

The  
Guardians  
Initiative™

Reclaiming the Public Trust

RETURN ON  
INVESTMENT  
IN COLLEGE EDUCATION

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The Guardians Initiative: Reclaiming the Public Trust™

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**What is the return on investment (ROI)  
in college education?**

**Students, parents, governments, and private donors invest in college because they believe the results justify the investment. Are they right? Here we address whether the belief that college education generates a major ROI is valid, or instead is dubious or a myth. We consider that question in light of historical precedent and contemporary evidence.**

## The principle that college confers outstanding value is deeply rooted in American history.

Since colonial times and through the 19th and 20th centuries, government policymakers and educators have held that the benefits to society of college education are formidable and have pointed to dramatic examples such as the consequences of the Servicemen's Readjustment Act of 1944, also known as the GI Bill. In recent decades, however, massively increased undergraduate enrollments and college costs have been accompanied by skepticism in some quarters about the ROI in college, as well as by declines in state support for public higher education as state governments grapple with competing public priorities.

### **Evaluation of college ROI involves consideration of economic as well as noneconomic benefits to the public and the student.**

As we show, public benefits derived from college attendance are substantially enmeshed with benefits to the individual student, and some of the benefits are quantifiable while others are not. No mathematical formula is sufficient for analysis of college ROI.

### **Powerful evidence today shows that college provides a robust positive return on public and individual investment.**

The payoff for students and the public accrues most dramatically when students earn college degrees. For example, college graduates

- make more money than others and pay more taxes;
- are more likely to be employed, hold more prestigious jobs, move up financially, and be entrepreneurs;

- are less likely to need public aid;
- are likely to be healthier than others and to have lower health care costs;
- are more likely to volunteer, vote, be civic leaders, and give larger amounts to charity; and
- report higher levels of personal and job satisfaction.

### **A college education enables students to think clearly, adapt better to change, and learn communication skills required for thriving in a democracy and the global economy.**

College fosters lifelong productive habits of mind and capacities to flourish. These benefits inure to the public. Too, higher education institutions are major employers, conduct path-breaking research, and support and populate arts and other organizations that enrich community life.

## Why Measure ROI?

College ROI should be analyzed because ROI is the ultimate gauge of value. Public confidence in, and support for, colleges and universities depends on the public's understanding of the ROI those institutions generate for students and society at large. Unless confident that college is a worthy investment, the public won't support sufficient taxpayer funding of colleges and universities or student aid. Governments, foundations, corporations, and individual donors are likely to reduce or withdraw support if they believe the investment is more needed elsewhere.

### Calculating College ROI

By college ROI, we mean the sum of all economic and noneconomic net benefits that accrue to the student and society at large, measured against investment by the student, government, and other contributors.

For the student, investment in college entails direct and indirect costs. Direct costs include amounts paid for tuition and fees, plus expenses such as room and board, books, and transportation. College attendance often requires students to delay entry into the full-time workforce. Their foregone earnings are indirect costs.

Across the sector, American higher education receives massive investment. In 2013, government provided \$157.5 billion in federal (\$75.6 billion), state (\$72.7 billion), and local (\$9.2 billion) funds.<sup>1</sup> Federal funds include Pell Grants and other student aid, research grants, and veterans' education benefits, among other programs. State funds include student aid, research grants, agricultural and medical education appropriations, and general appropriations.

In addition to public funding, higher education receives significant voluntary support from private groups and individuals. In 2016, this included contributions from foundations (\$12.45 billion), corporations (\$6.6 billion), nonprofit organizations (\$4.5 billion), alumni (\$9.93 billion), and non-alumni individuals (\$7.52 billion).<sup>2</sup> These public and private dollars represent investments made on behalf of everyone in the country. Total undergraduate tuition, room, and board payments to US higher education institutions exceed \$420 billion annually.<sup>3</sup>

One way to assess college ROI is to consider a certain financial investment and appraise the resulting benefits to students and the public. The 1944 GI Bill provides a striking example. The GI Bill supported the education of more than 2.2 million World War II veterans at two- and four-year colleges and universities.<sup>4</sup> By 1947, veterans accounted for half of all college admissions.<sup>5</sup> Those "maturing, purposeful, and hard-working" students became engineers, schoolteachers, accountants, doctors, scientists, and clergy members;

joined a blossoming “educated and industrious” middle class; and, as taxpayers, helped fund public projects and services for decades thereafter.<sup>6</sup>

The GI Bill gave access to higher education and entry into the middle class for many members of previously underrepresented groups—immigrants, Catholics, and Jews among them.<sup>7</sup> The GI Bill funded the education of three US Supreme Court justices, three US presidents, a dozen US senators, 14 Nobel Prize winners, and countless entrepreneurs.<sup>8</sup> By all accounts, the nation was abundantly rewarded and continues to reap the benefit of its investment in the education of its service members.

In the decades after enactment of the GI Bill, college enrollment increased dramatically. In 1940, 1.5 million students were enrolled in college.<sup>9</sup> Today, 17.9 million are.<sup>10</sup> College enrollment is expected to rise to 19.8 million by 2025.<sup>11</sup> In 1940, fewer than 5 percent of the US population aged 25 years and older had a bachelor’s degree.<sup>12</sup> In 2016, 60 percent had completed at least some college, and 33 percent had a bachelor’s degree or higher.<sup>13</sup>

Increased college enrollment and completion rates in recent decades are linked to a broadly held belief that college adds major value. In a 2011 survey, nearly all parents (94 percent) said they expect their child to attend college, and an overwhelming majority of college graduates (86 percent) reported that college was a good investment for them personally.<sup>14</sup> Many members of the public believe that increased access to college for previously underserved groups—including minorities, immigrants, and students with disabilities—adds intangible value, is promotive of basic societal goals, and warrants public investment. A diverse enrollment reflective of the larger population is believed to serve the changing needs of society in this era of high technology and globalization.<sup>15</sup>

Much of the available data on measurement of ROI compares college graduates to those with only a high school diploma. Accordingly, we focus here on the typical ROI for college graduates. Of course, many students enroll in college but don’t earn a degree; evidence shows that those students and the public receive positive return.<sup>16</sup> However, degree attainment provides the most value. For example, in 2015, the median earnings for college graduates aged 25 to 34 were 70 percent higher than the median for high school graduates, and the median earnings for associate’s degree holders were 20 percent higher than those with some college but no degree.<sup>17</sup>

In recent years, the cost of college has increased substantially. In constant dollars, the average annual published price of tuition and fees at a private non-profit four-year college increased from \$10,680 in 1976–77 to \$33,480 in 2016–17. Over the same period, the average annual published price for a public four-year college increased from \$2,600 to \$9,650. After scholarships and tax benefits are taken into consideration, increases in the net price students actually pay have been considerably smaller than the increases in published prices.<sup>18</sup> Still, as the cost of college has risen, students, parents, and lawmakers have questioned whether the ROI remains real. The answer to that question must account for both the quantifiable (e.g., employment) and nonquantifiable (e.g., critical thinking skills) components of ROI. A reliable answer must also be factual, not mere partisan polemic on the role or impact of colleges and universities.

### **Historical Views of College ROI**

Key American precedents speak to the deeply rooted belief that a college education generates major ROI. As Scott Cook and William Klay observe, George Washington, among other founders of the republic,

advocated a higher education system “that would utilize processes of socialization to enhance a sense of national community,” and he pointed to the value of college in advancing what he called “the science of government.”<sup>19</sup> The earliest American colleges stressed in their founding documents the institutions’ dual public and private purposes, and emphasized the role colleges would play in conferring public benefits, teaching civic virtues, and enabling students to thrive.

Yale University traces its roots to 1701 legislation that provided for a place where “Youth may be instructed in the Arts & Sciences who through the blessing of Almighty God may be fitted for Publick employment both in Church and Civil State.”<sup>20</sup> In 1736, the College

reflected the role higher education could play in solving public problems. In 1862 and 1890, Congress passed the Morrill Land Grant Acts, which assigned large plots of federal land to the states to create public universities that would “teach agricultural and mechanical arts, not excluding general sciences and classical studies.” By providing practical education in the trades to local farmers, for example, the Morrill Acts “exemplified the ideal of the institution of higher learning as a solver of local problems and a servant of the people.”<sup>24</sup>

In the 20th century, public investment in higher education vastly increased as access to college widened, including through the GI Bill and the establishment of robust community college systems in the 1950s.

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of William and Mary adopted a student code that forbade lying, cheating, and stealing.<sup>21</sup> In 1749, Benjamin Franklin pressed for creation of a college—today, the University of Pennsylvania—that, as Steven Morgan Friedman characterizes it, would teach both “knowledge of the arts and the practical skills necessary for making a living,” so that students would be prepared “for lives of business and public service.”<sup>22</sup> Thomas Jefferson, in founding the University of Virginia in 1819, wrote of his goal of training America’s students in the “virtue and talents” necessary for leadership.<sup>23</sup>

During the 19th century, as the country grew in size and population, massive public investment

Other federal investments were made in response to specific public needs. After the Soviet Union launched Sputnik, the first Earth-orbiting satellite, the National Defense Education Act of 1958 gave scholarships and loans to students enrolled in math, science, and foreign language programs. The Pell Grant Program, which began in 1972, gives need-based grants to relatively low-income students and remains a basic mechanism through which the federal government supports college attendance.

During and after the Great Recession of 2008–10, state spending declined and federal investment grew, driven largely by increases of the Pell Grant program.<sup>25</sup> The State Higher Education Executive Officers Associa-

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tion found that state and local governments contributed \$7,116 per full-time undergraduate student in 2016, a 12 percent decrease from 10 years ago, measured in constant adjusted dollars.<sup>26</sup> In the past few years, some state support has returned. In 2016, for example, state appropriations increased in 33 states.<sup>27</sup>

### **Public and Private Benefits**

The public benefits of college education substantially overlap the benefits to the student. When measuring college ROI, quantifiable costs and benefits to the student—especially as related to employment and earnings—are most often cited. Despite the regard that should be paid such statistics, quantifiable benefits of college education are not only financial, and the student is not the only beneficiary. Consider the following two among many examples.

First, college graduates who earn more income also pay more federal, state, and local taxes, which fund public projects and services for everyone—not just fellow college graduates. In 2015, bachelor's degree recipients paid, on average, an estimated \$6,900 (91 percent) more annually in taxes than high school graduates. Those with associate's degrees paid 33 percent more than high school graduates, and individuals with some college but no degree paid 17 percent more.<sup>28</sup>

Second, college graduates produce private and public benefits that are no less real for being usually unmeasured in terms of economic or labor market effect. For example, 93 percent of college graduates report being in excellent, very good, or good health compared with 82 percent of those with only a high school diploma.<sup>29</sup> College graduates are less likely to smoke.<sup>30</sup> College graduates are more likely to exercise regularly compared with people with a high school diploma.<sup>31</sup> College graduates are less likely to be obese.<sup>32</sup> Individuals' health has broad social benefits because healthier citizens are more productive and reduce burdens on insurance, unreimbursed medical expenses, and other costs to taxpayers.<sup>33</sup>

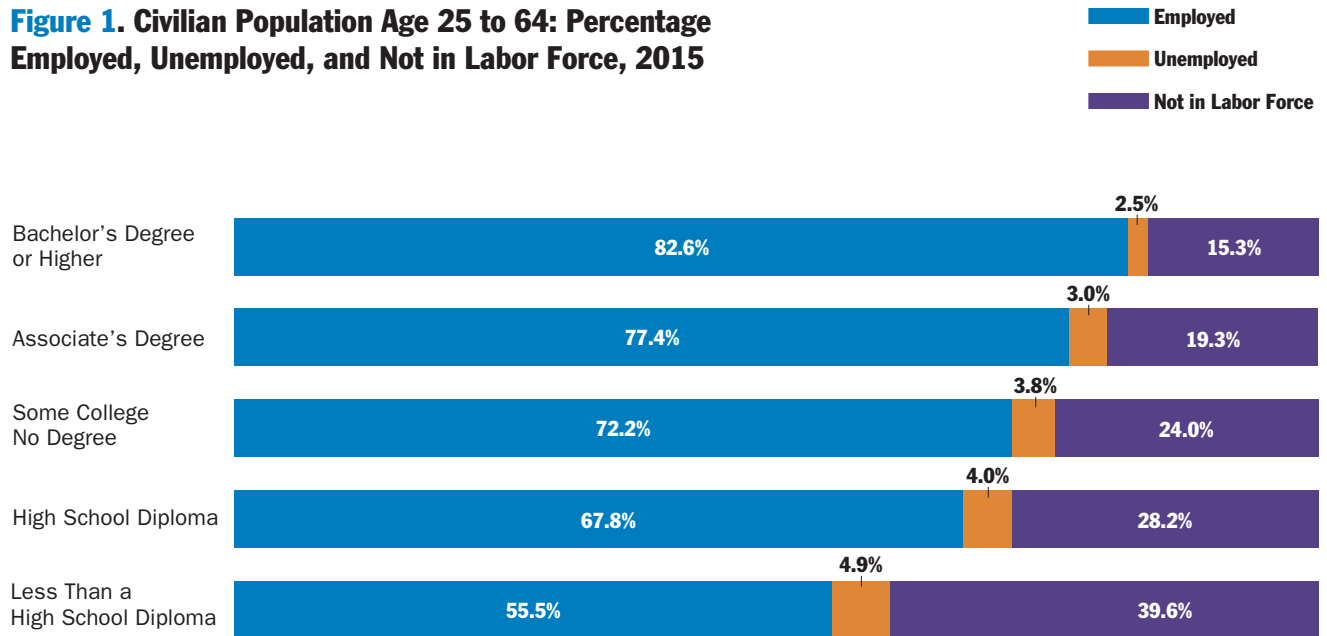
### **Contemporary Evidence of College ROI**

We consider here several types of public and private benefits contemporary evidence shows are linked to college attendance.

Undergraduate education improves graduates' overall employment, financial, and other outcomes. College graduates are more likely than high school graduates to be employed (see fig. 1). In 2015, among adults aged 25 to 64, 83 percent of those with a bachelor's degree or higher were employed, compared with 68 percent of high school graduates and 72 percent of those with an associate's degree.<sup>34</sup>



**Figure 1. Civilian Population Age 25 to 64: Percentage Employed, Unemployed, and Not in Labor Force, 2015**

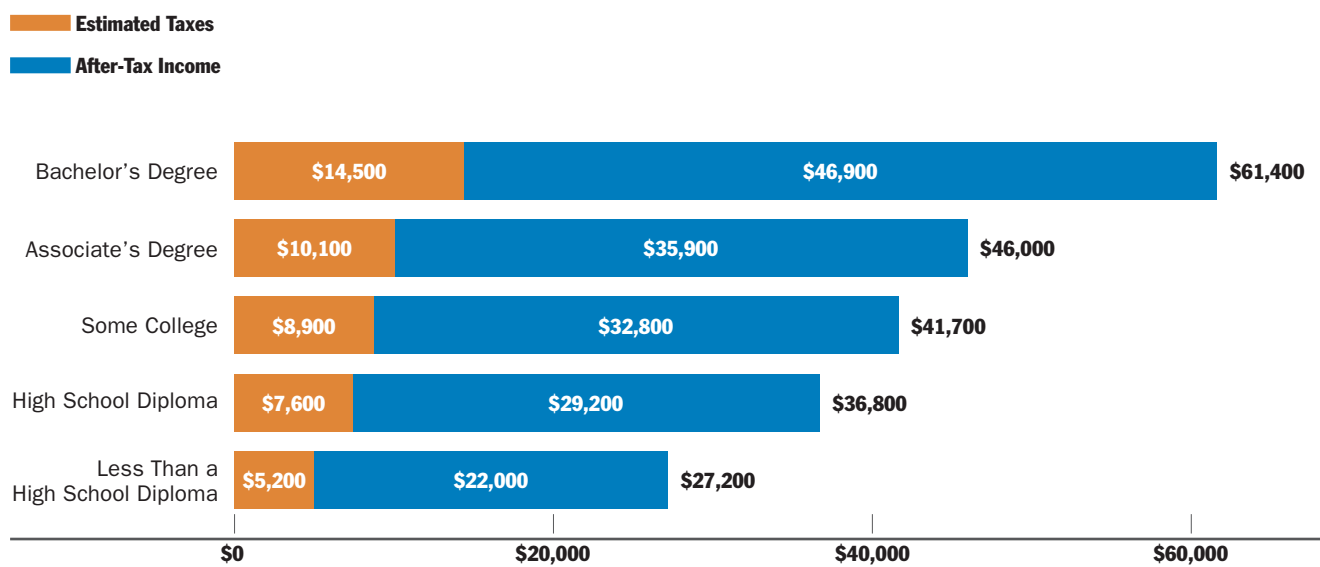


SOURCE: Adapted from Jennifer Ma, Matea Pender, and Meredith Welch, *Education Pays 2016: The Benefits of Higher Education for Individuals and Society* (New York City: College Board, 2016), 28, fig. 2.11.  
NOTE: Percentages may not sum to 100 because of rounding.

College graduates also have more job security and are better able to weather economic downturns.<sup>35</sup> The unemployment rate for individuals aged 25 and older with at least a bachelor's degree has been consistently about half the rate for high school graduates. During the recent recession, the unemployment rate for bachelor's degree holders peaked at around 4.7 percent, compared with 10.3 percent for high school graduates and 14.9 percent for those with no high school diploma.<sup>36</sup> As the US economy continues to recover, 99 percent of the 11.6 million new jobs have gone to workers with at least some college education.<sup>37</sup>

On average, college graduates make more money than those with less education (see fig. 2). In 2015, the median annual earnings of bachelor's degree recipients working full time were 67 percent higher than those of high school graduates.<sup>38</sup> The "wage premium" continues to increase: From 2000 to 2016, the wages of college graduates grew by 6.9 percent in inflation-adjusted dollars, while the wages of those with only a high school diploma increased by just 0.9 percent.<sup>39</sup> On average, a college student who enrolls at age 18 and graduates in four years can expect to earn by age 34—that is, within 12 years of graduation—enough to

**Figure 2. Median Annual Earnings and Tax Payments of Full-Time Year-Round Workers Age 25 and Older, by Education Level (2015)**



SOURCE: Adapted from Jennifer Ma, Matea Pender, and Meredith Welch, *Education Pays 2016: The Benefits of Higher Education for Individuals and Society* (New York City: College Board, 2016), 17, fig. 2.1.

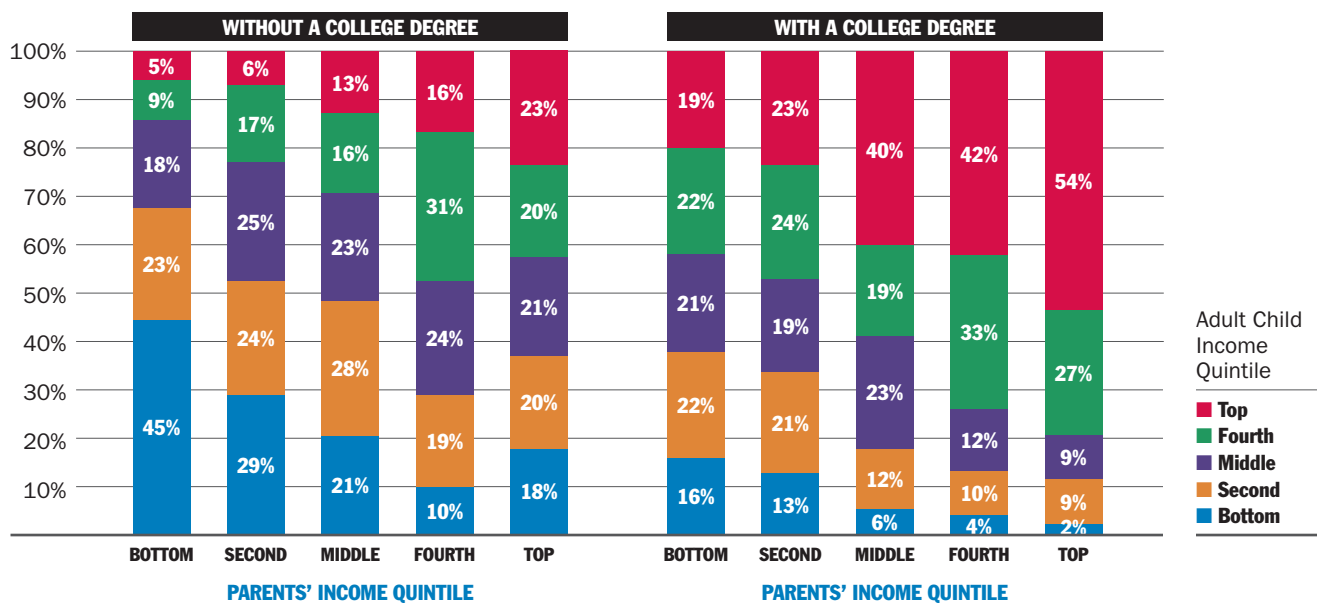
compensate fully for being out of the labor force for four years and for paying the entire net cost of college.<sup>40</sup>

The longer the college graduate remains in the workforce, the greater the financial ROI. On average, Americans with a bachelor's degree will have additional lifetime earnings of \$625,000 in present discounted value (using a 3 percent real interest rate and taking foregone earnings into account) compared with high school graduates.<sup>41</sup> Although not all differences in earnings may be attributable to educational level, and "the average high school graduate may not increase his or her earnings to the level of the average college graduate simply by earning a college degree,"<sup>42</sup>

research suggests that college education is associated with increased earnings even after controlling for individual and family characteristics.<sup>43</sup>

College graduates hold jobs that are more prestigious than the jobs held by those with little or no undergraduate education. According to US General Social Survey data, the average "occupational prestige score" of respondents' rankings of occupations was 38 for jobs held by high school graduates, 43 for jobs held by those with some college but less than a bachelor's degree, and 53 for jobs held by those with a bachelor's degree or more. Occupational prestige matters, among

**Figure 3. Social Mobility With and Without a College Degree, Families of Various Incomes: Percentage of Adult Children Reaching Each Income Quintile**



SOURCE: Ron Haskins, *Education and Economic Mobility 5* (2016), published by The Pew Charitable Trusts (citing Brookings Institute analysis of Panel Study of Income Dynamics data).

other reasons, because it is correlated with workers’ sense of accomplishment, autonomy, social interaction on the job, recognition inside and outside the firm, support from managers and coworkers, and job security.<sup>44</sup>

College graduates are upwardly mobile. They are more likely to move, over time, to the upper end of the income distribution than are their peers from similar backgrounds who hold only a high school diploma. Forty-five percent of adults without a bachelor’s degree who grew up in the lowest quintile of family income remained in the bottom quintile, compared with just 16 percent of those with a bachelor’s degree. Adult children of parents in all five income quintiles are more

likely to enter or remain in the top two quintiles if they graduate from college. Only 14 percent of adult children from the bottom quintile without a college degree reach the top two quintiles.

In contrast, 41 percent of adult children from the bottom quintile reach the top two quintiles if they graduate from college. By finishing college, adult children of parents in the top two quintiles improve their chances of staying in the top two quintiles from approximately 45 percent (without a college education) to approximately 78 percent (with a college degree).<sup>45</sup>

College graduates are less likely than high school graduates to rely on public assistance such as Medicaid, food-stamp programs, school lunches, and housing subsidies. The average present value of lifetime savings from reduced public assistance is about \$22,000 for associate's degree holders and \$40,000 for bachelor's degree holders, compared with high school graduates.<sup>46</sup> These savings accrue to taxpayers.

While data are limited on how much students learn or how their thought processes change, it is clear that a college education results in far more than a stable financial footing. Controlling for family background

precision and style, think more clearly, analyze more rigorously, become more ethically discerning, [and] be more knowledgeable and active in civic affairs." College's emphasis on those skills is critical because "[m]ore than half of all young people in America go to college, and more than a quarter receive a bachelor's degree. Virtually every aspiring lawyer, doctor, minister, scientist, and schoolteacher must earn a college diploma, and almost all future corporate executives, legislators, and high public officials will do the same."<sup>49</sup> In return for its investment, the public expects colleges to produce graduates who are "culturally aware,

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and income, workers with higher levels of education report greater satisfaction with their jobs.<sup>47</sup> There is a positive correlation between higher levels of education and subjective measures of happiness, life satisfaction, and mental well-being. For example, among survey respondents asked about their overall happiness, 94 percent of college graduates report being "very happy" or "pretty happy," compared with 89 percent of high school graduates. The positive correlation between educational level and happiness remains even after controlling for differences in income associated with educational attainment.<sup>48</sup>

As former Harvard University President Derek Bok has said, college provides immense benefits when it teaches students to "communicate with greater

analytical, intellectually curious, employable, and capable of leadership."<sup>50</sup> Incoming college students believe it is "essential" or "very important" that college prepare them "to develop a philosophy of life" and "to help others in difficulty."<sup>51</sup> College trains these future leaders in the way of "free and civil discourse," and graduates use this training as they go about their lives.<sup>52</sup>

Worldwide, there is strong consensus among thought leaders that a college education is highly desirable for personal and national advancement. American higher education remains the global standard of excellence. In 2015, more than one million students from other countries were enrolled as undergraduate or graduate students in American colleges and universities.<sup>53</sup> The United States hosts more international students than

any other country.<sup>54</sup> International students contributed more than \$32 billion to the US economy in the 2015–16 academic year.<sup>55</sup>

Even as technology fosters new and different educational approaches, employers emphasize the value of a college education. Stewart Butterfield, CEO of Slack Technologies, explained why his high-tech company seeks to hire college graduates: “Studying philosophy taught me . . . to write really clearly. I learned how to follow an argument all the way down, which is invaluable in running meetings. And when I studied the history of science, I learned about the

zens with only a high school diploma (12 percent and 20 percent, respectively).<sup>58</sup> The gaps in voting rates based on educational attainment have widened over time. In the 1964 presidential election, 88 percent of college graduates and 76 percent of those with a high school diploma voted—a 12 percent gap. By the 2016 presidential election, the gap had doubled to 24 percent: 76 percent of college graduates and 52 percent of those with a high school diploma voted.<sup>59</sup>

College graduates are more likely to be civically engaged and to serve as community leaders (see fig. 4). Among adults aged 25 and older, 39 percent of those

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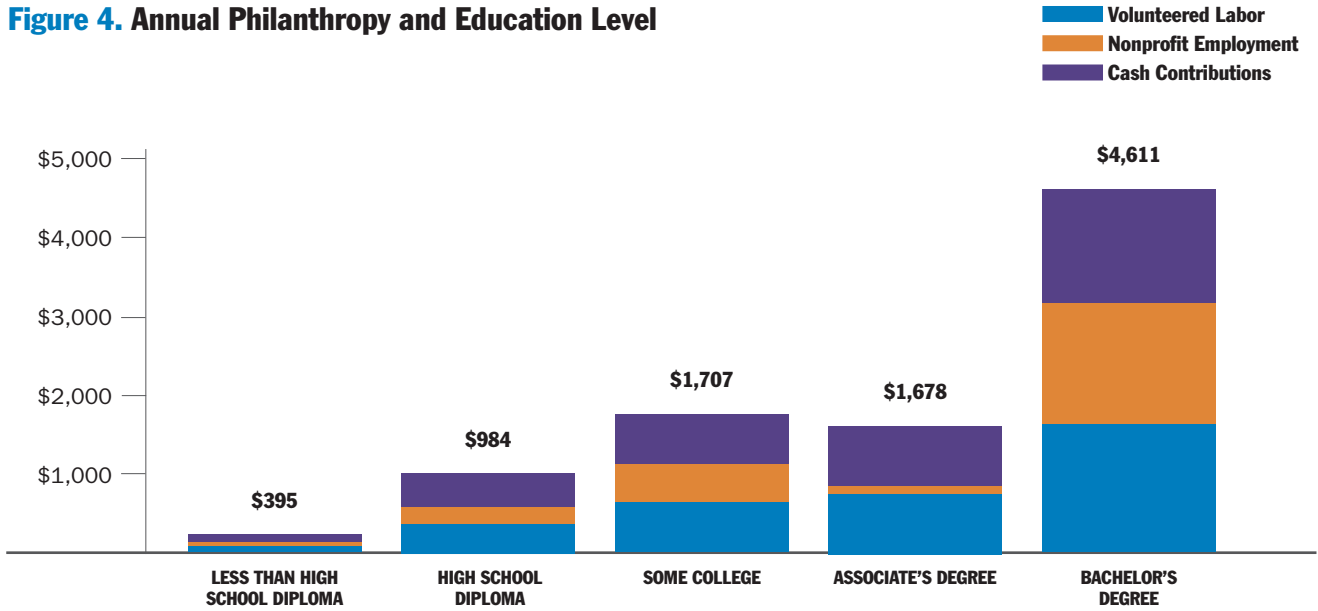
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ways that everyone believes something is true . . . until they realized that it wasn't.”<sup>56</sup> Beyond technical skills learned in the classroom, employers report that graduates’ problem-solving abilities, ability to work in a team, written and oral communication skills, and leadership experiences fostered in college are critical to success in the workplace.<sup>57</sup>

College education also fosters an individual’s ability to contribute to democratic institutions and be engaged in our political system. Within each age bracket, the voting rate is higher for those with more education. In the 2014 election, for example, the voting rates among citizens with a bachelor’s degree or higher who were aged 18 to 24 (29 percent) and 25 to 44 (45 percent) were more than double those among citi-

with at least a bachelor’s degree volunteered time in 2015, compared with 16 percent of those with a high school diploma.<sup>60</sup> College graduates are more likely to discuss politics at least a few times a week, contact one or more public officials to express an opinion, and buy or decline to buy a product or service because of their social or political values.<sup>61</sup> College graduates are more likely to be members of school or community associations, service or civic organizations, and religious institutions.<sup>62</sup> They are also more likely to serve as officers of community groups, and more likely to attend public meetings where community affairs are discussed.<sup>63</sup> Correlation does not necessarily signify causation—personal characteristics may make people both pursue higher education and engage in these

**Figure 4. Annual Philanthropy and Education Level**



SOURCE: Adapted from Philip Trostel, *It's Not Just the Money: The Benefits of College Education to Individuals and to Society* (Indianapolis: Lumina Foundation, 2015), 59, fig. 41.

ways—but statistical analysis does suggest, for example, that college increases the likelihood to volunteer, controlling for other demographic characteristics.<sup>64</sup>

Higher levels of education are associated with increased philanthropic giving to charities, religious organizations, and educational institutions, as well as higher levels of nonprofit employment.<sup>65</sup> College graduates annually donate an average of \$1,300, compared with \$600 for high school graduates.<sup>66</sup>

Colleges and universities, as institutions, are economic engines that drive communities throughout the nation. As former Princeton University President Shirley Tilghman has said, these institutions “stand in the forefront of America’s research enterprise, channeling public and private dollars into critical

fields of inquiry,” the results of which are “placed at the service of national goals and applied and adapted by the marketplace, enhancing human health and well-being, and creating new industries that diversify and strengthen our economy.”<sup>67</sup> Colleges and universities are also major patrons of the arts, playing host to exhibitions and artistic performances. Such events, lectures, and athletic contests make communities more vibrant places in which to live.

College-going is not a risk-free proposition. There are no guarantees of a fulfilling or prosperous life. However, powerful evidence shows that a college education prepares graduates to meet life’s challenges, advances national readiness and progress, and provides a robust positive return on public and individual investment.

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