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# Can “Some College” Help Reduce Future Earnings Inequality?

Daniel P. Gitterman, Jeremy G. Moulton, and Dillan Bono-Lunn

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This article addresses the policy debate over “college for all” versus “college for some” in the United States and analyzes the relationship between “some college” (as a formal education attainment category) and earnings. Our evidence confirms—using data from the American Community Survey (ACS), the Panel Study on Income Dynamics (PSID), and the Survey on Income and Program Participation (SIPP)—that more (postsecondary) education, on average, is associated with higher median earnings. However, there is emerging evidence that a proportion of workers who have attained lower levels of education (i.e., “some college”) earn more than those who have attained higher levels of education (bachelor’s degree).

We focus particular attention on the subset of Americans who fall into the U.S. Census official category entitled “some college.” This is a heterogeneous group who have alternate educational credentials but who have not acquired a formal associate or bachelor’s degree. Instead of an unequivocal focus on “college for all” or even “community college for all,” we argue that educators and policy-makers should consider “some college” as a viable pathway to future labor market success. In sum, we conclude that some types of “some college” could lead to a reduction in earnings inequality.

## INTRODUCTION

For much of the twentieth century, advancing overall levels of higher educational attainment has been a priority for policymakers and educators alike. There is a public debate about whether we should be preparing all high school students (or only some of them) for a four-year college degree. Beyond the popular policy debate, a range of academic literature in economics and higher education has provided additional theoretical perspectives and empirical evidence on the “college for all” premiums as well as on the returns to education.

Upon taking office, President Obama set a goal for the United States to take back its place as the world leader in the proportion of college graduates by 2020 (Carey, 2009). With 43% of

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25- to 34-year-olds holding a degree beyond upper-secondary schooling, the United States currently ranks 12th in the world among 37 OECD countries in postsecondary attainment (Organisation for Economic Cooperation and Development [OECD], 2013). Of those who enter advanced, theory-based tertiary programs, 64% of U.S. entrants graduate with a qualification, compared to the OECD average of 70%. Furthermore, of those who enter tertiary programs that focus on technical and occupational skills, only 18% of U.S. entrants graduate with a qualification, compared to the OECD average of 61% (OECD, 2013, p. 71).

Most of our OECD partners also have specified, well-defined vocational tracks for students. Consequently, many European countries successfully enroll more than half of their upper-secondary students in vocational education or training (OECD, 2008, p. 331). However, U.S. students, who may be well served entering a vocational track directly, are often discouraged from doing so to plan their paths to four-year universities (Rosenbaum, Miller, & Krei, 1996).

It has been understood for decades that individuals and society as a whole benefit from increased levels of education. This notion informed the thinking of policymakers at the national, regional, and state levels. In recent years, however, this policy consensus has frayed—or, according to some, become more nuanced—and an intense public debate has emerged about whether we should be preparing all or only some young adults for a traditional four-year college degree.<sup>1</sup>

The “college for all” proponents accept the premise that every student should engage in some form of postsecondary education. Supporters of this position—ranging from the Lumina Foundation to the Bill and Melinda Gates Foundation to President Barack Obama—agree that current and future economic conditions mandate more postsecondary education. Today, some type of learning beyond high school is viewed as a basic requirement for individual success in the labor market as well as a driver for future economic growth.

Others feel differently. Journalists and bloggers such as Robert Samuelson (2012), Joe Klein (2012), and Mark Phillips (2012) argue that the “college for all” crusade ignores both the skills and needs of students who are unlikely to be successful in a four-year college and who would benefit more from vocational programs. In response to an acknowledged need for some higher education after high school, there is an overzealous focus on preparing students for four-year colleges, resulting in a failure to consider vocational education, or career and technical education (CTE), for some students.

However, popular critics of the “college for all” argument are often guilty of misspecification: the “more higher education” argument is not that everyone should go to college; rather, proponents of “college for all” believe that everyone should have some form of postsecondary education or training. Anthony P. Carnevale (as cited in Fain, 2012), director of the Georgetown University Center on Education and the Workforce, claims that Samuelson and others “‘screwed it up a little bit’ by focusing only on degrees. . . the completion push is really about postsecondary education and training for all. . . but that doesn’t fit on anybody’s bumper sticker” (para. 25).

In this article, we contextualize today’s debate over “college for all” versus “college for some” and review the higher education and economics literatures on returns to education. We focus on the large numbers of Americans who report “some college” on formal surveys and analyze the relationship between “some college” and earnings. We conclude with insights on why “some college for some” can be a viable pathway to future labor market success as well as lead to a

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<sup>1</sup>Some of these excerpts are from Gitterman and Coclanis (2012).

reduction in earnings inequality. In sum, we attempt to shift the policy focus from “college for all” to promoting smart investments in “some college.”

## A REVIEW OF THE LITERATURE: INEQUALITY AND EDUCATIONAL OPPORTUNITY

The demand for workers with higher levels of education, coupled with a focus on providing educational equity, resulted in efforts to expand access to higher education to a wider range of students. A major impetus for “college for all” was to reduce the inequality in educational opportunity that exists for subgroups of students, often of low-income and minority status, believed to be driven by tracking expectations (Oakes, 1985). By opening the doors to college (and presumably economic mobility) to low-income students, reformers believed the pernicious economic divide would begin to crumble. Within this mind-set, community college is often viewed only as a “stepping-stone” to a four-year institution, which is the end goal (Whitaker & Pascarella, 1994).

Proponents of “college for all” believe that all students can and should go to college, with a four-year degree as the target. Scholarly supporters of this perspective assert that high expectations also promote increased student achievement (Domina, Conley, & Farkas, 2011). Conversely, scholarly opponents argue that promoting “college for all” provides a false sense of confidence that can be damaging to a student’s educational trajectory (Reynolds & Baird, 2010; Rosenbaum, 2001). Rosenbaum (2001) highlights the danger in establishing a “college for all” norm within high schools because it establishes false expectations of success for poor-performing students who are statistically unlikely to graduate with a postsecondary degree. Additionally, through an analysis of debt-burdens and labor market trends, Glass and Nygreen (2011) support Rosenbaum’s assertion and argue that “college for all” further fortifies the race and class imbalance in post-secondary attainment and reinforces the fiscal barriers low-income students face in advancing their labor market outcomes.

However, there is limited evidence as to the effectiveness of utilizing the “college for all” messaging to increase educational attainment on a wide scale. Although setting high standards of “college for all” is laudable, there are some unintended consequences, such as demoting the vocational career path. Some scholars assert that declining collegiate attainment is due in part to the false hopes ingrained in students during K–12 education, which cultivate a misunderstanding of the link between high school performance and college success (Reynolds & Baird, 2010; Rosenbaum, 2001). Schools embracing the “college for all” messaging promote high expectations for all students, often regardless of their prior achievement in high school.

The pursuit of higher education without the requisite academic skills has resulted in an increase in matriculation to community colleges, which typically have open admission policies and generous remediation programs (Rosenbaum, 2001). In 2006, four out of ten undergraduate students attended a community college (Horn, Nevill, & Griffith, 2006, p. iii). An estimated 70% of students who start their postsecondary education at a community college intend to transfer to a four-year institution, yet a large proportion of these students never acquire a degree from either type of institution (Schneider & Stevenson, 1999). In addition, compared to four-year college enrollment, community college students are more likely to be from low-income families, Black, or Hispanic (Horn et al., 2006). These students are more likely to receive less preparation in high

school and are also more likely to begin their postsecondary path in a school where the majority of students do not accomplish their goals (Martinez & Klopott, 2005).

As “college for all” messaging is promoted across the United States, data reveal low postsecondary graduation rates. Although college access has seen a consistent increase in the past decades, college graduation rates are steadily declining (Bound, Lovenheim, & Turner, 2012), and the gap in degree acquisition is expanding for low-income, minority, and/or first-generation college students (Engle & Tinto, 2008). Most recent data reveal that 59% of full-time, first-time undergraduate students enrolled at a four-year institution attained a bachelor’s degree in six years (Aud et al., 2013, p. 182). In two-year institutions, the graduation rate is even lower: just 31% of full-time, first-time undergraduate students attained a certificate or degree within 150% of time, which is three years for an associate degree (Aud et al., 2013, p. 182). Moreover, there is a racial divide in graduation rates, as 40% of Black students who entered college in 2006 attained a bachelor’s degree in six years and 25% attained a credential from a two-year institution in 150% of time (National Center for Education Statistics, 2014).

Research on college completion cites high school performance and academic preparation as one of the primary indicators in predicting college graduation rates (Adelman 1999; Goldrick-Rab, 2007; Martinez & Klopott, 2005). Yet, an increasingly large proportion of students are academically unprepared for the demands of college study. Only 26% and 38% of those graduating high school meet proficiency standards in math and reading, respectively (The Nation’s Report Card, 2013).

Moreover, Schneider and Stevenson (1999) highlight the impact of “college for all” in the analysis of “the ambitious generation,” in which 70% of graduating seniors have plans to attend college, and 70% have professional career goals (p. 23). Despite high expectations, many students are uninformed of the necessary educational path to accomplish their career goals, making them more likely to leave college without graduating (Schneider & Stevenson, 1999). The literature suggests that students most at risk of harm from the “college for all” messaging are those typically most sensitive to educational interventions. Students who are academically unprepared, misguided in their career goals, and/or socially disadvantaged heed the “college for all” norm and invest heavily in an education that they are unlikely to finish, and subsequently will not produce economic value.

For less academically inclined students or students with vocational interests, educational options with significant labor market value exist outside of the traditional four-year college degree. Students who complete alternative credentials establish a direct pathway to employment by acquiring the skills demanded by the workforce, often at a much lower cost than attempting and failing to complete a 4 year degree (Boesel & Fredland, 1999). However, the majority of our high schools are ill-equipped to prepare students for a successful vocational transition, and guidance counselors are often wary of serving as a “gatekeeper,” and instead promote “college for all” regardless of college-readiness (Rosenbaum et al., 1996, p. 257).

#### A BRIEF REVIEW OF THE LITERATURE: THE RETURN ON MORE (AND) HIGHER EDUCATION

Education plays a critical role in the labor market. Countless studies in many different countries and time periods have confirmed that college-educated workers are less likely to be unemployed,

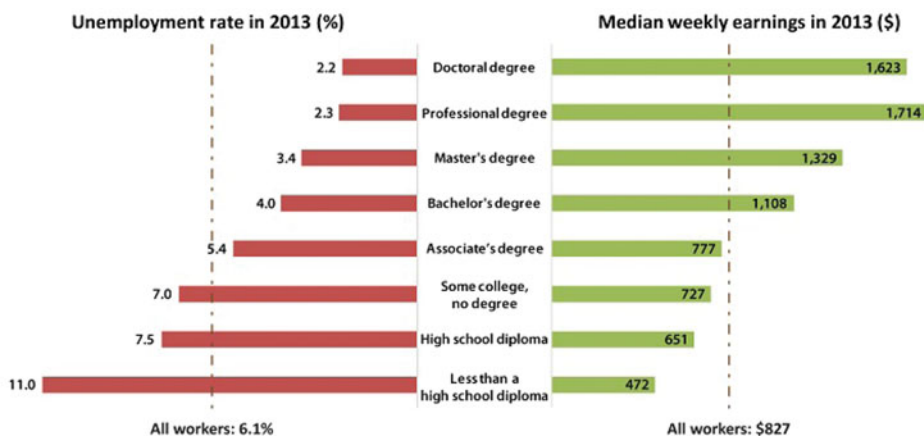


FIGURE 1 Earnings and unemployment rates by educational attainment, 2013. *Note.* Data are for persons age 25 and over. Earnings are for full-time wage and salary workers. Courtesy of U.S. Department of Labor, Bureau of Labor Statistics (2014).

have safer work environments, and receive more benefits including paid vacation, sick pay, health insurance, and pension contributions than their “less educated” colleagues (Autor, 2010: pp. 4–5). For decades, economists have tried to quantify the impact of education. Much of the focus is on the payoff to individuals. By measuring the relationship between the number of years of schooling and income earned, economists believe they can estimate the return on each year of investment.<sup>2</sup>

The evidence suggests that, on average, an additional year of schooling is likely to raise an individual’s earnings about 10% (Krueger & Lindahl, 2001). Despite a demonstrated correlation, it is difficult to conclusively find a causal relationship between education and labor market earnings: that the higher wages earned by better educated workers is in fact caused by their education, not that higher ability workers, who can demand higher earnings, choose to acquire more education (Card, 1999, p. 1802). In the real world, the effect of college education cannot be isolated from other factors that may contribute to higher earnings, such as ability or family background. For a conclusive causal relationship, researchers would need two people who are identical in every way: one person would attend and graduate college, and the other person would not. Only in this instance could we confidently attribute the difference in earnings between these two individuals as having been caused by college education (Kolesnikova, 2010).

Regardless of challenges in establishing causality, national data clearly affirm that more education pays in terms of higher earnings and lower unemployment rates at each level of educational attainment. As can be seen in Figure 1, data published by the Bureau of Labor Statistics show the unemployment rate decreases with each level of education attained (U.S. Department of Labor, Bureau of Labor Statistics, 2014). Median weekly earnings rise with every

<sup>2</sup>Although it is more difficult to quantify, there are many nonpecuniary gains to education; experience and skills acquired in college reverberate throughout one’s life and are observed in more than just earnings (Acemoglu and Angrist, 2001; Buckles, Hagemann, Malamud, Morrill, & Wozniak, 2013, Hout, 2012; Lochner, 2004; Moretti, 2004; Oreopoulos & Salvanes, 2011).

education level, with the exception of doctoral degrees, which deliver median earnings that are slightly less than the median earnings of professional degrees (see Figure 1). Autor (2010) shows that the earnings of college-educated workers relative to workers with a high school diploma or less have risen steadily over the past three decades, and in 2009, the hourly wage of a typical college graduate was 1.95 times the hourly wage of a typical high school graduate. This ratio has grown over time, due to both rising real wages of college-educated workers and stagnant and falling real wages for those without a college degree (Autor, 2010, p. 6).

### THE LIMITS OF MEDIAN EARNINGS BY EDUCATIONAL ATTAINMENT LEVEL

Although median earnings are useful illustrations of the effect of education on a person's labor market value, estimations of median earnings by educational attainment suffer from methodological challenges, including: ambiguity in education levels; sheepskin effects; selection bias and endogeneity; and limited information available to students.

Reliance on median estimates obscures the relative importance of skills gained by years of education verses the award of a degree, diploma, or certificate itself. There is some controversy about the magnitude of a "sheepskin effect," that students who obtain an award or degree earn more than students who acquire the same number of credits required to earn those credentials (Hungerford & Solon, 1987; Jaeger & Page, 1996; Jepsen, Troske, & Coomes, 2014; Kane and Rouse, 1995; Marcotte, Bailey, Borkoski, & Kienzl, 2005). A strong sheepskin effect would suggest a greater importance to students receiving an award beyond simply the skills they gain in fulfilling the requirements of that award, thereby requiring policies that focus more heavily on students' completion of programs.<sup>3</sup>

Estimations of returns to education may be prone to selection bias, where individuals who choose to invest in education are fundamentally different than those who do not (Carneiro, Heckman, & Vytlačil, 2010; Dillon & Smith, 2013; Garen, 1984; Hout, 2012; Kenny, Lee, Maddala, & Trost, 1979; Oreopoulos, & Petronijevic, 2013; Willis & Rosen, 1979). Other demographic factors, such as age, gender, race, family background, ability, and region, may impact an individual's choice to invest in education and earnings. If those who are more likely to be successful in education choose to enroll in college, estimated returns to education may be inflated, and policies that induce students who would otherwise not attend college to enroll may fail to result in higher wage earnings (Oreopoulos & Petronijevic, 2013, p. 53).

Due to lack of resources or information, a proportion of students have contact with more than one institution by transferring, either from a two-year to a four-year institution or between single institutions (e.g., from a four-year institution to another four-year institution). Transfer students are more likely to graduate than observationally equivalent direct attendees, suggesting that the

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<sup>3</sup>Presence of a sheepskin effect does not negate the labor market value some college credit may have. Carnevale, Rose, & Cheah (2011) suggest that although some occupations may have narrowly defined tasks such that some college education provides no additional value, other occupations may require greater personal initiative, allowing employees with some college to be more productive and earn more (p. 17). Marcotte et al. (2005) note that the relative importance of completion is unclear, but there are substantial returns to some community college, even when a degree is not attained (pp. 170–171).

“match” between a student and an institution may play a role in the likelihood of graduation (Andrews, Li, & Lovenheim, 2014, p. 34). Median estimates often fail to take into account the heterogeneous paths students take to educational attainment, because these transfers are methodologically difficult to account for (Andrews et al., 2014; Light & Strayer, 2004).

Much of the scholarly research in higher education and economics relies on traditional measures of educational attainment based on formal academic degrees, including high school diplomas, associate degrees, bachelor’s degrees, and advanced (master’s and professional) degrees. Indeed, attention is increasingly being paid to a wide variety of educational credentials other than academic degrees that have significant labor market value. The current, official “some college” educational attainment category in federal government-sponsored surveys makes an analysis of this subgroup particularly challenging.

In addition, median earnings are less meaningful when considering the variation in educational attainment within (rather than across) categories. For example, the official Census category comprised of those who have attained “some college, no degree” includes but is not limited to students who have completed certificates, who are currently enrolled, or who acquired credit but have not earned a credential. Consequentially, individuals in this category have varied occupations and earnings. Although there is substantial evidence of the returns to associate degrees, there is considerably less literature on the returns to certificates and diplomas.<sup>4</sup>

Certificates are awarded by educational institutions upon completion of programs of study (Bosworth, 2010, p. ii). Certificates can be awarded by public, two-year institutions or by private, for-profit institutions, such as nondegree-granting businesses or vocational, technical, or trade schools (Carnevale, Cheah, & Strohl, 2012, p. 3). In contrast, certifications and licenses are typically awarded by a nonacademic third party and are time-limited, requiring either recertification or renewal. Often industry-based, certifications are awarded after successful performance on a test. Licenses are awarded by a licensing agency based on predetermined criteria, which may include a degree, certificate, apprenticeship, certification, or work experience (Bielick, Cronen, Stone, Montaquila, & Roth, 2013, p. 5). Thus, the return on the investment and the benefit of certain types of “some college” can vary.

Median estimates of the labor market returns to education can obscure the enormous “earnings overlap,” where those with lower educational attainment earn more than those with higher educational attainment. Indeed, approximately 14% of those with a high school diploma and 23% of those with an associate degree earn the same amount or more than the median earnings of a bachelor’s degree holder (Carnevale et al., 2011, p. 7). This overlap is largely attributed to differences in occupation (Carnevale et al., 2012; Oreopoulos & Petronijevic, 2013); however, studies have shown that earnings also vary enormously depending on college quality (Black & Smith, 2006; Hoekstra, 2009; Kane & Rouse, 1995), gender, and race (Carnevale et al., 2011; Dickson & Harmon, 2011).

Analysis of the “earnings overlap” can suffer from the same methodological concerns as median estimates; however, its most significant challenge is the breadth of the category, “some

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<sup>4</sup>Jepsen et al. (2014) show that associate degrees and diplomas have quarterly returns of approximately \$1,500 for men and \$2,000 for women, with a smaller, still positive return for certificates: \$300 per quarter for men and women based on data from the Kentucky Community and Technical College System (KCTCS) (pp. 35–37). Lang and Weinstein (2013) note that returns for certificates may vary across majors and between for-profit and not-for-profit institutions (pp. 236–238).



college, no degree.” As discussed earlier, “some college” is a heterogeneous group of individuals, including certificate and diploma holders as well as dropouts. Without the ability to observe the variation within the “some college” category, the difference in earnings between individuals at different educational attainment levels cannot be truly captured.

In recent years, more attention has been paid to educational credentials (other than academic degrees) that have labor market value (Carnevale et al., 2012). Researchers have begun to evaluate the role of these “alternative educational credentials” in job placement, earnings, and career advancement (Ewert & Kominski, 2014). It is estimated that 25% of the U.S. population hold alternative credentials (Ewert & Kominski, 2014). Although these credentials include professional certifications, licenses, and educational certificates, educational certificates were most prevalent at the associate degree and “some college” level.

Ewert and Kominski (2014) report that 11.2 million adults with a high school education or less hold a professional certification, which if categorized as *more than high school* would represent a recategorization of almost 5% of the population. Individuals with the highest rate of alternative credential attainment are those with more advanced education (Ewert & Kominski, 2014, p. 3). Women with advanced degrees hold alternative credentials at a higher rate than men; however, men with less than a high school diploma hold professional certifications or licenses at a higher rate than women (Ewert & Kominski, 2014, p. 7). The industries with the highest rates of workers holding alternative credentials were educational services, health care, and social assistance industries (Ewert & Kominski, 2014, p.10).

## METHODS AND DATA: IDENTIFICATION OF “SOME COLLEGE”

There are several data sources that can be used to identify “some college” (or sub-baccalaureate educational attainment) in the United States. Because of the growing interest in nondegree credentials, the Interagency Working Group on Expanded Measures of Enrollment and Attainment (GEMEnA) was formed in 2009 under the leadership of the National Center for Education Statistics (NCES, 2011). GEMEnA seeks to incorporate valid measurement of participation in credentialing, certification, and licensing programs into key federal data collections (NCES, 2011).

The group informed the addition of nine questions in wave 13 of the 2008 Survey of Income and Program Participation (SIPP). The additional questions on certifications and licensing within SIPP provide the most robust information on individuals holding nondegree credentials for work, including certifications, licenses, and certificates (Ewert & Kominski, 2014, p. 3). The SIPP also collects information about respondents’ employment, earnings, assets, and receipt of federal income transfer and support programs. The SIPP sample is too narrow to disaggregate by state or region. More questions addressing this population are being tested in other federal surveys administered by NCES and the National Science Foundation, for which data is not yet available. The SIPP also does not distinguish between vocational or academic associate degrees.

The American Community Survey (ACS) reports “some college” as a broad category. In 2009, the American Community Survey included a new question asking respondents with a bachelor’s degree to provide their undergraduate major. This data set can provide information about the

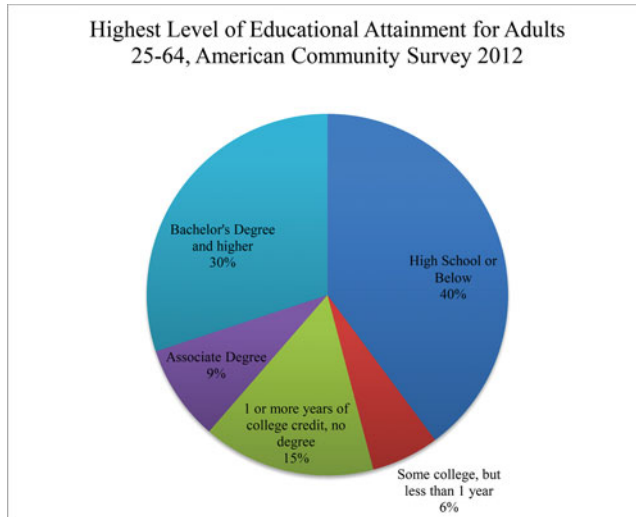


FIGURE 2 Educational attainment by proportion of the population, 2012. *Source.* U.S. ACS (2012).

relationship between the field of bachelor's degrees, median annual earnings, and the likelihood of full-time employment.<sup>5</sup>

In the ACS, respondents who have acquired some college credit but have not earned an associate degree or bachelor's degree fall into two categories: "Some college credit, but less than 1 year of college credit" or "1 or more years of college credit, no degree." The ACS's "some college" includes those with alternative credentials such as certifications, licenses, and certificates as well as those who enrolled in a postsecondary program and subsequently dropped out before completing their studies. However, the ACS does not specify if the student has completed an alternative credential within this categorization. Further, the ACS does not differentiate between the types of associate degree: whether the degree is vocational or academic. Because there is wide variation within the ACS categories "some college" and "AA degree," the ACS is limited in its scope for analysis of sub-baccalaureate study as it relates to labor market value.

As shown in Figure 2, the ACS (2012) reports that almost one third of the population (30.11%) ages 25–64 have completed "some college"—that is, some type of education after high school but less than a formal bachelor's degree. Nine percent earned an associate degree, and approximately 21% are classified as "some college," without significant variation across regions. The data reveal that 30% possess a bachelor's degree or higher, while 40% have earned the equivalent of a high school diploma or less.<sup>6</sup> The average across all states for individuals reporting their highest level of educational attainment as "some college" was 21.9%, with a median of 21.84%, and a range of 14.78 percentage points. Upon including individuals reporting an associate degree, the average jumps to 29.82%, with a median of 29.70%, and a range of 20.01 percentage points.

<sup>5</sup>For example, see U.S. Census Bureau (n.d.).

<sup>6</sup>For the distribution of "some college" by state using 2008–2012 data from the American Community Survey, see Appendix 1.

The Panel Study on Income Dynamics (PSID) identifies respondents who have received a certification, license, (non-high school) diploma, or certificate, as well as the attainment categories specified in the ACS. The field of study and type of awarding institution of respondent's credential is also collected. However, like the SIPP, the sample size for the PSID is relatively small, posing challenges for statistical analysis. Our analysis relies on three different data sources to investigate the relationship between education and annual earned income.<sup>7</sup> These include: the American Community Survey (ACS)<sup>8</sup>, the Panel Study of Income Dynamics (PSID),<sup>9</sup> and the Survey of Income Program Participation (SIPP).<sup>10</sup> Our outcome of interest is all earned income, which includes wage and salary income, farm income, and self-employed business income.

### CAN "SOME COLLEGE" REDUCE FUTURE EARNINGS INEQUALITY?

This analysis focuses on the relationship between education and earned income for those reporting "some college," but not completing their bachelor's or associate degree. As previously mentioned, the ACS does not identify those who have earned alternative forms of education, which may be "hidden" in the "one year of college" and "less than one year of college" attainment codes. The PSID and SIPP, on the other hand, allow us to investigate the relationship between certificates and earned income. The focus of our analysis is on the 2011 PSID, as it is the most recent panel available, and the 2008, wave 13 (calendar year 2012) of the SIPP, because of the previously mentioned topical module including detailed information on certificate type.

Although the ACS and SIPP are nationally representative, the PSID oversampled low-income families in 1968 and then followed them and their posterity. However, as seen in the figures, the relationship between education and income is very similar. Figure 3 shows that higher levels of educational attainment are associated with higher median earned income.<sup>11</sup> Focusing on the ACS, higher levels of educational attainment are associated with higher levels of median income, and with the exception of relatively higher median income for those with less than a year of college in 1970 and 1980, the positive relationship between education and income has not changed much over the last 40 years.<sup>12</sup> The PSID panel reveals that each additional year of college, even for those who did not earn a degree (*No1Dyr* to *No3Dyr*), is associated with higher median income. There is a 9.4% difference in median earned income between those completing one year of college without a degree and those earning a high school degree (median of \$32,000 for high school and \$35,000 for one year of college), although the percent difference in median income is smaller when comparing one to two years (8.6%) and two to three years (5.3%) of college education. There is a relatively large difference in income (9.5%) for those with an associate

<sup>7</sup>See Appendix 2 for a description of data preparation.

<sup>8</sup>Ruggles et al. (2014). For more on the ACS, see [http://www.census.gov/acs/www/guidance\\_for\\_data\\_users/subjects/](http://www.census.gov/acs/www/guidance_for_data_users/subjects/)

<sup>9</sup>PSID (2014). For more on the PSID, see <http://psidonline.isr.umich.edu/Studies.aspx>

<sup>10</sup>U.S. Department of Commerce (2014). For more on the SIPP, see <http://www.nber.org/data/survey-of-income-and-program-participation-sipp-data.html> and <http://www.census.gov/sipp/>

<sup>11</sup>Note that the results in this article are descriptive in nature and as mentioned in the literature review are subject to selection bias; for instance, we show that those earning certain degrees/certificates earn at least as much as bachelor's degree holders, but cannot make the statement that these degrees will causally increase the recipient's earnings because this is not tested.

<sup>12</sup>See Appendix 3 for historical box plots from 1970 to 2010.

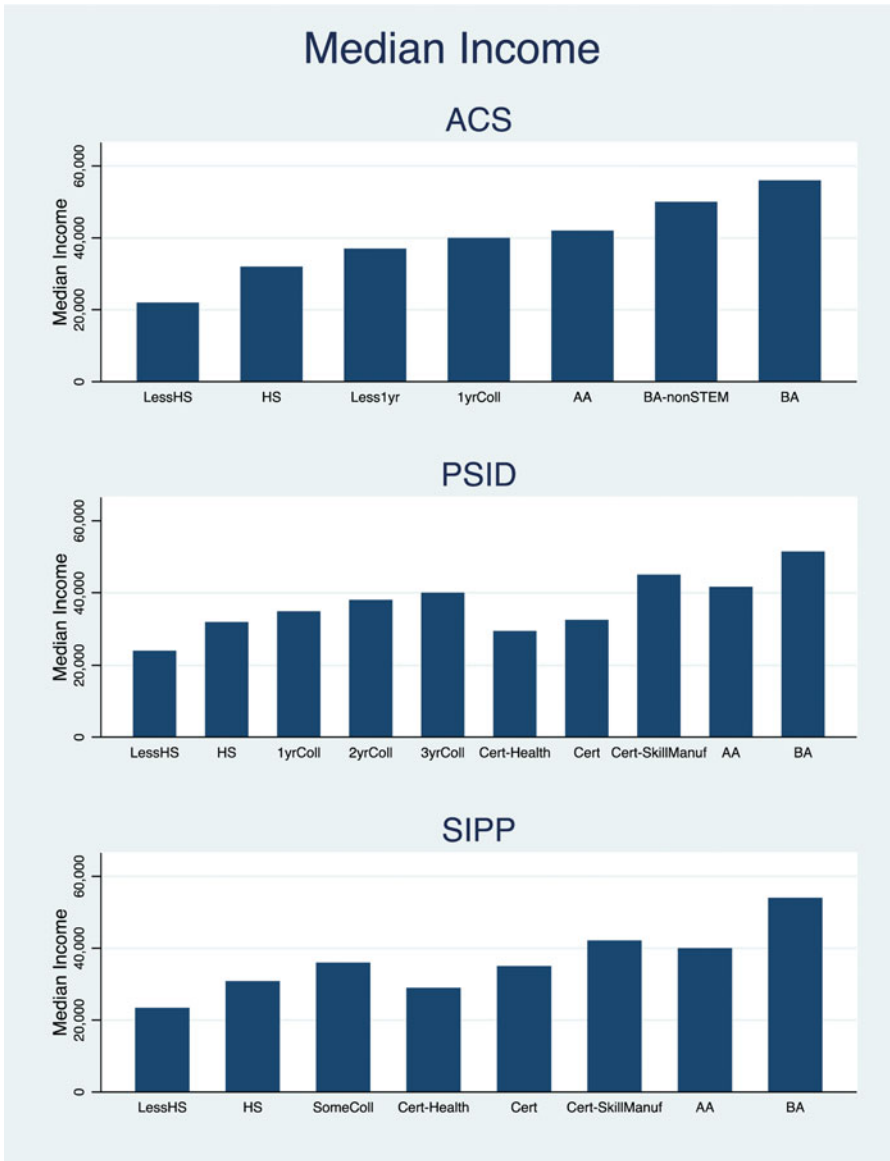


FIGURE 3 Median income by educational attainment. *Note.* The outcome is all earned income (wage and salary income plus farm and self-employment income). The bar graphs depict the median level of income for each educational attainment category. The sample includes 25- to 64-year-olds, working 52 weeks (or 35+ hours per week in the SIPP), usually working at least one hour per week, and with positive earned income. *Source:* U.S. ACS (2012), PSID (2011), SIPP 2008 Wave 13 (2012).

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degree compared to those with two years of college without a degree (median of \$38,000 for two years of college compared to \$41,622 for associate degree), indicating that sheepskin effects may also be important at lower levels of college education. The median for certificate holders is only slightly above that of high school degree holders (\$32,600 compared to \$32,000). However, just as there is a high degree of heterogeneity across bachelor's degree majors, there is also a significant amount of heterogeneity across certificate types. The PSID and SIPP show that certificate holders do not appear to earn much more than those with a high school degree, unless the certificate is in skilled manufacturing or law enforcement (not pictured), while those with a health-related certificate appear to fare worse than high school diploma holders.

Because the analysis confirms that those with higher levels of education have higher median income, we next analyze the amount of income overlap between those with lower levels of education and those with a bachelor's degree. The box plots in Figure 4 are graphical tools to visualize key statistical measures, such as the median and the first and third quartiles of the income distribution. The box plots show differences in the median as well as variation in the distribution of income across the different educational attainment categories. Although a bachelor's degree is associated with the highest median earned income, the box plots in Figure 4 reveal that there is a relatively large amount of overlap with lower levels of college education. To focus more on this overlap, we provide the proportion of those in each educational category that earn more than the median for bachelor's degree holders (calculated separately for each data set) in Figure 5.<sup>13</sup> All data sets show that roughly 30% of associate degree holders earn more than the median bachelor's degree holder, while this is only true for 5% to 12% of those with less than a high school degree. The PSID and SIPP panels show that 32% to 40% of those earning a certificate in skilled manufacturing earn more than the median bachelor's degree holder. These findings indicate that a large portion of individuals with less educational attainment than a bachelor's degree earn income higher than the "typical" bachelor's degree holder. It is important to highlight that due to the small number of observations in the PSID and SIPP, future research must investigate the relationship between the type of certificate and earned income using the forthcoming Census's certificate data.

#### "SOME COLLEGE" AND EARNINGS: IMPLICATIONS FOR POLICY AND PRACTICE

What do the data and evidence about "some college" tell us? Maybe "some types" of "some college" might reduce earnings inequality? If some high school students are able to increase their labor market value with less debt, are we making strides toward reducing earnings inequality? What public policies do they point to for the future? What types of information would help parents and young adults make future educational choices?

Further understanding of variation in earnings within education categories is critical to equip young adults to make decisions about investing in education, particularly given that the costs of education are significant. Two thirds of college seniors who graduated in 2010 had student loan

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<sup>13</sup>For further information, see Appendix 4.

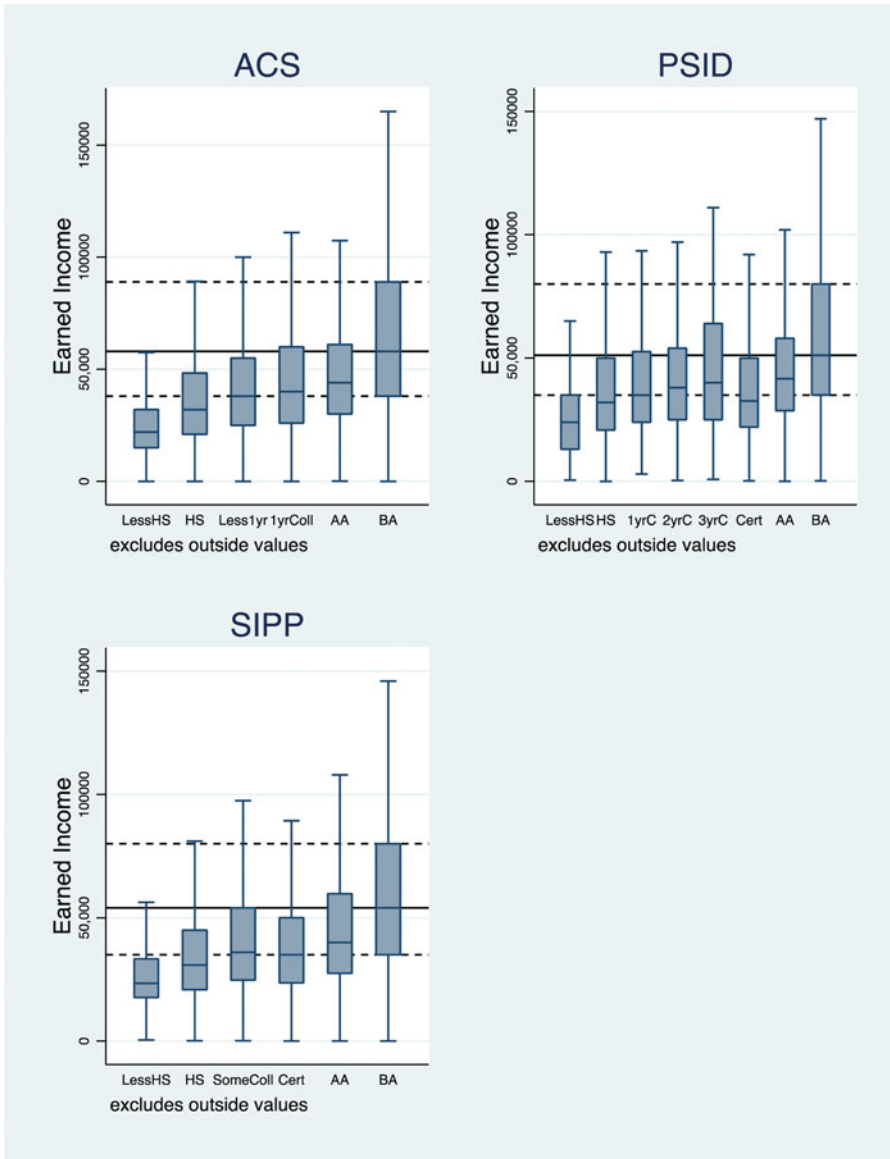


FIGURE 4 Box plots of earned income by educational attainment. *Note.* The outcome is all earned income (wage and salary income plus farm and self-employment income). The box plots depict the 25th to 75th percentile, with the solid line within the box representing the median. The sample includes 25- to 64-year-olds, working 52 weeks (or 35+ hours per week in the SIPP), usually working at least one hour per week, and with positive earned income. *Source.* U.S. ACS (2012), PSID (2011), SIPP 2008 Wave 13 (2012).

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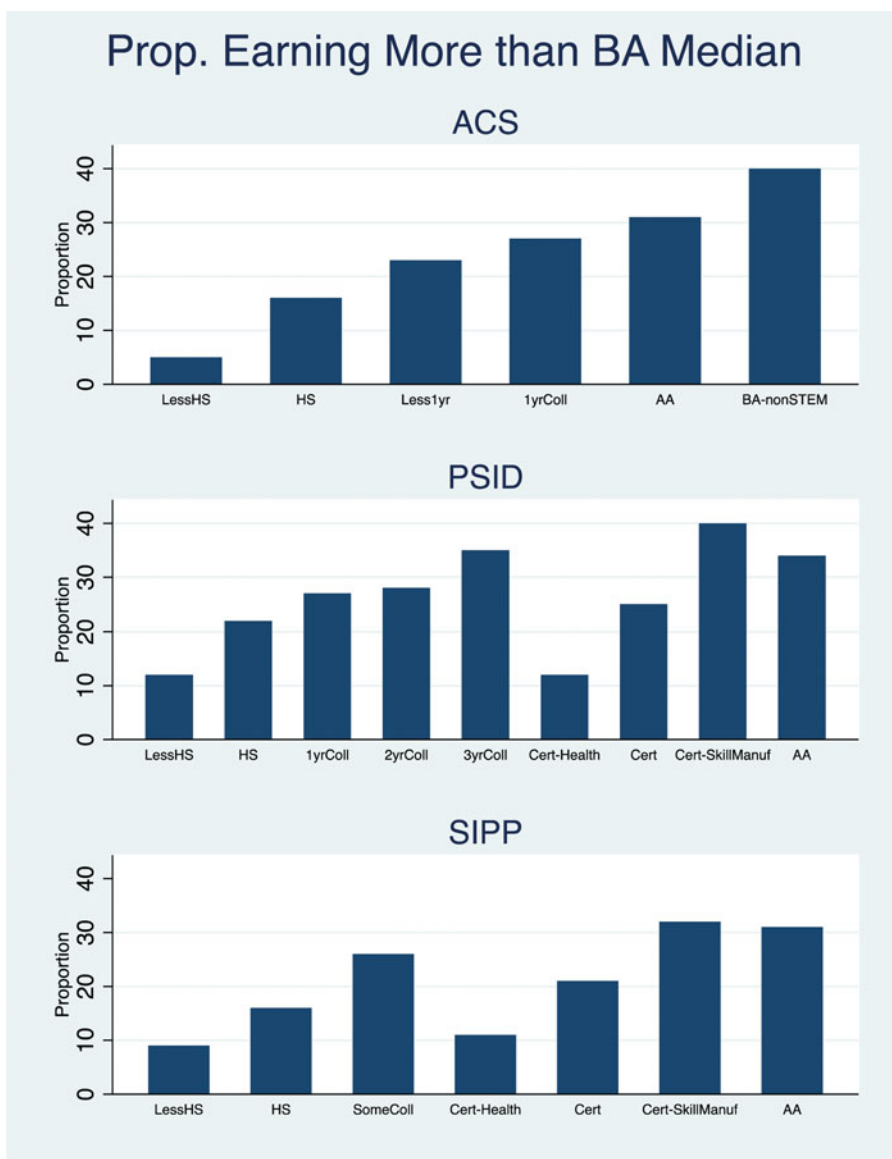


FIGURE 5 Proportion earning more than BA median. *Note.* The outcome is all earned income (wage and salary income plus farm and self-employment income). The bar graphs depict the proportion of individuals with each educational attainment earning at least as much as the median level of income for a bachelor's degree (calculated separately for each data set). The sample includes 25- to 64-year-olds, working 52 weeks (or 35+ hours per week in the SIPP), usually working at least one hour per week, and with positive earned income. *Source.* U.S. ACS (2012), PSID (2011), SIPP 2008 Wave 13 (2012).

debt, with the average amount of debt approximately \$25,250 (Reed, 2011). Prospective students must increasingly consider the labor market returns to education against the debt their earnings must service.

If a certificate or associate degree can provide some with equal or better earnings at a lower cost (and thus lower debt burden), as our data indicate, lower levels of educational attainment may be more appropriate for some people rather than a four-year degree. Some certificate-holders' earnings, particularly those in STEM (science, technology, engineering, and mathematics) fields are already comparable to workers with college degrees, although there is wide variation in the earnings for certificate holders based on gender, field of study, and occupation. "Middle-skill" jobs, which require more than a high school diploma but not a four-year degree, already make up a significant part of the labor market (National Skills Coalition, n.d.) and may represent a viable option for some young adults.

Policymakers, educators, and parents must pay particular attention to the fit between educational qualifications and future labor market opportunities, and researchers must advance understandings of the relative gains of various levels of educational attainment. What information is already available? For one example, the U.S. Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. The BLS education and training system allows for a fuller understanding of the preparation needed for entry into and competency in a given occupation by examining the work experience in related occupations as well as the on-the-job training and the required education. Policymakers, education leaders, high school and postsecondary students, their teachers, counselors, and parents who face future choices can use this information to help align their individual education and career plans with future occupational trends and employment opportunities.

Our knowledge of the "some college" category and its implications for earnings await more attention. Researchers must become increasingly interested in measuring the effect of "some college" on an individual's economic, educational, and career trajectory. Securing a formal degree is not the only pathway through which people receive training and develop skills that pay off in the labor market. In addition to, or instead of, regular schooling, people do earn educational certificates, professional certifications or licenses, or participate in noncredit courses, on-the-job training, or apprenticeships (Ewert & Kominski, 2014). Further research is needed to identify which certificate investments will produce a high return on investment and meet workforce needs. New evidence can shift stale political debates and offer opportunities for policy reform.

Most policy-oriented scholars agree that everyone should have access to some form of postsecondary education or training. That is, every capable and interested student should be afforded the opportunity to attend college or to complete some kind of postsecondary credential with relevance to the labor market (e.g., certificates, diplomas, apprenticeships, associate degrees). However, by relying on existing data and only focusing on level of educational attainment (receipt of a high school or college degree), we emphasize how long a student spent acquiring a credential as opposed to exactly what he or she knows. Learning cannot stop once we have a diploma in hand. A formal education can serve as the foundation for productive work. Job experience and training can build on it. Education policymakers must remain focused on the knowledge and skills required for workers in today and tomorrow's economy. This necessitates not only a nuanced understanding of the needs of both students and their prospective employers, but also the promotion of more varied educational pathways to labor market success, and, consequentially, reducing inequality.



Every young adult should be armed with the knowledge to make an informed decision about the postsecondary path that will best improve his or her future labor market success.

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Appendix 1: Educational Attainment (Proportion of Population) by State, 2008—2012

State	Total	HS diploma or GED	Some college, less than one year, no degree	Some college, one or more years, no degree	Associate degree	Bachelor 's degree	Master 's degree	Professional/ doctorate degree
Alabama	3,166,424	31.31%	<b>6.00%</b>	<b>15.85%</b>	<b>7.18%</b>	14.15%	5.78%	2.33%
Alaska	447,543	27.10%	<b>7.69%</b>	<b>21.43%</b>	<b>7.89%</b>	17.75%	6.86%	2.86%
Arizona	4,149,955	24.40%	<b>7.62%</b>	<b>18.61%</b>	<b>8.18%</b>	16.92%	6.95%	2.76%
Arkansas	1,921,039	35.12%	<b>6.69%</b>	<b>15.63%</b>	<b>6.06%</b>	13.15%	4.68%	1.97%
California	24,117,317	20.68%	<b>5.87%</b>	<b>16.30%</b>	<b>7.72%</b>	19.35%	7.32%	3.78%
Colorado	3,328,869	22.36%	<b>6.41%</b>	<b>16.42%</b>	<b>8.06%</b>	23.45%	9.60%	3.62%
Connecticut	2,431,340	27.86%	<b>5.40%</b>	<b>12.24%</b>	<b>7.30%</b>	20.33%	11.37%	4.46%
Delaware	603,331	31.64%	<b>6.49%</b>	<b>13.82%</b>	<b>7.21%</b>	17.09%	8.03%	3.40%
District of Columbia	417,432	19.06%	<b>3.40%</b>	<b>10.94%</b>	<b>2.92%</b>	22.51%	16.60%	12.10%
Florida	13,127,624	29.83%	<b>6.54%</b>	<b>14.57%</b>	<b>8.72%</b>	16.81%	6.34%	3.02%
Georgia	6,242,508	28.93%	<b>5.67%</b>	<b>15.31%</b>	<b>6.76%</b>	17.71%	7.04%	3.01%
Hawaii	928,132	28.40%	<b>5.41%</b>	<b>17.05%</b>	<b>9.79%</b>	19.57%	6.59%	3.45%
Idaho	986,172	27.95%	<b>8.51%</b>	<b>18.77%</b>	<b>8.66%</b>	16.96%	5.33%	2.42%
Illinois	8,459,947	27.20%	<b>6.70%</b>	<b>14.64%</b>	<b>7.35%</b>	19.30%	8.53%	3.25%
Indiana	4,229,138	35.42%	<b>6.76%</b>	<b>14.12%</b>	<b>7.71%</b>	14.74%	5.97%	2.28%
Iowa	2,013,629	33.11%	<b>7.71%</b>	<b>14.21%</b>	<b>10.32%</b>	17.54%	5.38%	2.41%
Kansas	1,838,079	27.81%	<b>8.22%</b>	<b>16.18%</b>	<b>7.52%</b>	19.56%	7.60%	2.83%
Kentucky	2,902,296	34.04%	<b>6.62%</b>	<b>13.89%</b>	<b>6.89%</b>	12.47%	6.06%	2.45%
Louisiana	2,940,298	34.30%	<b>5.53%</b>	<b>15.86%</b>	<b>5.07%</b>	14.30%	4.75%	2.37%
Maine	938,624	34.21%	<b>6.25%</b>	<b>13.84%</b>	<b>8.97%</b>	17.57%	6.91%	2.84%
Maryland	3,875,282	26.02%	<b>6.07%</b>	<b>13.82%</b>	<b>6.24%</b>	19.98%	11.08%	5.27%
Massachusetts	4,465,898	25.90%	<b>5.06%</b>	<b>11.49%</b>	<b>7.72%</b>	22.15%	11.73%	5.09%
Michigan	6,578,519	30.73%	<b>7.93%</b>	<b>16.12%</b>	<b>8.39%</b>	15.72%	7.19%	2.62%
Minnesota	3,525,850	27.11%	<b>6.84%</b>	<b>15.68%</b>	<b>10.02%</b>	21.78%	7.21%	3.24%
Mississippi	1,904,849	30.41%	<b>5.75%</b>	<b>16.85%</b>	<b>8.03%</b>	12.76%	5.07%	2.14%
Missouri	3,973,614	31.72%	<b>7.49%</b>	<b>15.35%</b>	<b>6.86%</b>	16.16%	6.91%	2.70%
Montana	671,337	30.23%	<b>6.85%</b>	<b>18.22%</b>	<b>8.08%</b>	19.70%	5.84%	2.94%
Nebraska	1,184,668	28.67%	<b>7.93%</b>	<b>16.37%</b>	<b>9.36%</b>	19.03%	6.27%	2.80%
Nevada	1,791,029	28.72%	<b>7.31%</b>	<b>18.83%</b>	<b>7.31%</b>	14.78%	5.10%	2.33%
New Hampshire	907,338	29.28%	<b>6.09%</b>	<b>13.04%</b>	<b>9.59%</b>	21.16%	9.17%	3.11%
New Jersey	5,969,516	29.17%	<b>5.09%</b>	<b>12.06%</b>	<b>6.19%</b>	22.02%	9.55%	3.81%
New Mexico	1,333,926	26.37%	<b>6.11%</b>	<b>17.84%</b>	<b>7.48%</b>	14.63%	7.59%	3.41%
New York	13,101,982	27.31%	<b>4.67%</b>	<b>11.78%</b>	<b>8.32%</b>	18.64%	10.08%	4.07%
North Carolina	6,324,119	27.24%	<b>6.50%</b>	<b>15.35%</b>	<b>8.59%</b>	17.82%	6.37%	2.65%
North Dakota	442,789	27.23%	<b>6.56%</b>	<b>17.30%</b>	<b>12.34%</b>	19.63%	5.15%	2.28%
Ohio	7,715,893	34.93%	<b>7.03%</b>	<b>13.83%</b>	<b>7.69%</b>	15.65%	6.54%	2.54%
Oklahoma	2,438,321	31.72%	<b>7.38%</b>	<b>16.94%</b>	<b>6.91%</b>	15.57%	5.42%	2.24%
Oregon	2,612,044	24.78%	<b>8.52%</b>	<b>18.47%</b>	<b>8.15%</b>	18.49%	7.41%	3.34%
Pennsylvania	8,658,872	37.21%	<b>5.54%</b>	<b>11.00%</b>	<b>7.50%</b>	16.62%	7.30%	3.13%
Rhode Island	709,683	27.48%	<b>5.36%</b>	<b>13.01%</b>	<b>8.15%</b>	18.58%	8.63%	3.55%
South Carolina	3,075,655	30.30%	<b>6.01%</b>	<b>14.60%</b>	<b>8.57%</b>	15.81%	6.38%	2.36%
South Dakota	531,773	31.89%	<b>6.37%</b>	<b>15.95%</b>	<b>9.86%</b>	18.27%	5.32%	2.46%
Tennessee	4,250,890	32.96%	<b>6.37%</b>	<b>14.83%</b>	<b>6.22%</b>	15.17%	5.70%	2.62%
Texas	15,765,048	25.29%	<b>6.34%</b>	<b>16.45%</b>	<b>6.43%</b>	17.51%	6.24%	2.51%
Utah	1,578,143	23.88%	<b>8.08%</b>	<b>19.48%</b>	<b>9.34%</b>	20.12%	6.85%	2.89%
Vermont	431,581	31.22%	<b>5.47%</b>	<b>11.75%</b>	<b>8.61%</b>	20.73%	9.62%	3.86%
Virginia	5,356,571	25.25%	<b>6.00%</b>	<b>14.17%</b>	<b>6.86%</b>	20.27%	10.45%	3.97%
Washington	4,507,469	23.59%	<b>8.05%</b>	<b>17.30%</b>	<b>9.47%</b>	20.20%	8.00%	3.37%
West Virginia	1,292,274	40.93%	<b>5.79%</b>	<b>12.66%</b>	<b>6.11%</b>	11.01%	4.86%	2.04%
Wisconsin	3,800,291	33.13%	<b>6.86%</b>	<b>14.41%</b>	<b>9.36%</b>	17.47%	6.39%	2.54%
Wyoming	371,096	30.55%	<b>8.66%</b>	<b>18.61%</b>	<b>10.00%</b>	16.17%	5.85%	2.24%

Source. U.S. ACS (2012).

## Appendix 2: Data Cleaning

**Common data restrictions:**

Between 25 and 64 years old

Not currently enrolled in school

Working full time (52 weeks or 35+ hours per week in SIPP) and usually working at least one hour per week

Has positive, nonimputed income

Educated in the United States

**American Community Survey (ACS)—2012**

Income: *INCEARN* variable from IPUMS.org, including wage income, business income, and farm income.

Educational Attainment Codes: Less than high school (*LessHS*); high school completion by either GED or diploma (*HS*); less than one year of college (*Less1yr*); one year of college (*1yrCollege*); associate degree (*AA*); and bachelor's degree (*BA*). We also include non-STEM-related bachelor's degrees (*BA-nonSTEM*).

**Panel Study of Income Dynamics (PSID)—2011**

Income: wage and salary income (bonuses, overtime, tips, commission, professional practice, and garden income), farm income, and business profits

Educational Attainment Codes: The attainment codes are similar to the ACS but differ by including each year of college separately (*1yrColl* to *3yrColl*) for those not earning a bachelor's degree, associate degree, or certificate (*Cert*). The analysis also separately identifies skilled manufacturing (*Cert-SkillManuf*) and health-related certificates (*Cert-Health*). "Skilled manufacturing" certificate types are construction/building trades, machine operator, technician, and skilled crafts (mechanic/repairperson). We limit the sample of certificate holders to have earned their certificate at all institutions except "training by private employer" and "other" in the PSID.

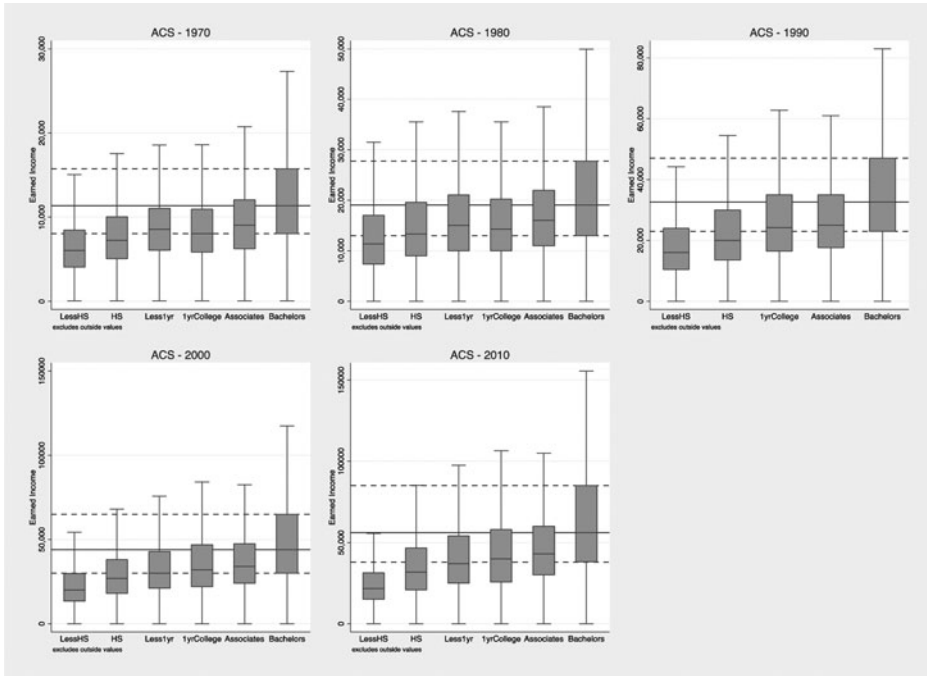
Questions for the spouse of the head of household are directed only to the wife, suggesting the data assumes the head of the household is a man if respondents are married. Only 1.82% of all female heads of households are married. For this reason, we created new observations using information on the head's spouse.

**Survey of Income and Program Participants (SIPP)—2008, Wave 13 (2012)**

Income: Convert monthly total earnings into annual earnings by averaging nonzero values across all available waves in which the respondent worked 35+ weeks and then multiply by 12

Educational Attainment Codes: There are fewer codes than the ACS, but the SIPP does include the supplemental certificate data. "Skilled manufacturing" certificate types are architecture, engineering, construction, manufacturing, and mechanic. The highest educational attainment for those with certificates who do not have a high school diploma or GED has been recategorized as having a certificate.

Appendix 3: Historical Box Plots – ACS, 1970–2010



*Note.* The outcome is all earned income (wage and salary income plus farm and self-employment income). The box plots depict the 25th to 75th percentile, with the solid line within the box representing the median. The sample includes 25- to 64-year-olds, working full time (52 weeks), usually working at least one hour per week, and with positive earned income. Note that 1990 does not include “less than one year of college.”

*Source.* U.S. ACS (1970–2010).

## Appendix 4. Median and Proportion Earning Above Bachelor's Degree Median

	ACS			PSID			SIPP		
	Median	Prop > BA	N	Median	Prop > BA	N	Median	Prop > BA	N
Less high school	\$22,000	5%	29,623	\$24,000	12%	249	\$23,388	9%	1,356
High school	\$32,000	16%	180,017	\$32,000	22%	1,592	\$30,828	16%	5,181
Less one year	\$38,000	23%	49,772						
Some college							\$36,000	26%	2,894
1 year college				\$35,000	27%	375			
1+ years college	\$40,000	27%	103,027						
2 years college				\$38,000	28%	453			
3 years college				\$40,000	35%	178			
Certificate—Health				\$29,500	12%	132	\$28,968	11%	243
Certificate				\$32,600	25%	593	\$35,004	21%	3,145
Certificate—Skill manuf				\$45,000	40%	148	\$42,150	32%	248
Associate's degree	\$44,000	31%	71,295	\$41,622	34%	594	\$39,996	31%	2,374
Bachelor's— nonSTEM	\$50,000	40%	90,118						
Bachelor's degree	\$58,000		169,986	\$51,440		1,481	\$54,000		5,504
Bachelor's—Business	\$62,000	57%	46,948						
Bachelor's—STEM	\$77,000	69%	32,920						

*Note.* The outcome is all earned income (wage and salary income plus farm and self-employment income). The Prop > BA is the proportion of individuals with each education attainment earning at least as much as the median level of income for a bachelor's degree (calculated separately for each data set). The sample includes 25- to 64-year-olds, working 52 weeks (or 35+ hours per week in the SIPP), usually working at least one hour per week, and with positive earned income.

*Source.* U.S. ACS (2012), PSID (2011), SIPP 2008 Wave 13 (2012).