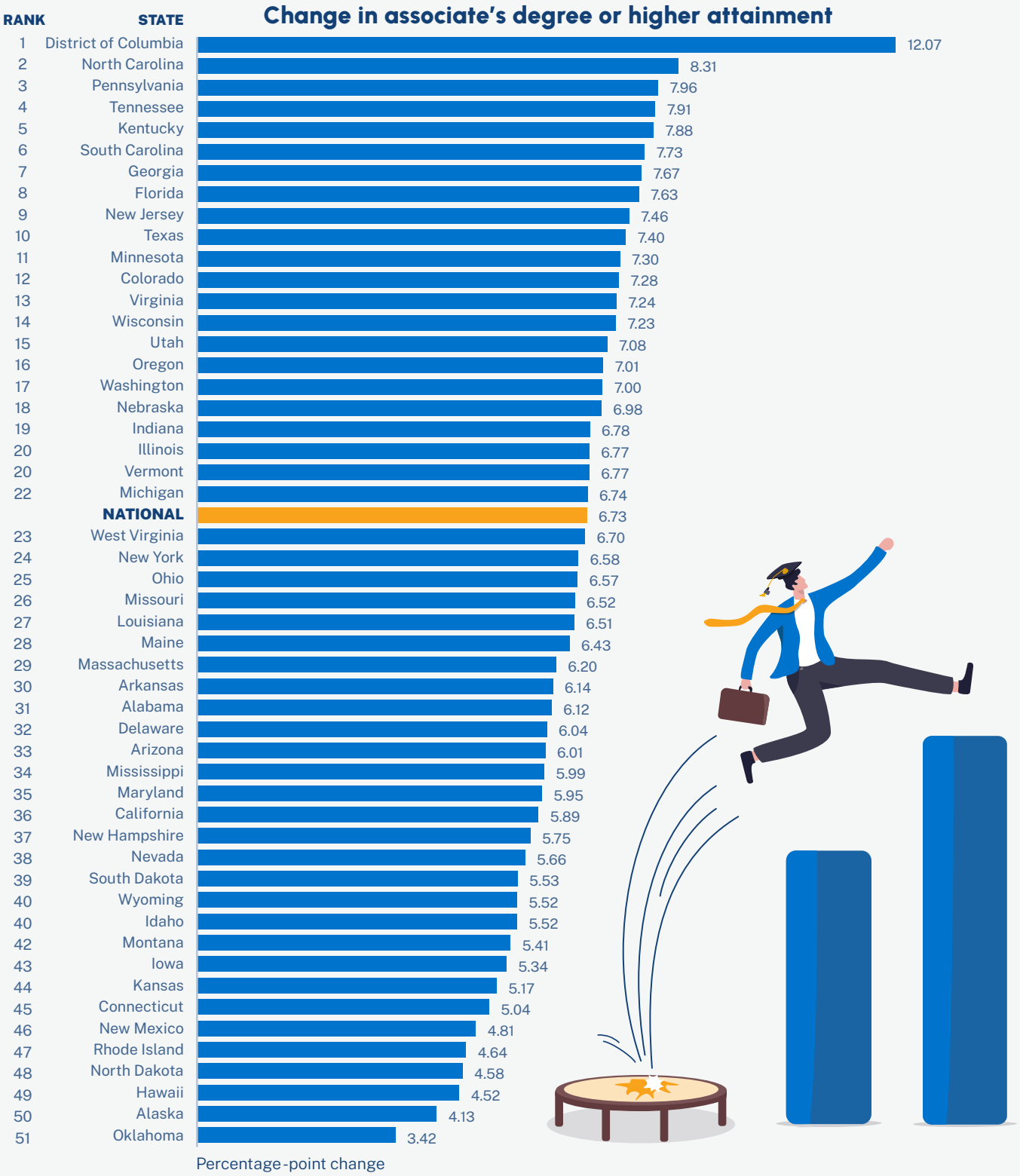
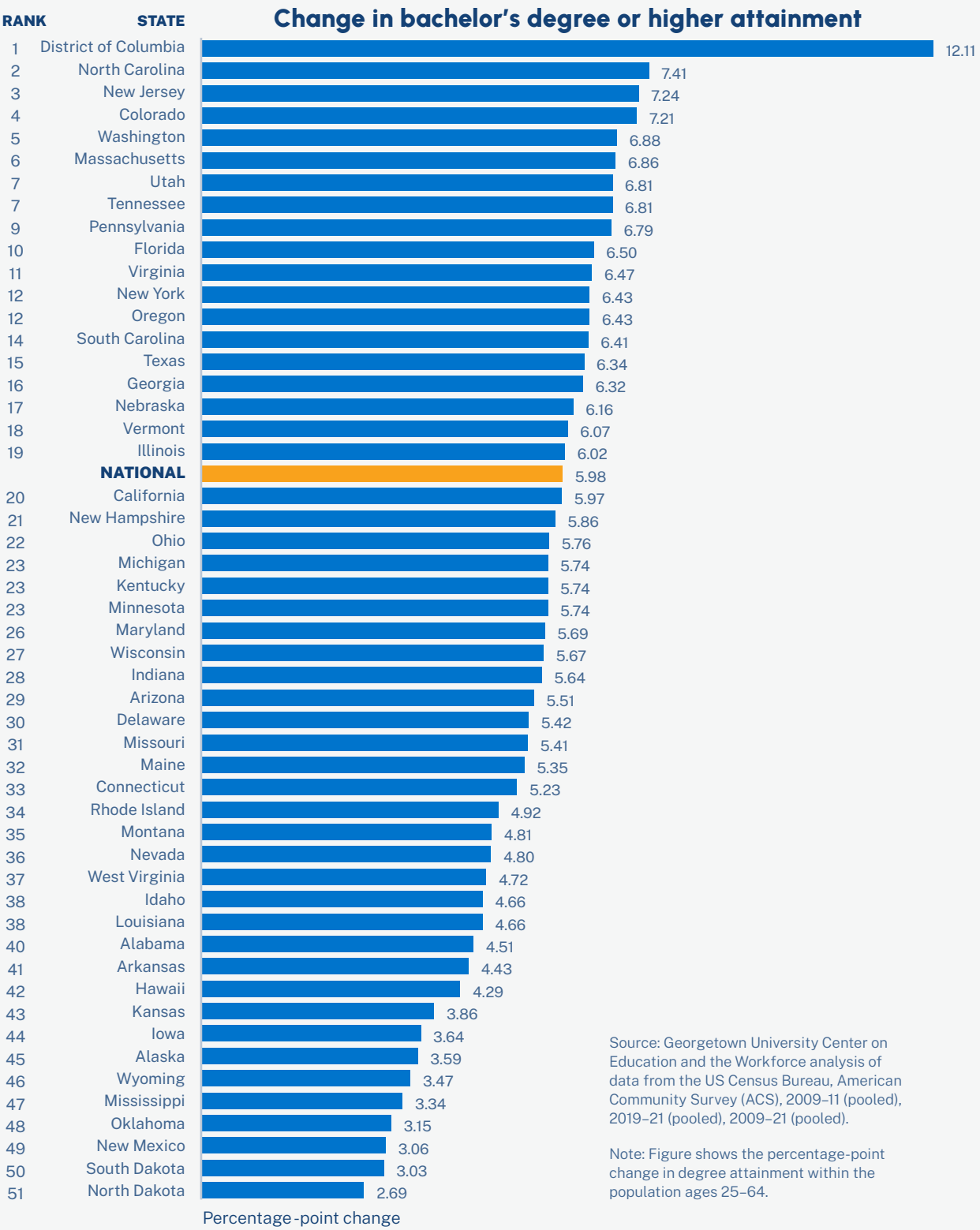


FIGURE 18 (CONTINUED). The District of Columbia had the largest increases in the proportion of the population with an associate's degree or higher or with a bachelor's degree or higher in the decade spanning 2010 to 2020.

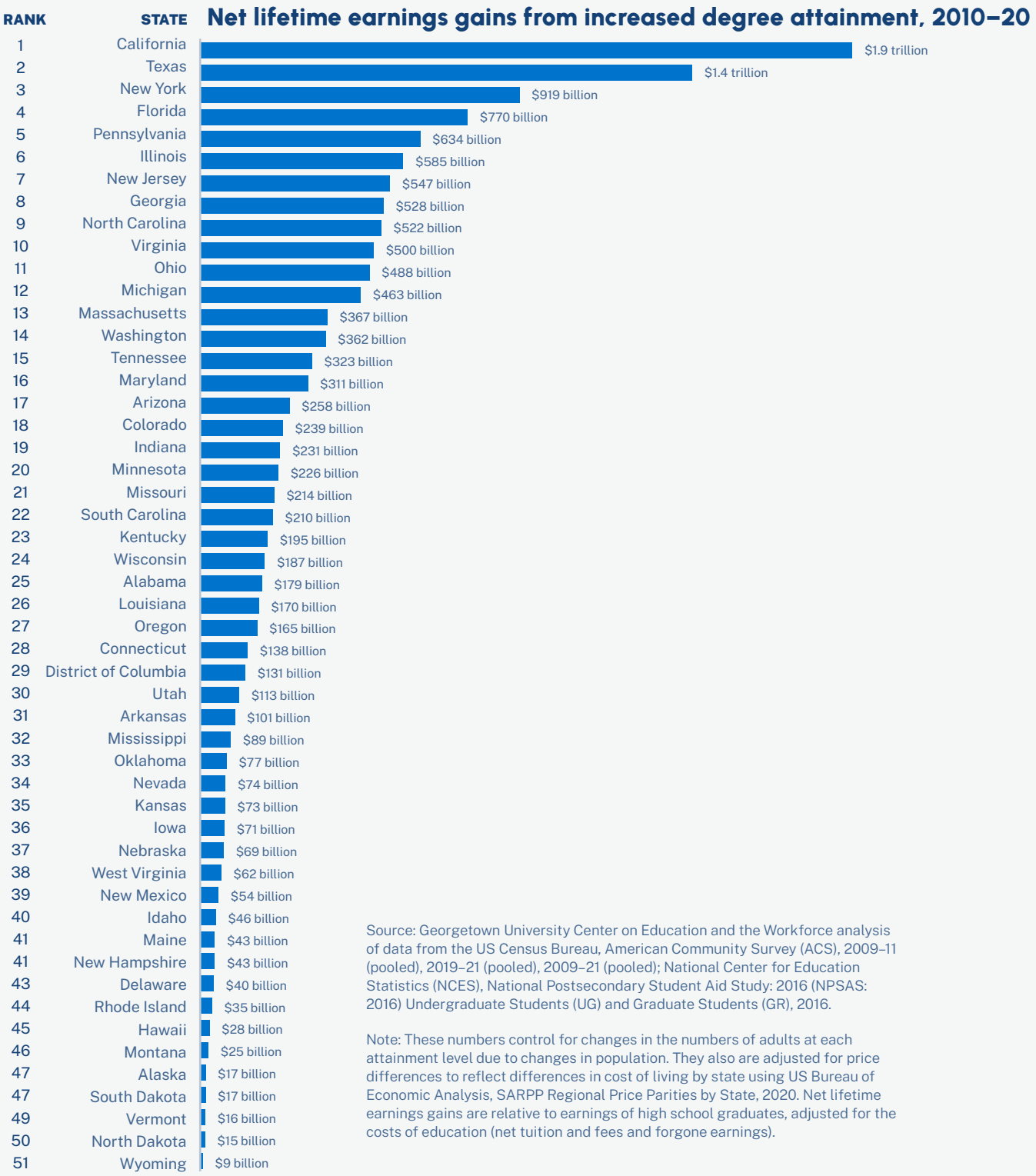


Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled).

Note: Figure shows the percentage-point change in degree attainment within the population ages 25–64.

FIGURE 19. The net lifetime earnings gains from increased attainment range from a high of $1.9 trillion in California to a low of $9 billion in Wyoming.

Net lifetime earnings gains from increased degree attainment, 2010–20



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for changes in the numbers of adults at each attainment level due to changes in population. They also are adjusted for price differences to reflect differences in cost of living by state using US Bureau of Economic Analysis, SARPP Regional Price Parities by State, 2020. Net lifetime earnings gains are relative to earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings).

Black/African American adults experienced college degree attainment gains of up to 10.65 percentage points.

Several states saw substantial gains in the college degree attainment of Black/African American adults. The District of Columbia and Texas were first and second, respectively, in attainment gains among Black/African American adults at the level of an associate's degree or higher and at the level of a bachelor's degree or higher. Minnesota saw the smallest gains for Black/African American adults at both attainment levels (Figure 20).

FIGURE 20. The proportion of Black/African American adults with a college degree rose more than 10 percentage points in the District of Columbia from 2010 to 2020.

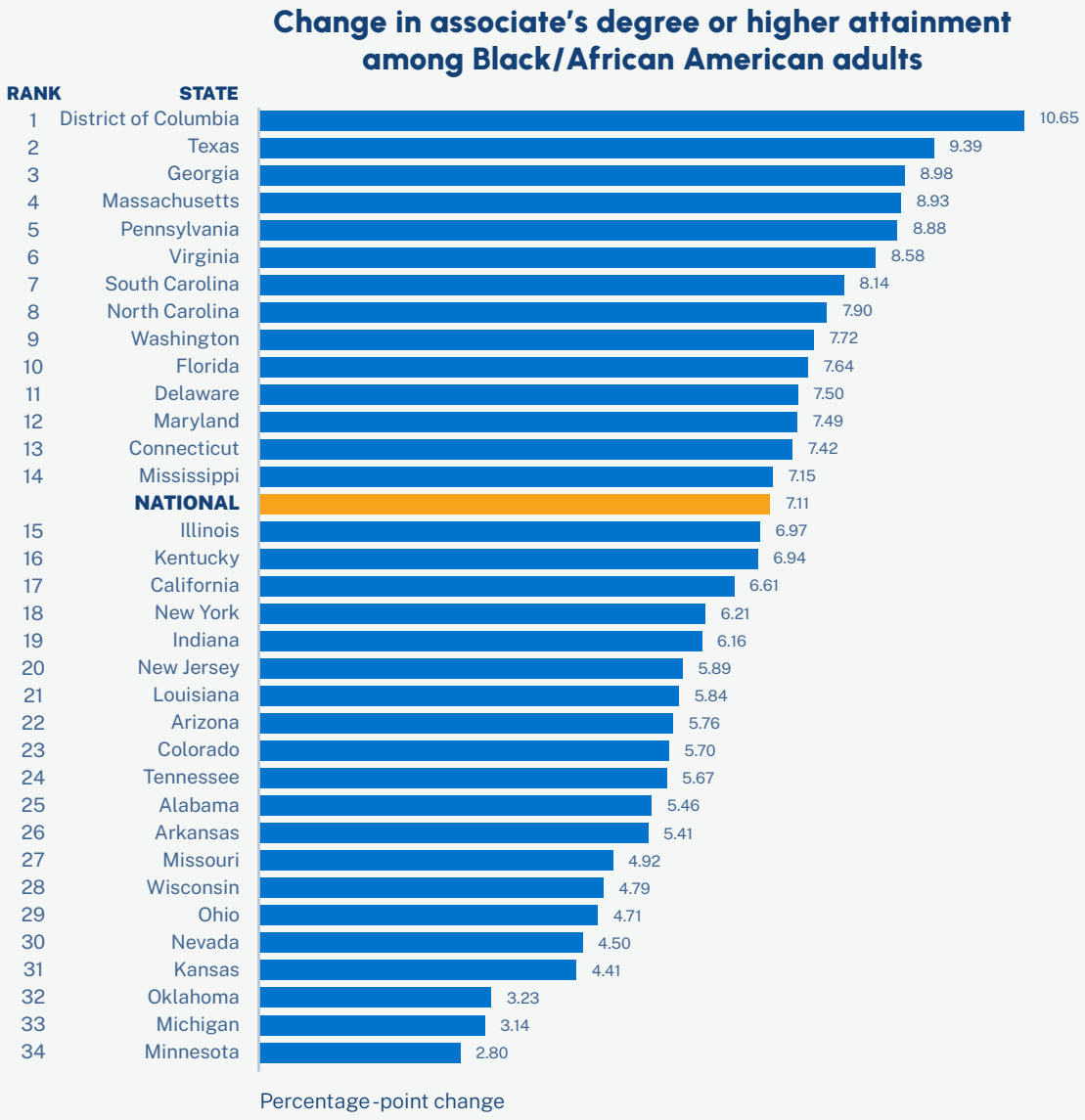
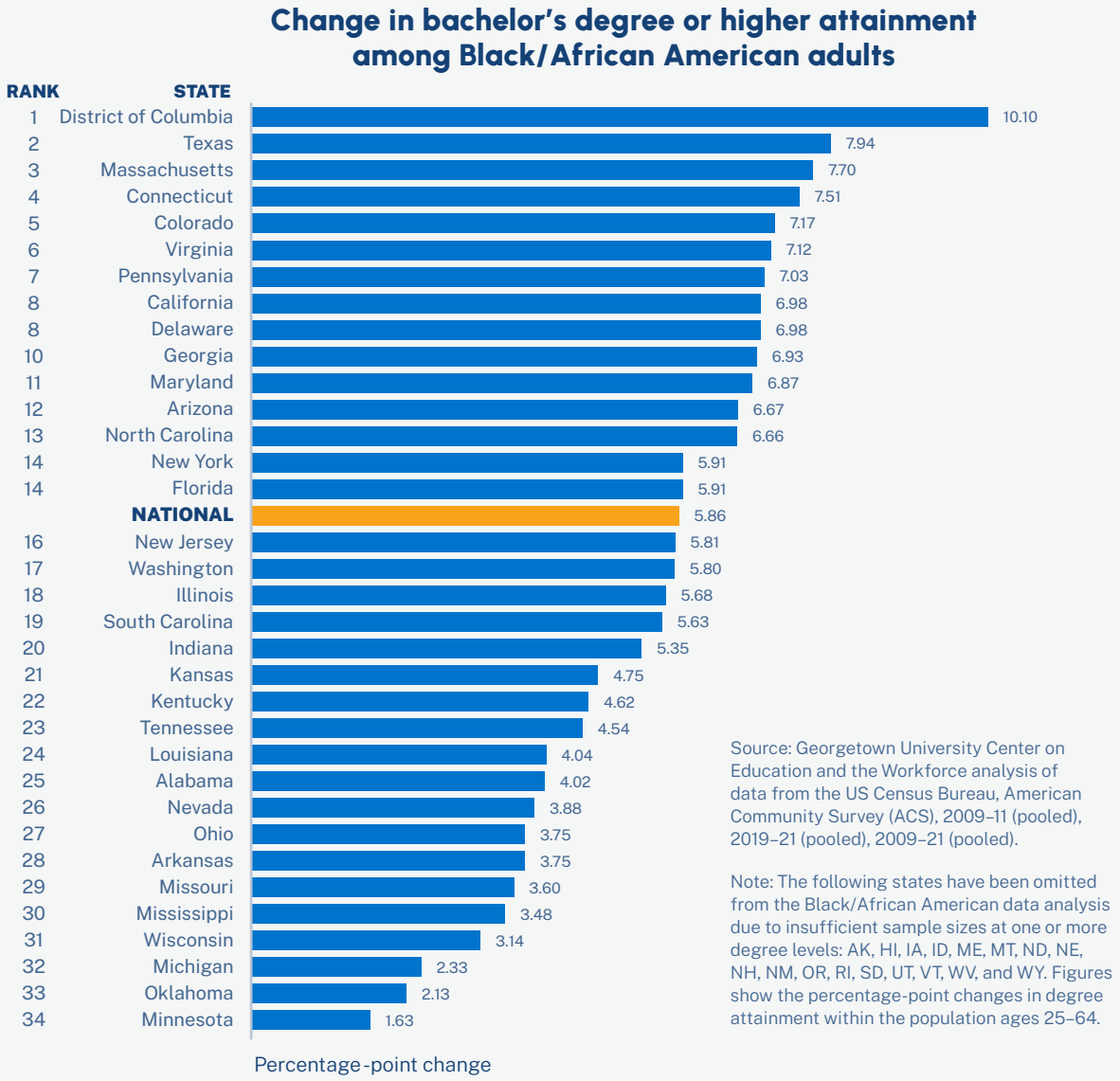


FIGURE 20 (CONTINUED). The proportion of Black/African American adults with a college degree rose more than 10 percentage points in the District of Columbia from 2010 to 2020.



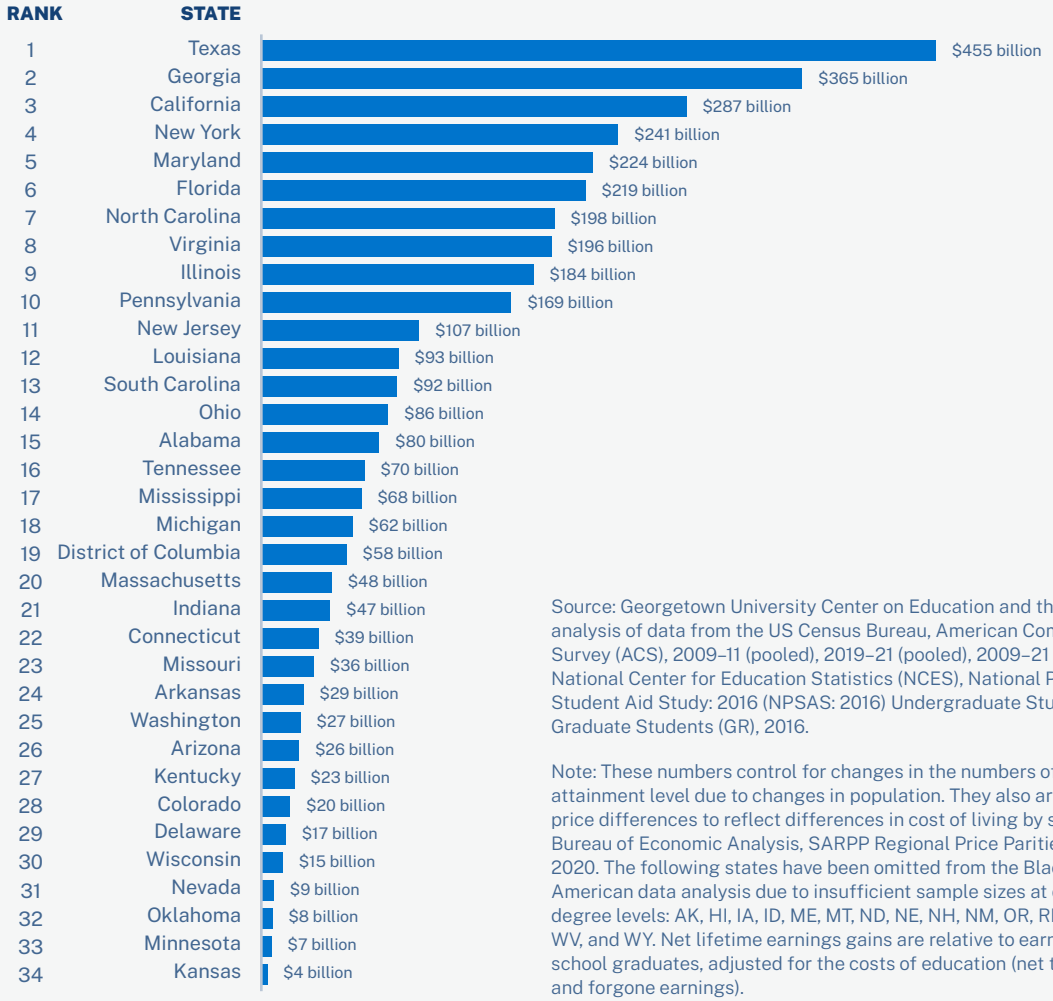
Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled).

Note: The following states have been omitted from the Black/African American data analysis due to insufficient sample sizes at one or more degree levels: AK, HI, IA, ID, ME, MT, ND, NE, NH, NM, OR, RI, SD, UT, VT, WV, and WY. Figures show the percentage-point changes in degree attainment within the population ages 25–64.

The net lifetime earnings gains associated with these attainment gains range widely and largely reflect differences in the Black/African American population size within each state (Figure 21).

FIGURE 21. The net lifetime earnings gains from increases in Black/African American adults' attainment range from $455 billion in Texas to $4 billion in Kansas.

Net lifetime earnings gains from growth in Black/African American adults' attainment, 2010–20



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for changes in the numbers of adults at each attainment level due to changes in population. They also are adjusted for price differences to reflect differences in cost of living by state using US Bureau of Economic Analysis, SARPP Regional Price Parities by State, 2020. The following states have been omitted from the Black/African American data analysis due to insufficient sample sizes at one or more degree levels: AK, HI, IA, ID, ME, MT, ND, NE, NH, NM, OR, RI, SD, UT, VT, WV, and WY. Net lifetime earnings gains are relative to earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings).

Hispanic/Latino adults experienced college degree attainment gains of up to 14.74 percentage points.

Attainment gains for Hispanic/Latino adults were especially large in Minnesota, where the proportion of the Hispanic/Latino adult population with an associate's degree or higher rose by 14.74 percentage points. These gains were dwarfed by gains at the level of a bachelor's degree or higher in the District of Columbia, however. There, the proportion of the Hispanic/Latino population with a bachelor's degree or higher rose by 20.91 percentage points. Among states with a substantial Hispanic/Latino population, Oklahoma experienced the smallest attainment gains for Hispanic/Latino adults (Figure 22).

FIGURE 22. Minnesota, Utah, and Oregon were among the top states in college degree attainment gains among Hispanic/Latino adults from 2010 to 2020.

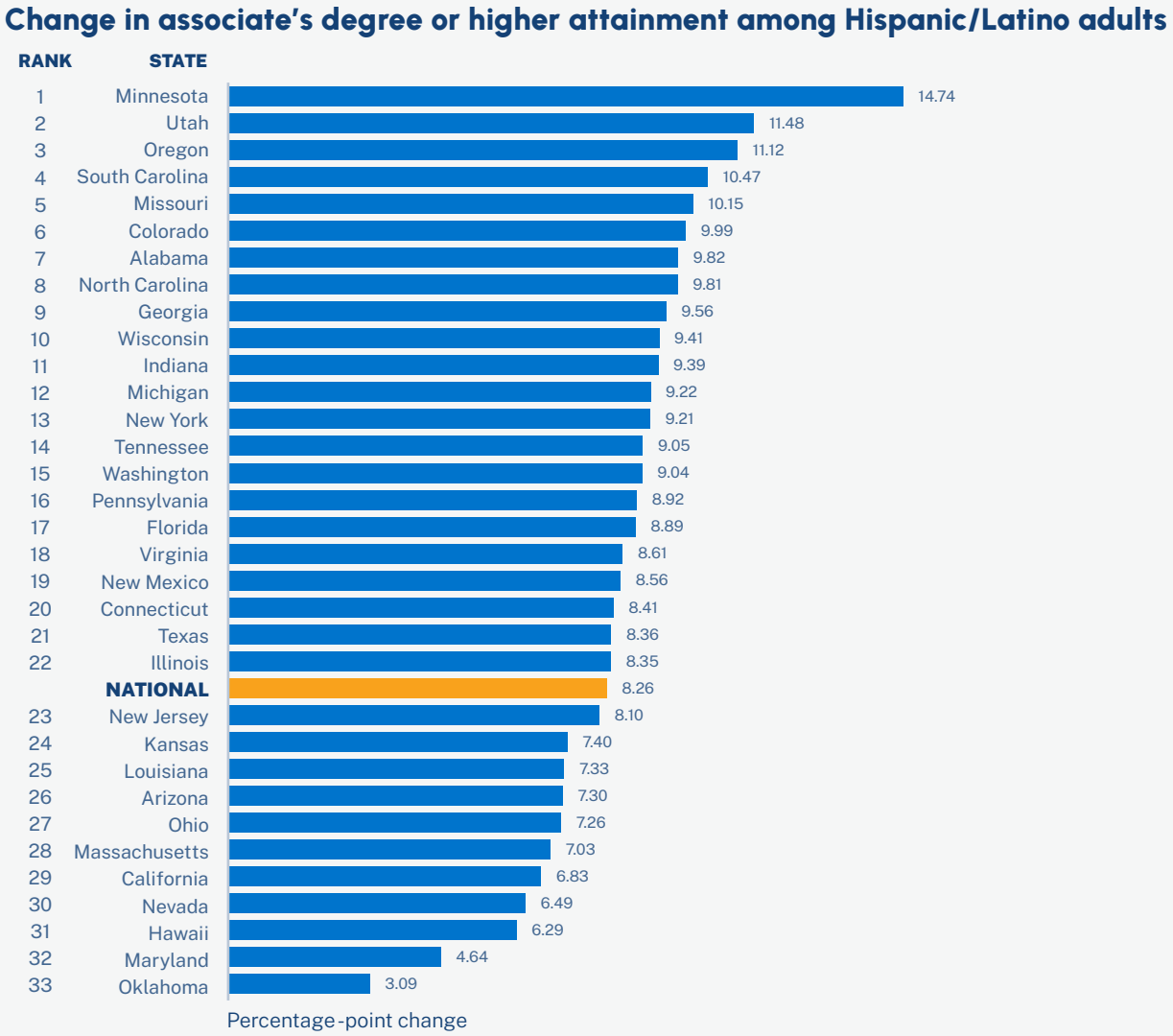
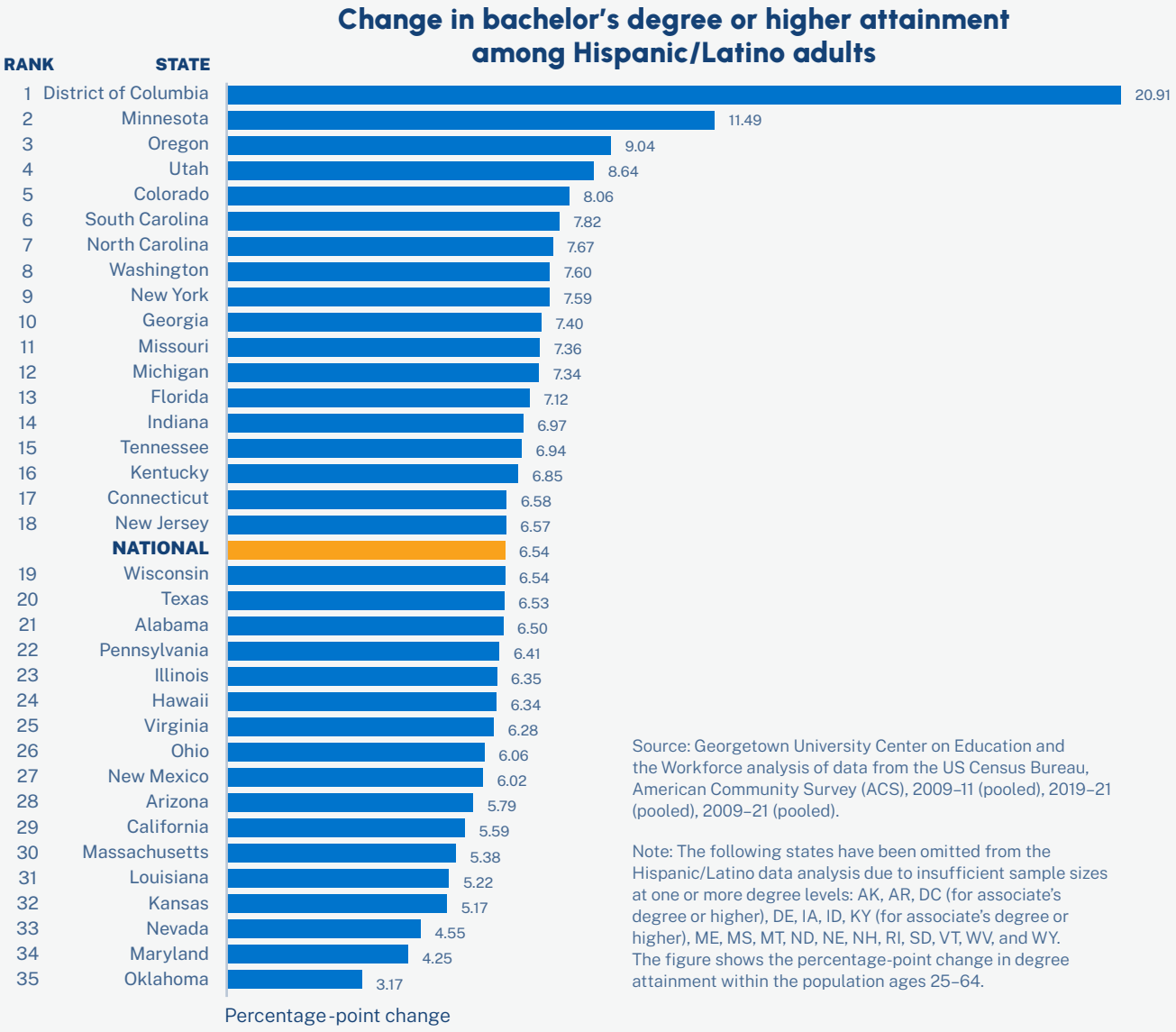


FIGURE 22 (CONTINUED). Minnesota, Utah, and Oregon were among the top states in college degree attainment gains among Hispanic/Latino adults from 2010 to 2020.

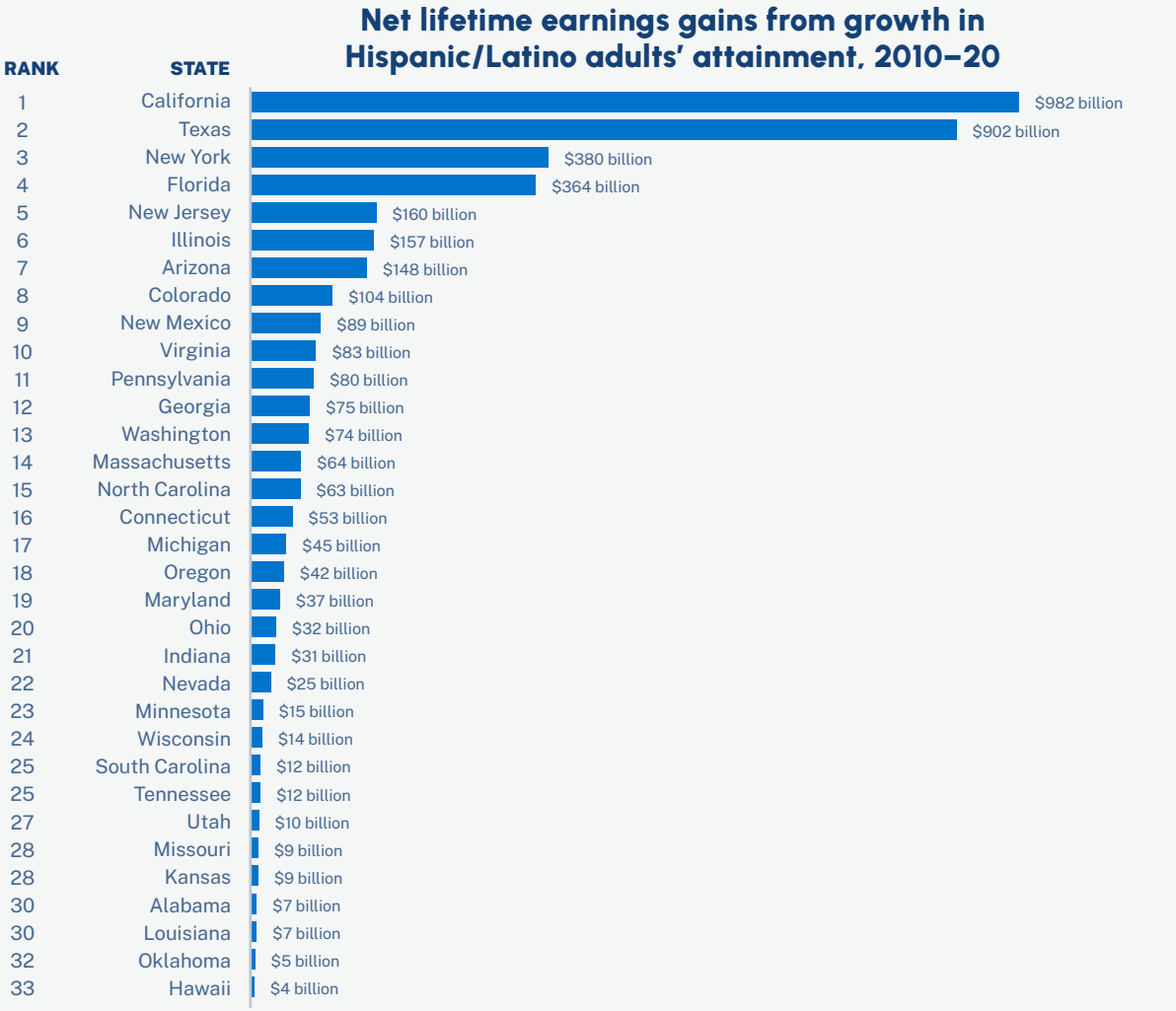


Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled).

Note: The following states have been omitted from the Hispanic/Latino data analysis due to insufficient sample sizes at one or more degree levels: AK, AR, DC (for associate's degree or higher), DE, IA, ID, KY (for associate's degree or higher), ME, MS, MT, ND, NE, NH, RI, SD, VT, WV, and WY. The figure shows the percentage-point change in degree attainment within the population ages 25–64.

California and Texas had the largest net lifetime earnings gains associated with gains in attainment by Hispanic/Latino adults, largely due to these states' having the largest Hispanic/Latino populations in the country (Figure 23).

FIGURE 23. The net lifetime earnings gains from increases in Hispanic/Latino adults' attainment range from $982 billion in California to $4 billion in Hawaii.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for changes in the numbers of adults at each attainment level due to changes in population. They also are adjusted for price differences to reflect differences in cost of living by state using US Bureau of Economic Analysis, SARPP Regional Price Parities by State, 2020. The following states have been omitted from the Hispanic/Latino data analysis due to insufficient sample sizes at one or more degree levels: AK, AR, DC, DE, IA, ID, KY, ME, MS, MT, ND, NE, NH, RI, SD, VT, WV, and WY. Net lifetime earnings gains are relative to earnings of high school graduates, adjusted for the costs of education (net tuition and fees and forgone earnings).

Conclusion

College degrees are a boon to workers and to the American economy. They are associated with increased earnings as well as nonmonetary benefits that improve people's lives and that raise the average standard of living within American society. Between 2010 and 2020, every racial/ethnic group and both men and women profited from gains in college degree attainment. But deep-seated inequalities remain — in part because advantaged groups made gains that were similar to or larger than the gains for disadvantaged groups, and in part because wage gaps among workers at the same degree level persist in the labor market.

These findings highlight the importance of education to our economy while also underscoring the hard work still needed to equalize educational and economic opportunity in the United States. Meanwhile, the growing interest in occupational training indicates that we should start treating non-degree forms of training seriously. We need to craft policies — supported by resources — that treat non-degree training awards, such as certificates and certifications, as valuable forms of human capital development. These investments must be undertaken with caution so we don't repeat our past history of tracking — placing women and students from low-income and marginalized backgrounds on lower-wage tracks, where they will have lower earnings than white men and limited long-term economic opportunity.[140]

Broadly speaking, to achieve educational and economic justice, we will need to pursue all of the following:

1. **Equitable opportunity for youth.** Gaps in opportunity begin at birth. Universal high-quality education from pre-K through high school, access to nourishing food and affordable housing, and networks of community support are all essential to putting young children on the path toward healthy and happy adulthoods.

2. **Equal access to college degrees.** Anyone who wants to go to college and is willing to do the work should have the opportunity to enroll and the support to succeed. Leveling the playing field for college success begins with addressing opportunity gaps in early childhood, but it also requires better college and career counseling, clearer guideposts for college decision-making and financial aid, and substantial improvements to college affordability for students from low-income backgrounds.

140 Among adults with some college credit or a certificate but no degree, white men are the only group with median annual earnings of more than $40,000. Median earnings at this educational attainment level are $35,000 for Hispanic/Latino men, $27,000 for Black/African American men, $22,000 for Black/African American women, and $21,000 for both Hispanic/Latina women and white women, compared with $42,000 for white men.

3. **Equitable participation in high-earning majors.** Much variation in earnings originates in differences at the program level; some degrees simply pay more than others. Occupational segregation is a major driver of racial/ethnic and gender inequality in earnings, and such segregation can be traced back to students' majors. This issue is more than a matter of informed student choice. High-paying majors can be in high demand among students and have high costs for institutions, leading to access that is restricted by competitive prerequisites.[141] Colleges need to be transparent with students about the likely economic outcomes of their programs, and they need to provide academic and non-academic supports for students as they pursue their majors of choice — for example, by adding seats to high-demand majors and rethinking the science and math curricula to encourage more students to pursue STEM fields.

4. **Improved options for workers without college degrees.** While college has undeniable value, not everyone wants to — or should have to — pursue a degree. Restricting opportunities for well-paying jobs to workers with college degrees devalues the important contributions of those who didn't graduate from college, and it also contributes to societal division and class-based resentment. We need more investment in high-quality, short-term credentials and training, such as provisions for short-term Pell Grants, so workers can get the preparation they need to fill societally and economically necessary jobs that don't require college degrees.

5. **Remedies for unequal pay in the labor market.** While unequal pay among workers with the same level of education is partially rooted in occupational segregation, various forms of discrimination also contribute to wage gaps. Workers need to receive equal pay for equal work, regardless of their race/ethnicity or gender.

These five areas of work represent substantial systemic challenges, but with the necessary political will and societal commitments, improvement is within reach. As this report shows, the payoff associated with improving college access and success — while also strengthening non-degree pathways to good jobs and equal treatment in the labor market — would be well worth the effort.

141 Bleemer et al., *Restricted Access to Lucrative College Majors Harms Underrepresented Students Most*, 2023.

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APPENDIX A.
Data Sources and Methodology

Adjustment for Population Change

Our goal for this report was to estimate the net lifetime earnings gains associated with rising educational attainment within the population, which we measured according to changes in the proportions of the population holding various college degrees. We calculated these lifetime earnings gains at the margin, as gains above high school earnings, and accounted for forgone earnings during enrollment and the costs of education.

To calculate the changes in the proportion of the population with college degrees, we compared the distribution of the population by education level in 2010 (based on 2009–11 pooled data from the American Community Survey, or ACS) to the distribution in 2020 (based on 2019–21 pooled data). We found that the proportions of the population with associate's degrees, bachelor's degrees, and graduate degrees were higher in 2020 than in 2010, and we sought to quantify the economic benefits of having higher levels of educational attainment within the population.

Because we assessed college degree attainment in terms of the proportions of the population holding various degrees, not the number of degrees, we controlled for the changes in the overall population. This ensured that our estimates reflected the benefits associated with the increased **proportion** of the population with college degrees, rather than those associated with an increased **number** of people with degrees due to population growth. For example, if the overall population increased and the number of people with and without college degrees grew at the same rate, the total number with college degrees would increase, but the proportion with college degrees would stay the same. In this case, there would be no gain in the overall proportion of people with college degrees. Alternatively, if the total number of people declined while the number of people with degrees did not change, the proportion with college degrees would increase without any corresponding increase in the number of degrees. In this case, there would be no gain in the number of degrees, even though the overall level of education within the population increased.

To estimate the earnings benefits associated with the increased proportion of the population with college degrees, we calculated the number of people whose new degree attainment was associated with a change in the proportion of the population with college degrees. To do this, we decomposed the change in college degree attainment into two components: the share associated with population change and the share associated with attainment change. We then used the component associated with attainment change to calculate the net lifetime earnings gains associated with increases in attainment. This decomposition approach is common in fields ranging from economic geography to education.[1] Conceptually, it is comparable to calculating the number of new people with degrees if the percentage of people with degrees increased while the population held steady.

Table A1 shows the observed changes in the numbers of people at each level of education and the population-adjusted changes that we used to estimate the net lifetime earnings gains associated with increases in the proportion of the population with college degree attainment.

1 Das Gupta, *Standardization and Decomposition of Rates,* 1993; Chmura Economics & Analytics, *A Literature Review and Decomposition Analysis*, 2022.

TABLE A1. Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

	LESS THAN HIGH SCHOOL		
	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**-3,087**	**-4,039**
	American Indian/Alaska Native	-25	-19
	Asian/Asian American	30	-258
	Black/African American	-600	-813
	Hispanic/Latino	-710	-3,045
	Native Hawaiian/Pacific Islander	4	-3
	Other/Multiracial	175	-171
	White	-1,961	-1,533
MEN	**All**	**-1,553**	**-5,153**
	American Indian/Alaska Native	-10	-10
	Asian/Asian American	30	-96
	Black/African American	-282	-424
	Hispanic/Latino	-376	-1,601
	Native Hawaiian/Pacific Islander	1	-3
	Other/Multiracial	101	-85
	White	-1,016	-801
WOMEN	**All**	**-1,533**	**-4,746**
	American Indian/Alaska Native	-15	-10
	Asian/Asian American	1	-161
	Black/African American	-317	-395
	Hispanic/Latina	-335	-1,437
	Native Hawaiian/Pacific Islander	3	-1
	Other/Multiracial	74	-86
	White	-945	-738

TABLE A1 (CONTINUED). Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

	HIGH SCHOOL DIPLOMA/GED		
	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**-1,155**	**-3,218**
	American Indian/Alaska Native	13	24
	Asian/Asian American	147	-220
	Black/African American	336	-133
	Hispanic/Latino	2,145	379
	Native Hawaiian/Pacific Islander	23	0
	Other/Multiracial	708	-90
	White	-4,527	-2,846
MEN	**All**	**588**	**-1,063**
	American Indian/Alaska Native	16	17
	Asian/Asian American	97	-72
	Black/African American	341	36
	Hispanic/Latino	1,228	326
	Native Hawaiian/Pacific Islander	15	4
	Other/Multiracial	394	-38
	White	-1,502	-723
WOMEN	**All**	**-1,744**	**-5,075**
	American Indian/Alaska Native	-3	6
	Asian/Asian American	50	-147
	Black/African American	-5	-181
	Hispanic/Latina	917	56
	Native Hawaiian/Pacific Islander	8	-4
	Other/Multiracial	315	-53
	White	-3,025	-2,133

TABLE A1 (CONTINUED). Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

SOME COLLEGE, NO DEGREE

	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**-2,597**	**-4,287**
	American Indian/Alaska Native	-34	-25
	Asian/Asian American	51	-279
	Black/African American	-160	-554
	Hispanic/Latino	1,291	114
	Native Hawaiian/Pacific Islander	5	-12
	Other/Multiracial	668	-223
	White	-4,418	-3,007
MEN	**All**	**-734**	**-3,109**
	American Indian/Alaska Native	-9	-8
	Asian/Asian American	28	-139
	Black/African American	29	-184
	Hispanic/Latino	675	129
	Native Hawaiian/Pacific Islander	0	-7
	Other/Multiracial	348	-68
	White	-1,805	-1,196
WOMEN	**All**	**-1,863**	**-5,151**
	American Indian/Alaska Native	-25	-15
	Asian/Asian American	23	-141
	Black/African American	-189	-364
	Hispanic/Latina	616	-18
	Native Hawaiian/Pacific Islander	5	-5
	Other/Multiracial	320	-154
	White	-2,613	-1,809

TABLE A1 (CONTINUED). Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

	ASSOCIATE'S DEGREE		
	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**1,941**	**1,295**
	American Indian/Alaska Native	5	8
	Asian/Asian American	123	-47
	Black/African American	381	263
	Hispanic/Latino	901	530
	Native Hawaiian/Pacific Islander	8	3
	Other/Multiracial	353	38
	White	169	744
MEN	**All**	**940**	**1,362**
	American Indian/Alaska Native	3	3
	Asian/Asian American	59	-17
	Black/African American	169	112
	Hispanic/Latino	415	257
	Native Hawaiian/Pacific Islander	2	0
	Other/Multiracial	155	17
	White	137	359
WOMEN	**All**	**1,000**	**1,493**
	American Indian/Alaska Native	3	6
	Asian/Asian American	64	-29
	Black/African American	212	155
	Hispanic/Latina	486	271
	Native Hawaiian/Pacific Islander	6	2
	Other/Multiracial	199	21
	White	32	394

TABLE A1 (CONTINUED). Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

	BACHELOR'S DEGREE		
	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**7,100**	**5,632**
	American Indian/Alaska Native	4	7
	Asian/Asian American	913	142
	Black/African American	789	602
	Hispanic/Latino	1,925	1,310
	Native Hawaiian/Pacific Islander	13	7
	Other/Multiracial	902	266
	White	2,554	3,907
MEN	**All**	**3,097**	**4,976**
	American Indian/Alaska Native	-2	-2
	Asian/Asian American	425	70
	Black/African American	360	263
	Hispanic/Latino	865	596
	Native Hawaiian/Pacific Islander	5	2
	Other/Multiracial	412	112
	White	1,032	1,614
WOMEN	**All**	**4,003**	**6,910**
	American Indian/Alaska Native	6	9
	Asian/Asian American	488	73
	Black/African American	428	343
	Hispanic/Latina	1,060	711
	Native Hawaiian/Pacific Islander	8	4
	Other/Multiracial	491	155
	White	1,521	2,297

TABLE A1 (CONTINUED). Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

	GRADUATE DEGREE		
	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**5,439**	**4,617**
	American Indian/Alaska Native	4	5
	Asian/Asian American	1,204	661
	Black/African American	729	635
	Hispanic/Latino	982	711
	Native Hawaiian/Pacific Islander	8	6
	Other/Multiracial	539	179
	White	1,973	2,734
MEN	**All**	**1,865**	**2,987**
	American Indian/Alaska Native	1	1
	Asian/Asian American	556	254
	Black/African American	239	196
	Hispanic/Latino	413	293
	Native Hawaiian/Pacific Islander	4	3
	Other/Multiracial	228	63
	White	424	747
WOMEN	**All**	**3,574**	**6,569**
	American Indian/Alaska Native	3	4
	Asian/Asian American	648	405
	Black/African American	490	443
	Hispanic/Latina	569	417
	Native Hawaiian/Pacific Islander	4	3
	Other/Multiracial	311	117
	White	1,549	1,990

TABLE A1 (CONTINUED). Observed changes and population-growth-adjusted changes in educational attainment by race and gender nationwide, 2010–20

ALL COLLEGE DEGREES (ASSOCIATE'S, BACHELOR'S, AND GRADUATE)

	Race/ethnicity	Observed change (in thousands)	Population-growth-adjusted change (in thousands)
ALL ADULTS	**All**	**14,480**	**11,543**
	American Indian/Alaska Native	13	20
	Asian/Asian American	2,241	756
	Black/African American	1,899	1,500
	Hispanic/Latino	3,808	2,552
	Native Hawaiian/Pacific Islander	29	15
	Other/Multiracial	1,795	484
	White	4,695	7,386
MEN	**All**	**5,903**	**9,325**
	American Indian/Alaska Native	1	2
	Asian/Asian American	1,041	307
	Black/African American	769	572
	Hispanic/Latino	1,692	1,147
	Native Hawaiian/Pacific Islander	11	5
	Other/Multiracial	795	192
	White	1,593	2,720
WOMEN	**All**	**8,577**	**14,971**
	American Indian/Alaska Native	11	19
	Asian/Asian American	1,200	448
	Black/African American	1,130	940
	Hispanic/Latina	2,115	1,399
	Native Hawaiian/Pacific Islander	18	10
	Other/Multiracial	1,000	293
	White	3,102	4,680

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled).

Note: These numbers are for adults ages 25-64. The numbers for each racial/ethnic group do not sum to the totals across all groups because the aggregate numbers were calculated based on the aggregate populations (all, men, and women) rather than by summing the group numbers. Other values may not sum to totals due to rounding.

We applied the same series of calculations to each race/ethnicity and gender group at the national and state level.

Lifetime Earnings at Each Level of College Degree Attainment

Our starting point for estimating the benefits of higher educational attainment was lifetime earnings. Higher levels of education are associated with higher median earnings. For example, the median annual earnings for all workers ages 25–64 with a high school diploma are $21,000, while the median annual earnings for workers ages 25–64 with a bachelor's degree are $50,000. We decided that individual earnings gains over the course of a full career were the proper measure of the economic benefits of higher educational attainment to appropriately contextualize the costs. In other words, we view education as a long-term investment whose substantial up-front costs should be considered in proportion to the potential payoff over the entire course of a career.

College degree attainment is also associated with higher labor-force participation and lower likelihood of unemployment.[2] To account for the differences in the likelihood of employment when estimating lifetime earnings at the population level, we included $0 earnings for those who are not working.

To calculate lifetime earnings, we constructed a 13-year pooled data set from the ACS from 2009 to 2021 consisting of 25-to-64-year-olds. We inflation-adjusted reported earnings to 2021 dollars using the Bureau of Labor Statistics' Consumer Price Index retroactive series using current methods (R-CPI-U-RS). We then computed lifetime earnings by constructing an age-earnings profile of the overall population by degree level and by group of interest, such as Hispanic/Latino adults with a bachelor's degree. We constructed two types of age-earnings profiles: (1) single-year ages and (2) five-year age groups from ages 25 to 64. We calculated lifetime earnings as the sum of the median earnings over the 40 years. We did not calculate the present value of future earnings by applying a discount rate — that is, we did not account for the time value of money — so the gains presented should be thought of as occurring over years to come and not what they are worth today. For age-earnings profiles constructed using five-year age groups, we multiplied the median earnings for each age group by five before computing the sum. We used this alternate lifetime earnings calculation for population groups that had small sample sizes at specific ages. This approach smooths out large earnings deviations that may result from small cell sizes when using single-year ages.

National lifetime earnings

Lifetime earnings for all population groups at the national level were computed using single-year age earnings profiles (Table A2), with two exceptions: lifetime earnings for Native Hawaiian/Pacific Islander adults and American Indian/Alaska Native adults were constructed using the five-year age group earnings profiles.

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2 US Department of Education, Table 501.10 of the *Digest of Education Statistics*, 2021.

State lifetime earnings

Lifetime earnings for each education level in each state were computed using single-year age earnings profiles unless the total sample size over the 40-year work life was below 4,000 (unweighted), in which case we used five-year age group bins. This sample-size threshold corresponds to requiring an average of 100 observations per year of work.

Population groups at the state level

For disaggregated population groups — classified by sex and race/ethnicity — we approximate lifetime earnings at the state level by applying an adjustment to the overall state lifetime earnings at the specified degree level. This adjustment corresponds to differences between the median annual earnings of that group within the state and the overall median annual earnings in the state. For example, if women with bachelor's degrees have median annual earnings that are 90 percent of the overall state median annual earnings for all bachelor's degree holders, then we assign to women with bachelor's degrees 90 percent of the lifetime earnings of bachelor's degree holders in that state.

Groups with sample sizes of 75 observations or less were excluded from all our analyses. Since, as we establish in the report, different college degree levels have fundamentally different net lifetime earnings and should not be thought of as substitutes for each other, if a group was excluded at any one degree level (associate's, bachelor's, or graduate), it was also excluded at the aggregate (associate's degree or higher) level.

TABLE A2. Individual median lifetime earnings by educational attainment for all adults at the national level, adjusted for the likelihood of working

Educational attainment	Median lifetime earnings
Less than high school	$284,000
High school diploma/GED	$825,000
Some college	$1,120,000
Associate's degree	$1,386,000
Bachelor's degree	$2,003,000
Graduate degree	$2,785,000

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled).

Costs of Education

To accurately capture the benefits of increased college degree attainment, we adjusted the lifetime earnings to account for the average costs of education (both direct costs and forgone earnings while enrolled).

We calculated the median **direct costs** of college degree attainment based on the median net tuition and fees (tuition and fees minus all grant aid). We calculated these separately for two-year degrees, four-year degrees, and graduate degrees. We also calculated these cost numbers for each racial/ethnic group, as well as for men and women, to account for differences in the costs of education related to differences in where students in different groups enroll. The annual net tuition and fees numbers are based on data from the National Postsecondary Student Aid Study: 2016 (NPSAS:2016), Undergraduate Students (UG) and Graduate Students (GR). All amounts were inflation adjusted to 2021 dollars using the Bureau of Labor Statistics' Consumer Price Index retroactive series using current methods (R-CPI-U-RS). Because we are not able to identify where individuals obtained their degrees, we did not calculate the costs of attainment separately by state. We do not expect this to have a substantial impact on our overall results because the small cost variations by state would not have a significant impact on net lifetime earnings.

Based on the median number of months enrolled for students who attained associate's and bachelor's degrees as reported in the Beginning Postsecondary Students Longitudinal Study: 2012/2017 (BPS), we assumed that a person with an associate's degree took three years to attain the degree and a person with a bachelor's degree took five years. Based on the median number of months enrolled for students who attained graduate degrees as reported in the Baccalaureate and Beyond Longitudinal Study: 2008/2018 (B&B), we assumed that a person with a graduate degree took an additional three years to complete that degree after completing a bachelor's degree. We multiplied the annual net tuition and fees by these numbers to estimate the direct costs for each degree (Table A3).

TABLE A3. Estimated cumulative net tuition and fees for degree attainment by race/ethnicity and gender at the national level

	Race/ethnicity	Associate's degree	Bachelor's degree	Graduate degree (total including bachelor's degree)
ALL	**All**	**$2,000**	**$25,000**	**$24,000 ($49,000)**
	American Indian/Alaska Native	$2,000*	$12,000	$24,000 ($35,000)*
	Asian/Asian American	$3,000	$39,000	$41,000 ($80,000)
	Black/African American	$2,000	$16,000	$22,000 ($38,000)
	Hispanic/Latino	$1,000	$13,000	$23,000 ($36,000)
	Native Hawaiian/Pacific Islander	$2,000*	$19,000	$24,000 ($43,000)
	Other/Multiracial	$1,000	$23,000	$24,000 ($47,000)
	White	$3,000	$32,000	$21,000 ($52,000)
MEN	**All**	**$2,000**	**$28,000**	**$25,000 ($52,000)**
	American Indian/Alaska Native	$2,000*	$12,000*	$24,000 ($35,000)*
	Asian/Asian American	$3,000	$39,000	$42,000 ($81,000)
	Black/African American	$2,000	$17,000	$19,000 ($37,000)
	Hispanic/Latino	$1,000	$13,000	$21,000 ($34,000)
	Native Hawaiian/Pacific Islander	$2,000*	$31,000	$24,000 ($54,000)
	Other/Multiracial	$2,000	$28,000	$23,000 ($50,000)
	White	$3,000	$33,000	$22,000 ($55,000)
WOMEN	**All**	**$2,000**	**$24,000**	**$23,000 ($47,000)**
	American Indian/Alaska Native	$2,000*	$14,000	$24,000 ($38,000)*
	Asian/Asian American	$3,000	$39,000	$41,000 ($80,000)
	Black/African American	$2,000	$15,000	$24,000 ($39,000)
	Hispanic/Latina	$1,000	$13,000	$24,000 ($38,000)
	Native Hawaiian/Pacific Islander	$2,000*	$19,000*	$24,000 ($43,000)*
	Other/Multiracial	$1,000	$22,000	$26,000 ($48,000)
	White	$2,000	$30,000	$20,000 ($50,000)

Source: Georgetown University Center on Education and the Workforce analysis of data from the National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016; Beginning Postsecondary Students Longitudinal Study (BPS), 2012–17; and Baccalaureate and Beyond Longitudinal Study (B&B), 2008–18.

Note: Net tuition and fees are determined by subtracting all grant aid from published tuition and fees. These numbers include students whose net tuition and fees were $0.

*Due to insufficient sample sizes, separate values for annual net tuition and fees could not be obtained for the following groups: for associate's degrees — (1) American Indian/Alaska Native men, women, and overall and (2) Native Hawaiian/Pacific Islander men, women, and overall; and for graduate degrees — American Indian/Alaska Native men, women, and overall. In these cases, annual net tuition and fees values for all adults were used instead of group-specific estimates. In addition, due to insufficient sample sizes, separate estimates could not be obtained for the following groups (substitution indicated in parentheses): American Indian/Alaska Native men with bachelor's degrees (substitution: value for American Indian/Alaska Native bachelor's degrees overall); Native Hawaiian/Pacific Islander women with bachelor's degrees (substitution: value for Native Hawaiian/Pacific Islander bachelor's degrees overall); and Native Hawaiian/Pacific Islander women with graduate degrees (substitution: value for Native Hawaiian/Pacific Islander graduate degrees overall). Values may not sum to totals due to rounding.

Forgone earnings are the earnings a person forgoes by being absent from or less engaged with the labor market while pursuing their education. Based on the time-to-degree estimates above, we calculated the forgone earnings for a person with an associate's degree as three times the median annual earnings for adults with a high school diploma; for a person with a bachelor's degree as five times the median annual earnings for adults with a high school diploma; and for a person with a graduate degree as five times the median annual earnings for adults with a high school diploma plus three times the median annual earnings for adults with a bachelor's degree (Table A4).

TABLE A4. Estimated forgone earnings for degree attainment by race/ethnicity and gender at the national level

	Race/ethnicity	Associate's degree	Bachelor's degree	Graduate degree*
ALL	**All**	**$64,000**	**$107,000**	**$259,000**
	American Indian/Alaska Native	$29,000	$48,000	$170,000
	Asian/Asian American	$56,000	$94,000	$239,000
	Black/African American	$46,000	$77,000	$212,000
	Hispanic/Latino	$65,000	$108,000	$237,000
	Native Hawaiian/Pacific Islander	$68,000	$113,000	$250,000
	Other/Multiracial	$52,000	$86,000	$225,000
	White	$69,000	$115,000	$274,000
MEN	**All**	**$87,000**	**$145,000**	**$339,000**
	American Indian/Alaska Native	$40,000	$66,000	$208,000
	Asian/Asian American	$78,000	$130,000	$326,000
	Black/African American	$51,000	$85,000	$229,000
	Hispanic/Latino	$86,000	$143,000	$299,000
	Native Hawaiian/Pacific Islander	$87,000	$146,000	$317,000
	Other/Multiracial	$74,000	$124,000	$296,000
	White	$99,000	$165,000	$374,000
WOMEN	**All**	**$41,000**	**$68,000**	**$188,000**
	American Indian/Alaska Native	$18,000	$30,000	$142,000
	Asian/Asian American	$36,000	$61,000	$165,000
	Black/African American	$43,000	$72,000	$201,000
	Hispanic/Latina	$38,000	$64,000	$169,000
	Native Hawaiian/Pacific Islander	$44,000	$73,000	$189,000
	Other/Multiracial	$32,000	$54,000	$170,000
	White	$41,000	$69,000	$192,000

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled).

Note: *We used the median earnings for adults with a high school diploma during the period of undergraduate enrollment and the median earnings for adults with a bachelor's degree during the period of graduate enrollment.

We calculated forgone earnings for all adults and separately for each demographic group, nationally and by state, and used these numbers in net lifetime earnings calculations.

Marginal gains relative to lifetime earnings with a high school diploma

To estimate the marginal individual net lifetime earnings gains associated with the increases in college degree attainment, we subtracted the median earnings for adults ages 25–64 with a high school diploma ($825,000 for all adults at the national level) from the cost-adjusted lifetime earnings of degree holders. To estimate the additional gains for graduate degree holders, we subtracted the median earnings of adults ages 25–64 with a bachelor's degree ($2 million for all adults at the national level) from the cost-adjusted lifetime earnings of graduate degree holders.

At the national level, the net lifetime earnings gains are $495,000 for an associate's degree, $1 million for a bachelor's degree, and $1.7 million for a graduate degree. The marginal gains of a graduate degree are composed of the net gains related to earning a bachelor's degree ($1 million) plus the additional gains related to earning a graduate degree ($607,000).[3]

Aggregate net lifetime earnings gains

To calculate the aggregate net lifetime earnings gains, we scaled the marginal net lifetime earnings gains from the individual level to the population level by multiplying by the population-adjusted changes at each degree level. In some states, the population-adjusted attainment declined at a specific degree level. In these cases, the aggregate net lifetime earnings gains for that level are negative.

The aggregate net lifetime earnings in Figures 19, 21, and 23 have been adjusted to account for cost-of-living differences using Bureau of Economic Analysis Regional Price Parities to allow for better cross-state comparisons when ranking. The aggregate net lifetime earnings gains shown in the state fact sheets reflect the unadjusted amounts to allow for easier interpretation within each state's context (Table A5).

3 Numbers do not sum due to rounding.

TABLE A5. Net lifetime earnings gains from increased degree attainment, 2010–20

	Unadjusted net lifetime earning gains (in billions)	Net lifetime earning gains adjusted for cost of living differences by state (in billions)
Alabama	$158	$179
Alaska	$18	$17
Arizona	$249	$258
Arkansas	$90	$101
California	$2,097	$1,876
Colorado	$246	$239
Connecticut	$142	$138
Delaware	$39	$40
District of Columbia	$146	$131
Florida	$781	$770
Georgia	$506	$528
Hawaii	$31	$28
Idaho	$42	$46
Illinois	$593	$585
Indiana	$215	$231
Iowa	$64	$71
Kansas	$67	$73
Kentucky	$173	$195
Louisiana	$155	$170
Maine	$42	$43
Maryland	$330	$311
Massachusetts	$391	$367
Michigan	$436	$463
Minnesota	$222	$226
Mississippi	$77	$89
Missouri	$196	$214
Montana	$23	$25
Nebraska	$63	$69
Nevada	$71	$74
New Hampshire	$44	$43
New Jersey	$596	$547
New Mexico	$49	$54
New York	$1,006	$919
North Carolina	$490	$522
North Dakota	$13	$15
Ohio	$451	$488
Oklahoma	$69	$77
Oregon	$170	$165

TABLE A5 (CONTINUED). Net lifetime earnings gains from increased degree attainment, 2010–20

	Unadjusted net lifetime earning gains (in billions)	Net lifetime earning gains adjusted for cost of living differences by state (in billions)
Pennsylvania	$611	$634
Rhode Island	$36	$35
South Carolina	$196	$210
South Dakota	$15	$17
Tennessee	$293	$323
Texas	$1,395	$1,416
Utah	$107	$113
Vermont	$16	$16
Virginia	$511	$500
Washington	$395	$362
West Virginia	$56	$62
Wisconsin	$174	$187
Wyoming	$9	$9

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau, American Community Survey (ACS), 2009–11 (pooled), 2019–21 (pooled), 2009–21 (pooled); National Center for Education Statistics (NCES), National Postsecondary Student Aid Study: 2016 (NPSAS: 2016) Undergraduate Students (UG) and Graduate Students (GR), 2016.

Note: These numbers control for changes in the numbers of adults at each attainment level due to changes in population. The adjusted numbers control for price differences to reflect differences in cost of living by state using US Bureau of Economic Analysis, SARPP Regional Price Parities by State, 2020. Net lifetime earnings gains are relative to earnings of high school graduates, adjusted for the costs of education (net tuition and fees and foregone earnings).

Gaps in college degree attainment and earnings

To assess how gains in each group's level of college degree attainment affected attainment gaps among groups, we compared the proportions of adults ages 25–64 of each racial/ethnic group holding associate's degrees, bachelor's degrees, and graduate degrees to the proportions of white adults holding those degrees. We used the percentage-point differences between the two to measure the racial/ethnic gaps in educational attainment at the beginning and end of the period. For race/ethnicity-by-gender comparisons among groups, we used white men as the comparison group for men of all other races/ethnicities and white women as the comparison group for women of all other races/ethnicities.

To measure the racial/ethnic earnings gaps ratios, we used the lifetime earnings for each group at each college degree level and divided by the lifetime earnings of white men at the same degree level. We also estimated earnings gaps ratios for women at each college degree level within each racial/ethnic group relative to men in the same racial/ethnic group at the same college degree level.

Counterfactual educational attainment and earnings scenarios

To provide a general idea of the earnings gains that would have been possible if gaps in college education and earnings had closed during the period, we developed two counterfactual scenarios, with the second building on the first.

In the first scenario, we estimated what the net lifetime earnings gains would be if adults in all racial/ethnic groups had reached the same levels of college degree attainment as white adults. For this counterfactual, we took the total population of adults ages 25–64 for each demographic group and applied the educational distribution of white adults in 2020. We then subtracted the actual number of adults in each group with each college degree level in 2020 to determine how many more people would have each degree if all groups had the same attainment levels as white adults. For groups whose attainment of college degrees already exceeded those of white adults, we counted the additional number of people needed to reach the attainment of white adults at that degree level as zero. We then multiplied the additional number of people at each degree level needed to reach the attainment of white adults in each group by the median individual net lifetime earnings gains for people with each level of college degree attainment in that group. This calculation resulted in the potential net lifetime earnings gains associated with closing college degree attainment gaps. It was not necessary to factor in population growth because we conducted this thought experiment by shifting attainment and not by adding additional people.

In the second scenario, we built on the first by estimating what the net lifetime earnings gains would have been if, in addition to having the same levels of college degree attainment, all racial/ethnic groups had earnings equal to those of white adults with the same levels of education. It is important to note that, because we are focused on the benefits associated with an increase in educational attainment, we consider the benefits of equalizing earnings only for adults whose attainment levels rose during the period (or would have risen in step one of the counterfactual), not the full benefits of equalizing earnings by education level across the entire workforce.

To estimate the additional potential gains associated with this second counterfactual, for all racial/ethnic groups whose lifetime earnings at the same degree level are less than those of white adults, we replaced the lifetime earnings at each college degree level with those of white adults. For groups with higher lifetime earnings than white adults, we used their observed median earnings without decreasing those earnings to match white adults' earnings. We left all other variables (including net tuition and fees, forgone earnings, and lifetime earnings of high school graduates) unchanged for each group.

To estimate the number of people for whom new individual net lifetime earnings gains would be applied, we took the original population-adjusted changes between 2010 and 2020 at each college degree level and added to them the additional number of graduates at each degree level

needed to equalize attainment with white adults in the first counterfactual. To estimate the full net lifetime earnings gains in this counterfactual scenario, we then multiplied the new individual net lifetime earnings gains for each group by these new population change numbers at each college degree level. Then, to estimate the additional potential lifetime earnings gains that earnings equalization could produce, we subtracted from that figure (1) the original net lifetime earnings gains from increases in college degree attainment between 2010 and 2020 and (2) the potential additional net lifetime earnings gains from equalizing college degree attainment with white adults.

Learning and Earning by Degrees:
Gains in College Degree Attainment Have Enriched the Nation and Every State,
but Racial and Gender Inequality Persists
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