

# The Investment Payoff: A 50-State Analysis of the Public and Private Benefits of Higher Education<sup>1</sup>

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*Sarah Krichels Goan and Alisa F. Cunningham explore the empirical evidence of higher education success. Drawing on a report issued by the Institute for Higher Education Policy, Goan and Cunningham present data on a variety of private and public benefits of higher education.*

—Editors' note

It is widely held that investing in higher education can bring significant benefits to both individuals and society as a whole. Both in the United States and abroad, many studies have articulated the benefits of higher education by showing that an educated workforce increases productivity along with individuals' ability to sustain employment and earn higher income.<sup>2</sup> Subsequently, the nation sees a return in the form of a higher tax base and an increased demand for goods and services. In addition, an educated workforce with a lower unemployment rate diminishes the demand for government-provided social services.

Like the federal government, state governments make a sizeable and vital public investment in postsecondary education, with annual state appropriations in fiscal year 2005 ranging from \$79 million in Vermont (which traditionally has low appropriations) to \$9 billion in California.<sup>3</sup> Support for postsecondary education has return benefits for both state and local governments and citizens living there. At the state level, the benefits of higher education are becoming increasingly relevant as policymakers seek to better understand how the investment of state tax dollars in higher education pays off.

In 1998 the Institute for Higher Education Policy published *Reaping the Benefits: Defining the Public and Private Value of Going to College*. The report contained a simple matrix that identified the benefits of higher education and grouped them

into four major categories: public economic benefits, private economic benefits, public social benefits, and private social benefits.<sup>4</sup> Drawing on the conclusions of the 1998 report and using recent data obtained from the U.S. Census Bureau's Current Population Survey (CPS),<sup>5</sup> this analysis selected six quantifiable indicators from the benefits matrix that could be examined for each of the 50 states:<sup>6</sup>

- Private economic benefits: higher personal income and lower unemployment;
- Public economic benefits: decreased reliance on public assistance;
- Private social benefits: better health;
- Public social benefits: increased volunteerism and increased voting participation.

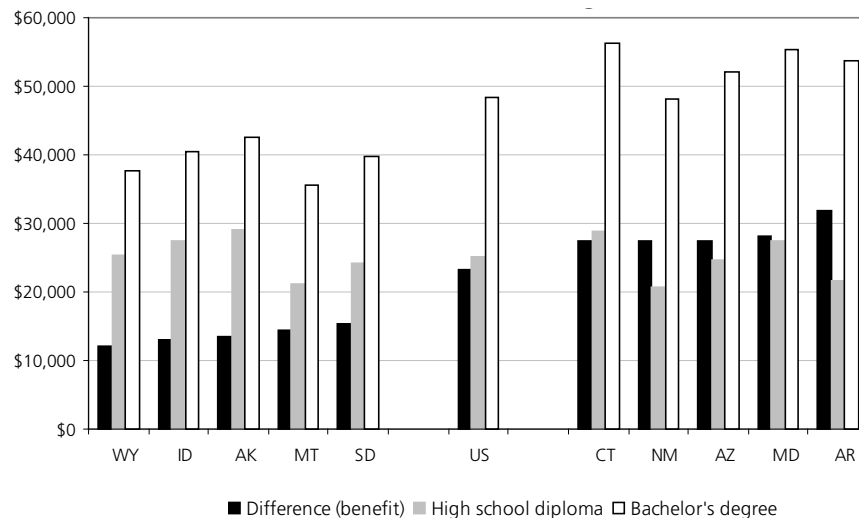
The key measure for each indicator is the added benefit, either to the individual or to society as a whole, from obtaining either an associate's degree or a bachelor's degree in addition to a high school diploma.<sup>7</sup> For each indicator, the added benefit can be measured by examining the difference (in either dollar amounts or percentage points) between the outcomes reported among those with a degree compared to the outcomes reported among those with a high school diploma. Further, when examining the difference, it is important to consider the starting point (percent or average dollar amount among those with a high school diploma) in order to conceptualize the relative difference among the groups; to this end, the percentage difference was often calculated.<sup>8</sup> This was particularly useful when examining small percentage point changes.

As context for this discussion about the state-level benefits of higher education, it is important to first examine the percentage of the population holding an associate's degree or bachelor's degree and higher. Nationally, 28 percent of the population age 25 years and older held a bachelor's degree or higher, and 36 percent held an associate's degree or higher. Among the 50 states, the percentage of the population holding a bachelor's degree in March 2004 ranged from 15 percent in West Virginia to 37 percent in Massachusetts. When the attainment data are combined with each of the six indicators, significant trends unfold. While the main text focuses on the added benefit of obtaining a bachelor's degree, the analysis presented in Box 1-1 suggests that similar trends hold true among those who hold an associate's degree.

### Private Economic Benefits: Personal Income

Data show that in terms of both lifetime earnings and average annual income, individuals' ability to earn more and to maintain employment correlates with their higher levels of education. In March 2004, the national average personal total income of workers 25 and older with a bachelor's degree was \$48,417, roughly \$23,000 higher than for those with a high school diploma (Figure 1). At the state level, the financial impact varied although the increase in earnings for those holding a bachelor's degree was clearly evident across all the states. While those with a bachelor's degree in Connecticut reported the highest overall average personal total income (\$56,000), Arkansas stood out as the state in which the difference between those holding a high school diploma and those with a bachelor's degree was the highest (almost \$32,000).

**FIGURE 1: Average personal total income of the U.S. population age 25 and older as of March 2004: states with the largest and smallest differences between those with a high school diploma and those with a bachelor's degree.**



NOTES: States selected based on the difference; earnings by educational attainment are included for comparison purposes. Those with a bachelor's degree means that the highest level attained was a bachelor's degree and does not include those who have attained an advanced degree as well.

SOURCE: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

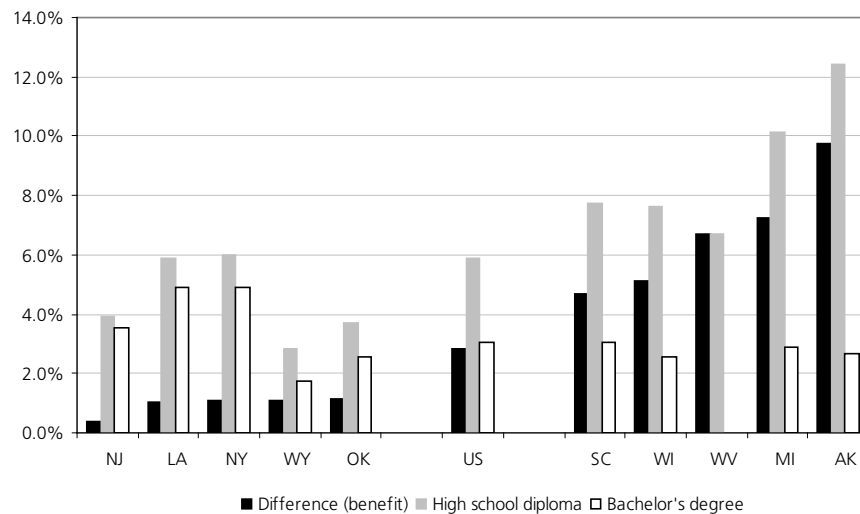
Even in states where the added benefit of a bachelor's degree was the lowest in terms of increases to average personal income, the data still show dramatic per-

centage increases. For example, in the state of Montana those with a bachelor's degree reported average personal total earnings of \$35,000, the lowest in the nation. However, this was \$14,500 higher than the average total personal income of Montana workers with only a high school diploma, an increase of 48 percent.

### Private Economic Benefits: Labor and Unemployment

The percentage of workers age 25 and older who are in the labor force but were not employed is another personal economic indicator that can be correlated with higher educational attainment at both the national and state levels. Unlike the previous example, where the benefit of higher education was increased income, the benefit in the case of unemployment is a decrease in the reported rate among those who have completed a bachelor's degree. In March 2004, 6 percent of the U.S. population age 25 and older with a high school diploma were not employed, compared with 3 percent for those with a bachelor's degree (Figure 2). At the state level, people with a high school diploma in the labor force

**FIGURE 2: Percentage of U.S. population age 25 and older who were in the labor force and not employed, March 2004: states with the largest and smallest differences between those with a high school diploma and those with a bachelor's degree.**



NOTES: States selected based on the difference; unemployment rates by educational attainment are included for comparison purposes. Those with a bachelor's degree means that the highest level attained was a bachelor's degree and does not include those who have attained an advanced degree as well.

SOURCE: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

reported being unemployed at a higher rate, with the difference between the two populations ranging from roughly 0.4 percentage points to 10 percentage points. Across all the states, individuals with a bachelor's degree reported lower levels of unemployment than individuals with a high school diploma.

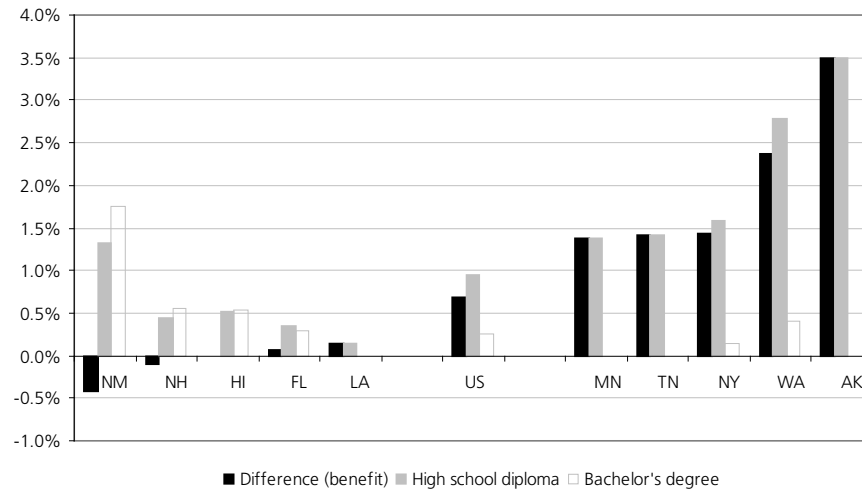
Because in many cases the changes in unemployment rates are relatively small, the differences between those who hold a high school diploma and those who hold a bachelor's degree are captured more clearly by examining the percentage difference. In the United States as a whole, the 2.8 percentage point difference between the unemployment rates of those with a high school diploma and those with a bachelor's degree constituted a 48 percent decrease. Even in the five states where the differences in unemployment rates between the two populations were smallest, they represented decreases of 10 percent to 39 percent. Despite the range of differences, therefore, the pattern is consistent: higher unemployment rates were found among those with a high school diploma than among those with a bachelor's degree.

### **Public Economic Benefits: Reduced Reliance on Public Assistance**

An educated workforce with a lower unemployment rate also may bring other benefits, such as less dependence on welfare assistance and diminished demand for other government-provided social services.<sup>9</sup> Like unemployment, therefore, the benefit from higher education is actually a decrease in the reported rate of public assistance receipt. Nationally, 1 percent of those with a high school diploma, and less than 0.5 percent of those with a bachelor's degree, received some form of public assistance in 2003 (Figure 3).<sup>10</sup> Among the states, decreases in the rate of public assistance receipt ranged from 0.2 percentage points to 3.5 percentage points. Three states—New Mexico, New Hampshire and Hawaii—showed that a greater proportion of those with a bachelor's degree reported receiving public assistance. However, the data from the other 47 states reinforce the assertion that earning a bachelor's degree reduces reliance on public assistance programs.

While the national percentages regarding the receipt of public assistance in 2003 were quite small, a difference of 0.7 percentage points between the rate of receipt reported by those with a high school diploma and the rate reported by those with a bachelor's degree represented a decrease of 72 percent. Among

**FIGURE 3: Percent of U.S. population age 25 and older who reported receiving public assistance in 2003, March 2004: states with the largest and smallest differences between those with a high school diploma and those with a bachelor's degree.**



NOTES: States selected based on the difference; rates of public assistance receipt by educational attainment are included for comparison purposes. Those with a bachelor's degree means that the highest level attained was a bachelor's degree and does not include those who have attained an advanced degree as well. In Mississippi, no one with a high school diploma or a bachelor's degree reported receiving public assistance; the state was therefore excluded from this table.

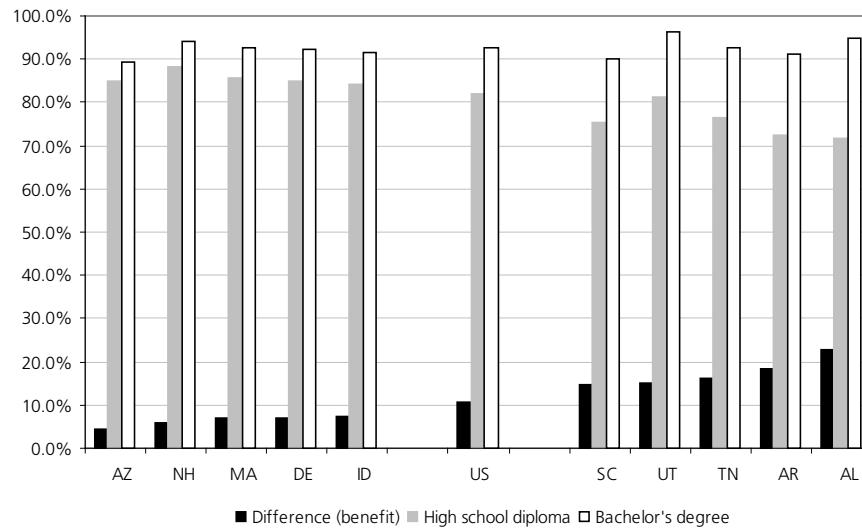
Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

those states in which data revealed a decrease in the rate of public assistance receipt between those with a high school degree and those with a bachelor's degree, 27 showed a decrease of 100 percent (four are included in Figure 3). Decreases in the rate of public assistance receipt in the remaining 20 states ranged from 14 percent to 91 percent.

### Private Social Benefits: Health

While most indicators of private social benefits are extremely difficult to measure, personal health represents one that is quantifiable. Across the United States, 82 percent of those with a high school diploma reported being in "excellent, very good, or good" health, compared with 93 percent of those with a bachelor's degree (Figure 4). Indeed, in every state, those with a bachelor's degree reported higher rates of good health than those with a high school diploma. The greatest differences in the reporting of good health between those

**FIGURE 4: Percent of U.S. population age 25 or older who reported being in good, very good, or excellent health, March 2004: states with the largest and smallest differences between those with a high school diploma and those with a bachelor's degree.**



NOTES: States selected based on the difference; rates of reported health by educational attainment are included for comparison purposes. Those with a bachelor's degree means that the highest level attained was a bachelor's degree and does not include those who have attained an advanced degree as well.

Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

with a high school diploma and those with a bachelor's degree ranged from 15 percentage points to 23 percentage points and represented increases of 19 percent to 32 percent. For example, in Alabama (the state with the lowest reported rate of good health among those with a high school diploma) the proportion of bachelor's degree recipients indicating "excellent, very good or good health" was 23 percentage points higher than for those with high school diplomas, a difference of 32 percent. Even in the states where the data show the smallest differences among the two populations, the percentage differences in reported good health between high school graduates and bachelor's degree recipients constituted increases of between 5 percent and 9 percent.

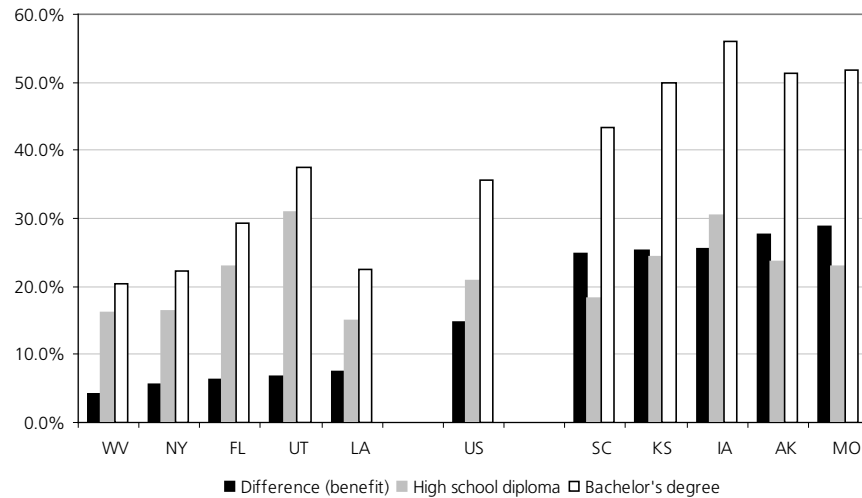
### Public Social Benefits: Volunteerism

The public social benefits of higher education are probably the most complex and difficult to measure. However, community engagement can be captured

to some degree by examining the rate of volunteer participation. In September 2004, 21 percent of the U.S. population age 25 and older who had a high school diploma reported ever volunteering, compared with 36 percent of those with a bachelor's degree, a difference of almost 15 percentage points (Figure 5). In all 50 states, higher levels of education were correlated to a higher likelihood that an individual would volunteer, with differences ranging from 4 percentage points to 29 percentage points. Even states with low rates of overall volunteerism revealed added benefits that correlated with higher levels of educational attainment. For example, in West Virginia 20 percent of bachelor's degree recipients reported ever volunteering, compared with 16 percent of those with a high school diploma.

As with other indicators, the data suggest that the added value of a bachelor's degree in terms of the percentage increase in volunteering rates varies from one state to another. While West Virginia showed the smallest difference between

**FIGURE 5: Percentage of U.S. population age 25 and older who reported ever volunteering, September 2004: states with the largest and smallest differences between those with a high school diploma and those with a bachelor's degree.**



NOTES: States selected based on the difference; rates of reported volunteerism by educational attainment are included for comparison purposes. Those with a bachelor's degree means that the highest level attained was a bachelor's degree and does not include those who have attained an advanced degree as well.

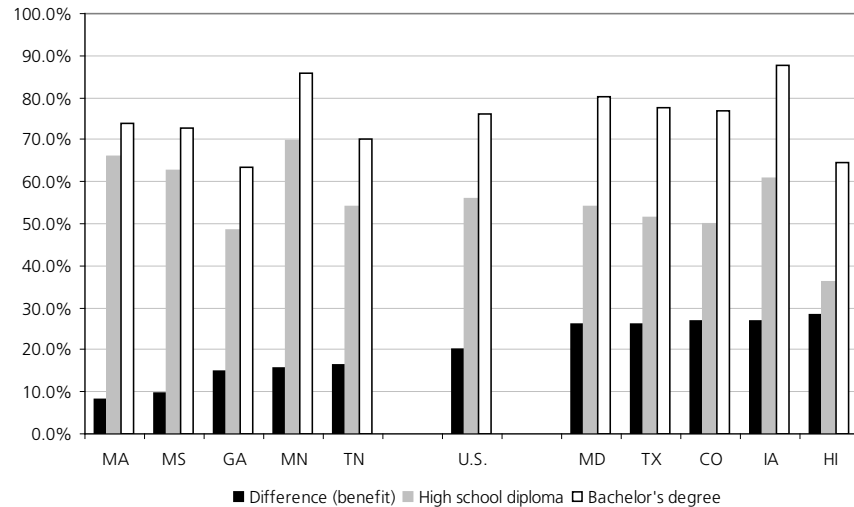
SOURCE: U.S. Census Bureau, Current Population Survey (CPS), Volunteer Supplement (September 2004).

the two populations, this represented an increase of 22 percent in the volunteerism rate. Similarly, in the other four states where small differences between the two populations were reported (5 percentage points to 7 percentage points), the differences represented increases of 35 percent to 80 percent. This indicates that higher education still correlated with additional benefits even in those states.

### Public Social Benefits: Voting

Voting rate as a proxy for civic involvement is another indicator that can gauge the public social benefits of higher education. In November 2000, 56 percent of U.S. citizens who were age 25 and older and had a high school diploma responded that they had voted in the presidential election, compared with 76 percent of bachelor's degree recipients, a difference of 20 percentage points (Figure 6). All of the states also showed evidence that higher educational attainment increases the likelihood of voting. The differences in reported voting rates between those with a high school diploma and those with a bachelor's degree ranged from 8

**FIGURE 6: Percentage of the U.S. population age 25 and older who voted in the November 2000 election: states with the largest and smallest differences between those with a high school diploma and those with a bachelor's degree.**



NOTES: States selected based on the difference; reported voting rates by educational attainment are included for comparison purposes. Those with bachelor's degrees does not include those who have an advanced degree as well as a bachelor's degree.

SOURCE: U.S. Census Bureau, Current Population Survey (CPS), Voting Supplement (November 2000).

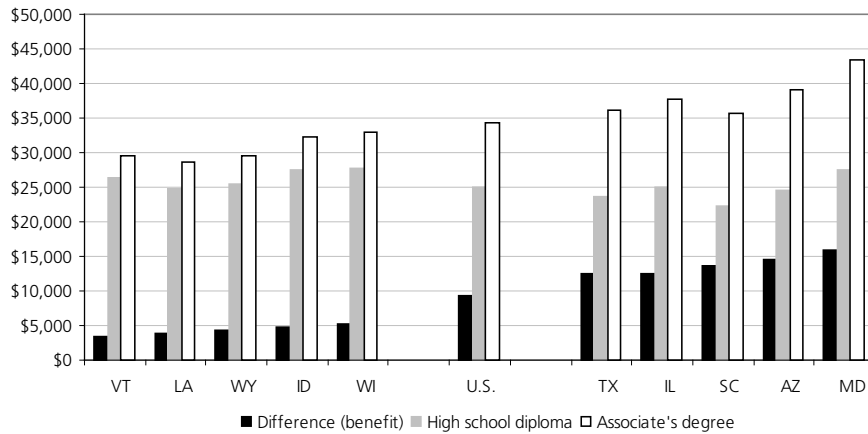
percentage points in Massachusetts to 28 percentage points in Hawaii. Even the states with the smallest differences in voting rates between the two populations demonstrated significant percentage increases, ranging from 15 percent to 30 percent. This indicates that all states benefited from higher education with respect to voting participation.

## A CLOSER LOOK:

### The Value Added from Attaining an Associate's Degree

The proportion of the population age 25 and older who held an associate's degree ranged from 5 percent in Louisiana to 14 percent in North Dakota. At the state level, the additional benefit of an associate's degree was clear in half the indicators, while for the others the outcome was mixed. For example, for those with an associate's degree the national average personal total income was about \$34,000, or roughly \$9,000 more than for those with a high school diploma (Figure B-1). At the state level, the increase in earnings for those holding an associ-

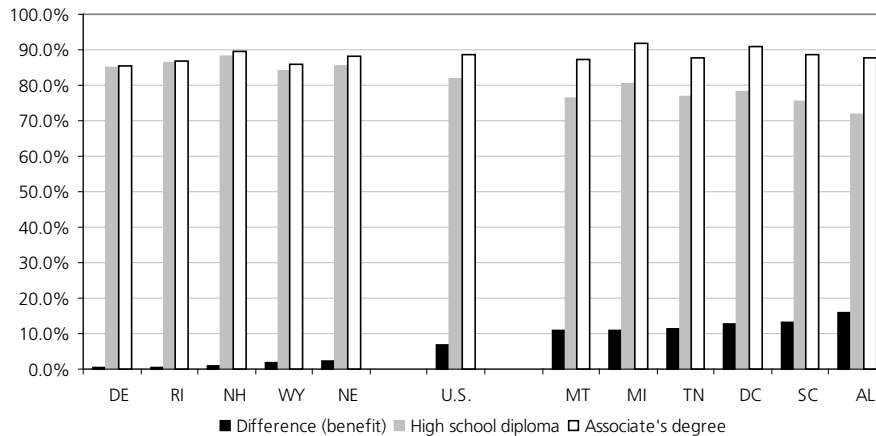
**FIGURE B-1: Average personal total income of the U.S. population age 25 and older as of March 2004: states with the largest and smallest differences between those with a high school diploma and those with an associate's degree.**



NOTES: States selected based on the difference; earnings by educational attainment are included for comparison purposes.

Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

**FIGURE B-2: Percent of U.S. population age 25 or older who reported being in good, very good, or excellent health: states with the largest and smallest differences between those with a high school diploma and those with an associate's degree.**



NOTES: States selected based on the difference; earnings by educational attainment are included for comparison purposes.

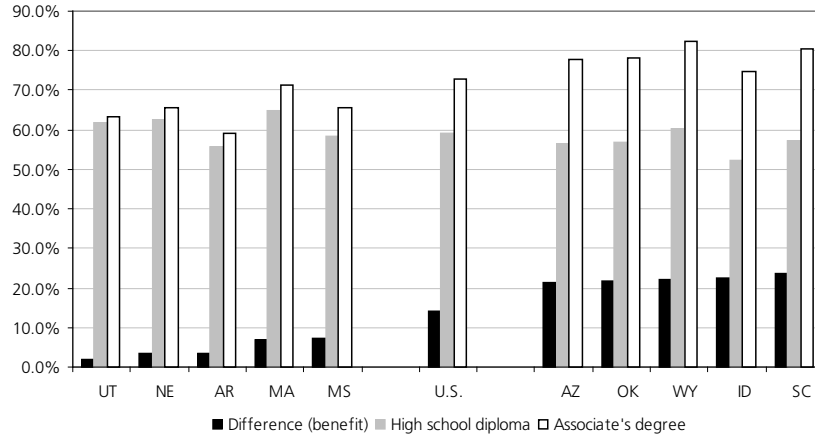
Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

ate's degree was clearly evident across all the states and ranged from a difference of about \$3,300 per year in Vermont to almost \$16,000 in Maryland.

An associate's degree also correlated to higher levels of reported good health (Figure B-2). The rate of good health among those with an associate's degree in Alabama was 15 percentage points higher than among those with a high school diploma (an increase of 22 percent), although citizens of Delaware reported only minor differences in health status.

The most recent voting data from the November 2004 presidential election revealed that, in every state, a larger proportion of the population with an associate's degree reported voting than did the population with a high school diploma (Figure B-3). This ranged from a 3 percent increase in Utah to a 53 percent increase in Hawaii. Volunteerism rates showed similar patterns and all but two states indicated that a higher proportion of those with an associate's degree reported ever volunteering (Figure B-4).

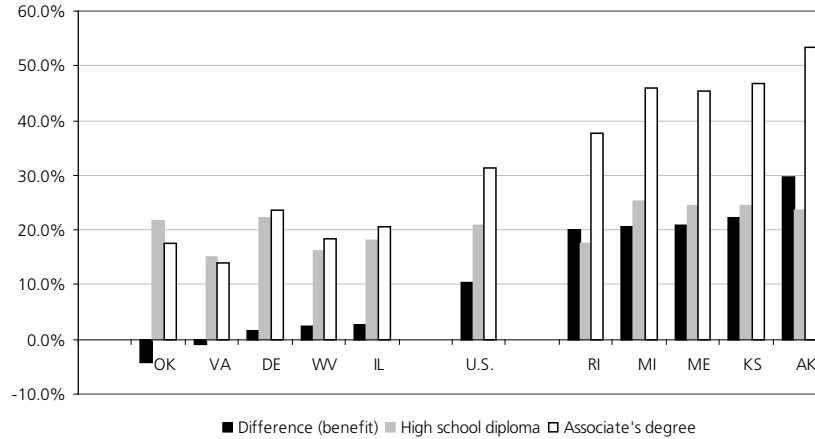
**FIGURE B-3: Percentage of the U.S. population age 25 and older who voted in the November 2004 election: states with the largest and smallest differences between those with a high school diploma and those with an associate's degree.**



NOTES: States selected based on the difference; reported voting rates by educational attainment are included for comparison purposes.

Source: U.S. Census Bureau, Current Population Survey (CPS), Voting Supplement (November 2004).

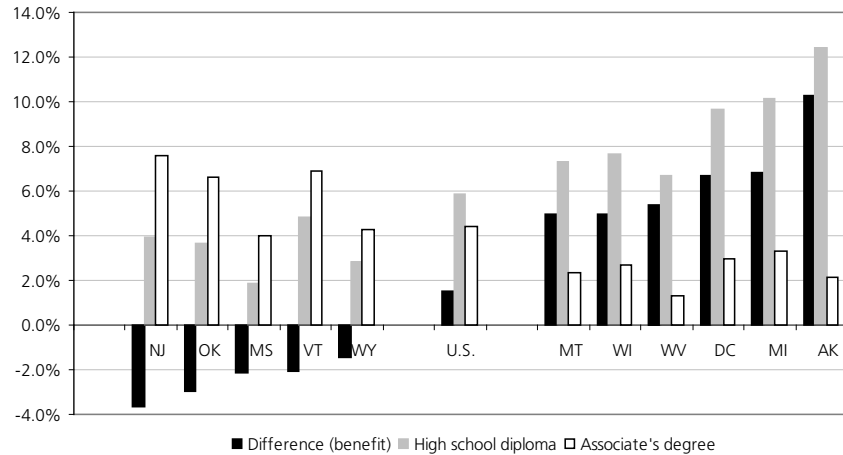
**FIGURE B-4: Percentage of U.S. population age 25 and older who reported ever volunteering, September 2004: states with the largest and smallest differences between those with a high school diploma and those with an associate's degree.**



NOTES: States selected based on the difference; rates of reported volunteerism by educational attainment are included for comparison purposes.

Source: U.S. Census Bureau, Current Population Survey (CPS), Volunteer Supplement (September 2004).

**FIGURE B-5: Percent of U.S. population age 25 and older who were in the labor force and not employed, March 2004: states with the largest and smallest differences between those with a high school diploma and those with an associate's degree.**



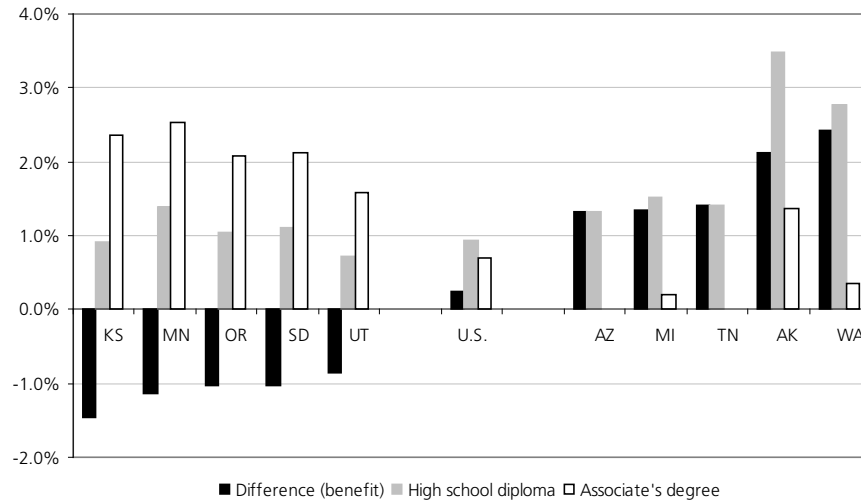
NOTES: States selected based on the difference; rates of unemployment by educational attainment are included for comparison purposes.

Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

In the majority of states and in the nation overall, the rates of unemployment and public assistance receipt declined among those with an associate's degree (Figures B-5 and B-6). However, in nine states, the unemployment rate among those with an associate's degree was higher than among those with a high school diploma. Respondents with an associate's degree in 19 states reported higher rates of public assistance receipt than those with a high school diploma. These higher rates among those with an associate's degree ought to be examined in more depth on a state-by-state basis so that the research can consider specific unemployment policies or welfare requirements unique to each state.<sup>11</sup>

In sum, every state shows increased benefits for those with an associate's degree in terms of income, good health and voting when compared with those with a high school diploma. Furthermore, every state benefited from at least two of the remaining three indicators. While the specific benefits that accrue to those who attain an associate's degree vary across the states, data nonetheless indicate that a two-year degree correlates to increased well-being at the state level.

**FIGURE B-6: Percent of U.S. population age 25 and older who reported receiving public assistance in 2003, March 2004: states with the largest and smallest differences between those with a high school diploma and those with an associate's degree.**



NOTES: States selected based on the difference; rates of public assistance receipt by educational attainment are included for comparison purposes. In Mississippi, no one with a high school diploma or an associate's degree reported receiving public assistance; the state was therefore excluded from this table.

Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement (2004).

## Conclusion and Policy Implications

Higher education provides a broad array of benefits to both individuals and society. The six indicators chosen for this analysis convincingly show that **almost every state benefits from higher education in every indicator**. For example, individuals who complete an associate's or bachelor's degree have higher salaries and lower unemployment rates compared with those with a high school diploma. Those with an associate's or bachelor's degree also are more likely to report better health, to vote and to volunteer than those with a high school diploma.

The simple articulation of the benefits of higher education for individual states needs to be featured more prominently in state policy debates regarding the

investment of state resources in higher education. However, at the state level the benefits of higher education are not fully understood and have not been adequately researched. To this end, the following recommendations can be drawn:

- To facilitate the discussion in the policy arena, efforts should be undertaken to develop specific and quantifiable indicators of the value of higher education in each state. This will also ensure that future data and analyses can take into account the policies and demographic trends unique to each state.
- In order to advance the public dialogue about higher education benefits, information should be readily available. States should consider implementing annual state-level reports that provide information about the value of higher education.

Additional research in this area can help answer questions such as why some states benefit more than others. Reframing the public dialogue over higher education to include all the benefits that accrue to a state also could be used by state policymakers to encourage residents to support and take advantage of postsecondary educational opportunities. An expanded understanding of the payoffs that result from the public and private expenditures in higher education could go a long way toward improving the prospects for state economic development, social stability and individual prosperity.

#### ENDNOTES

<sup>1</sup> This article is based on the Institute for Higher Education Policy's report of the same name, available online at [www.ihep.org](http://www.ihep.org).

<sup>2</sup> The organizations and reports include, but are not limited to: National Forum on Higher Education and the Public Good, the American Association of Colleges and Universities, the College Board's *Education Pays* (College Board, 2004), the National Center for Public Policy and Higher Education's *Measuring Up* (2004), and the Institute for Higher Education Policy's, *The Investment Payoff: A 50-State Analysis of the Public and Private Benefits of Higher Education* (2005).

<sup>3</sup> Center for the Study of Education Policy, "Grapevine 50-State Summary Table: Appropriations of State Tax Funds for Operating Expenses of Higher Education in the 50 States for Fiscal Years 1995, 2000, 2003, 2004, and 2005, with Percentages of Change Over the Most Recent One, Two, Five, and Ten Years. (In \$1,000s)" (Normal, Ill.: Center for the Study of Education Policy, Illinois State University, 2005. Available online at <http://www.coe.ilstu.edu/grapevine/50state.htm>).

<sup>4</sup> The matrix can be found in the full version of the 50-State publication as well as the origi-

nal report, both available online at [www.ihep.org](http://www.ihep.org).

<sup>5</sup> Specifically, data from the March 2004 Supplement, the September 2004 Volunteer Supplement, and the November 2000 Voting Supplement. For more information on the Current Population Survey and its supplements, see “Current Population Survey, Technical Paper 63RV: Design And Methodology” available at <http://www.bls.census.gov/cps/tp/tp63.htm>.

<sup>6</sup> The District of Columbia is not included as part of the 50-state analysis. However, data for the city are included in the appendix tables of the original report, available online at [www.ihep.org](http://www.ihep.org).

<sup>7</sup> This study does not attempt to draw inferences regarding causal relationships or to question why some states might fare better or worse compared with other states.

<sup>8</sup> This is mathematically calculated as a percentage by dividing the difference by the findings for those with a high school diploma.

<sup>9</sup> The March Supplement of the Current Population Survey defines public assistance as welfare payments, general assistance program payments, emergency assistance payments, Cuban/Haitian refugee payments, and Indian assistance payments. It specifically does not include Food Stamps or Social Security Insurance payments.

<sup>10</sup> In Mississippi, no one with a high school diploma or a bachelor’s degree reported receiving public assistance and the state was therefore excluded from this comparison.

<sup>11</sup> In addition, welfare data is suspect since the CPS question asks if the respondent received aid in the previous year only; depending on state law, it is possible that many of those age 25 or older with a high school diploma already reached the five year maximum and therefore “timed out” of the public assistance system.