

## What's Your College Degree Worth? Race and Gender Inequities in Lifetime Earnings

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Postsecondary education increases an individual's lifetime earnings. Based on 2018 estimates, the average U.S. resident with a bachelor's degree earned \$1.2 million more than a high school graduate over the course of their working life. This additional earning power is significant, securing the ability to retire and build wealth for those with higher qualifications. But obtaining higher education requires an initial investment of both money and time. The average cumulative cost of tuition for a public four-year institution in 2019 was just under \$42,000 and the average college student took on \$31,000 in loans to finance that education.

Instead of joining the workforce directly after high school, students sacrifice years of full-time income with the hopes that they will receive a return on their investment. It is important to estimate the degree to which higher education increases lifetime earnings, especially between demographic groups with known income disparities and other barriers to entry. Calculating differences in synthetic work-life earnings, or the projected cumulative earnings throughout an individual's working lifetime, highlights these inequities.

The Selig Center's synthetic work-life earnings estimates are based on median personal earned income (earnings) data from the U.S. Census Bureau's most recent five-year *American Community Survey* (2014-2018 ACS 5-Year Estimates). The estimates are based on individual earnings data gathered at one point in time rather than longitudinal and include people who maintained full-time (35 or more hours per week), year-round (50-52 weeks per year) employment. People who do not work full-

time, or who do not work, earn considerably less over the course of their work-life.

We calculated work-life earnings using the method described by the Census Bureau's Economic and Statistics Administration: *Work-Life Earnings by Field of Degree and Occupation for People with a Bachelor's Degree: 2011* (ACSBR-11-04). First, we used IBM SPSS Statistics to estimate the median earnings for each group of the population engaged in full-time, year-round work by age ranges: 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. Medians were also calculated by education level. Medians for each age range and education level were multiplied by 5 to represent the expected amount of money earned in that particular range. The five-year earnings' estimates for all age ranges were added together to represent 40 years of earnings. The totals represent what individuals within each group with the same education level could expect to earn, on average, in 2018 dollars, during a hypothetical 40-year working life. The estimates are illustrative and do not predict any individual's actual future earnings. Synthetic work-life earnings were calculated this way for sub-groups of the population: whites, blacks, Hispanics, non-Hispanics, men, and women.

### The Gender-Pay Gap

The gender-pay gap between men and women in the United States is well-known. In 2018, women earned 18 percent less than men according to the U.S. Census Bureau's real median earnings estimates of full-time, year-round workers. Across all education levels, our synthetic work-life estimates showed a similar gender-pay gap.

Women earned \$1.76 million over the course of a 40-year working lifetime while men earned \$2.22 million, for a difference of 21 percent. The Selig Center's research built upon previous findings by controlling for education level and extrapolating earnings over the course of a 40-year working lifetime.

One would expect the gender-pay gap to narrow when controlling for education level. But women in the U.S. are more educated than men on average: 53.5 percent of women have an associate degree or higher compared to 44.4 percent of men. According to our synthetic work-life estimates, the doctoral degree is the only education level at which the pay gap narrows to 17 percent. It widens at all other education levels and is widest at one of the lowest education levels—women with only some high school education make 29 percent less over the course of their working life than men with the same credentials. At both the high school graduate and bachelor's degree level, women's work-life earnings are 27 percent lower than those of men. The gap also widens at the master's and professional degree levels, for a difference of 28 percent. These results did not account for other variables such as field of study or work history gaps due to raising children, but it is clear that postsecondary education pays off significantly less for women than men, especially over the course of an entire working lifetime.

## Gender-and-Race Pay Gaps

There is also a well-known pay gap between whites and minorities. Our synthetic work-life earnings estimated that blacks earn \$1.62 million over the course of a 40-year working lifetime while whites earn \$2.09 million, for a difference of 22 percent. This race-pay gap is very slightly larger than the gender-pay gap between men and women. Unlike the gender-pay gap, however, the race-pay gap narrows when accounting for education level, with a few exceptions. At the lowest education level (none to 8<sup>th</sup> grade), the race-pay gap (1 percent) is almost nonexistent. At the high school graduate level, the gap is 18 percent. The gap widens to 22 percent at the bachelor's degree level, on par with the overall gap across all education levels. Master's and doctoral degrees narrow the gap to 1 percent and 16 percent, respectively. At the professional degree level, the race-pay gap is at its widest (26 percent). It is clear that at each level of education, blacks experience a lower payoff than whites. The difference is sharpest when it comes to the professional degree. It may be that blacks pursue professional degrees leading to lower-paying career fields, or there may just be a premium for whites with professional degrees.

Across all education levels, Hispanics earn \$1.46 million over the course of their working lifetime while non-Hispanics earn \$2.1 million—a difference of 31 percent. Although this gap is wider than both the gender- and race-pay gaps, unlike the others, the gap between Hispanics and non-His-

panics narrows when accounting for education level. This is due to the relatively low level of educational attainment among Hispanics in the U.S.: 53.7 percent of Hispanics have a high school diploma or less, compared to 26.7 percent of non-Hispanics. At the high school graduate level, the work-life earnings gap between Hispanics and non-Hispanics is 14 percent. The gap is narrowest at the associate degree level (9 percent). At the bachelor's, master's, and doctoral degree levels, work-life earnings gaps are 20 percent, 10 percent, and 15 percent, respectively. Interestingly, the gap in work-life earnings between Hispanics and non-Hispanics is widest (26 percent) at the professional degree level which is exactly the same as the gap between whites and blacks. Becoming more educated clearly pays off for non-Hispanics, but narrower gaps when accounting for education level shows that education makes Hispanics more competitive with their non-Hispanic counterparts. Further research is needed to study the types of professional degrees obtained by women, blacks, and Hispanics as the professional degree level consistently exhibits the highest discrepancy in synthetic work-life earnings.

When specifying groups by both race and sex, it is unsurprising that white men have the highest synthetic work-life earnings. Across all education levels, white men make \$2.31 million over the course of their working lifetime. When controlling for education level, the gap between white men and all other race/sex combinations widens as the level of education increases. At the lowest education level (zero to 8<sup>th</sup> grade), the gap in work-life earnings between white men and the next closest group, black men, is almost non-existent (1 percent). Moving up to a high school diploma, the gap widens to 19 percent. White men with a bachelor's degree make 28 percent more than black men over the course of a 40-year working lifetime. Again, the professional degree level shows the highest discrepancy. White men with a professional degree make 29 percent more than white women, 3 percent more than black men, and 38 percent more than black women with that same credential.

While white men consistently have the highest synthetic work-life earnings, black women consistently have the lowest. Across all education levels, black women make \$1.53 million, 34 percent less than white men. When accounting for education level, black women have the lowest work-life earnings of all race/sex combinations except at the zero-to-8<sup>th</sup> grade education level where white women have the lowest work-life earnings (\$876,680). Starting at the 9<sup>th</sup> to 12<sup>th</sup> grade education level, black women make at least 33 percent less than white men. This gap widens to 37 percent at the bachelor's degree level, then widens once more to 38 percent at the professional degree level. The work-life earnings gap between white men and black women only narrows to 24 percent at the doctoral level.

Across all education levels, white women make 5 percent more than black men over the course of a working life-

time. Black men and white women also have very similar synthetic work-life earnings at the bachelor's and higher degree levels. The gap in earnings between black men and white women with a bachelor's degree is almost nonexistent. The gap widens to 7 percent at the master's degree level, with black men making just about \$31,000 more over the course of a 40-year working lifetime. At both the professional and doctoral degree levels, white women make 2 percent more.

When separating groups by both Hispanic origin and sex, again it is unsurprising that non-Hispanic men have the highest synthetic work-life earnings (\$2.36 million across all education levels). Non-Hispanic men maintain their lead in work-life earnings when controlling for education level, with the largest discrepancy occurring at the professional degree level. Hispanic women have the lowest synthetic work-life earnings (\$1.32 million across all education levels). Work-life earnings of Hispanic and non-Hispanic women are closest at the 'some college', associate, and master's degree levels.

Increasing the average education level raises incomes overall, but significantly less so for historically disadvan-

tagged groups. Policymakers in education, economics, and social policy need to be made aware of these disparities and trends over time in order to best remediate them. Individuals seeking higher education qualifications must be informed of their projected return on investment before sacrificing time and money. After all, the choice to pursue higher education heavily influences quality of life and—ultimately—retirement. Based on the general rule of thumb that a person must have \$1 million to retire comfortably, minorities must attain at minimum a bachelor's degree before retirement becomes a possibility, whereas white males generally reach a comfortable level of work-life earnings with only some college education.

Although many pay gaps are narrower now, the fact that significant income disparities and therefore disparities in work-life earnings still exist is discouraging. Equal opportunity policies protecting minorities and women have been in place for almost 60 years. If our goal as a progressive society is to minimize these gaps and fairly compensate different demographic groups with the same qualifications, we must continue to pinpoint the widest gaps that deepen disadvantages.

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*Alexandra Hill is senior research analyst in the Selig Center; Jeffrey Humphreys is the Center's director.*

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**Table 1**  
**U.S. Synthetic Work-Life Earnings by Education Level, Race, and Gender**  
**(2018 Dollars)**

Education Level	Black		White	
	Women	Men	Women	Men
All	1,528,195	1,737,930	1,821,360	2,314,040
Grade 8	994,500	1,207,260	876,680	1,221,585
Grades 9-12	964,365	1,185,565	993,850	1,445,980
High school	1,167,245	1,448,665	1,286,835	1,798,340
Some college	1,398,980	1,726,750	1,529,405	2,158,890
Associate	1,505,780	1,858,095	1,733,110	2,307,475
Bachelor's	2,046,445	2,355,290	2,324,305	3,253,255
Master's	2,477,270	2,914,085	2,698,250	3,773,555
Professional	3,326,310	3,737,515	3,793,790	5,370,410
Doctoral	3,246,213	3,440,235	3,526,070	4,276,980

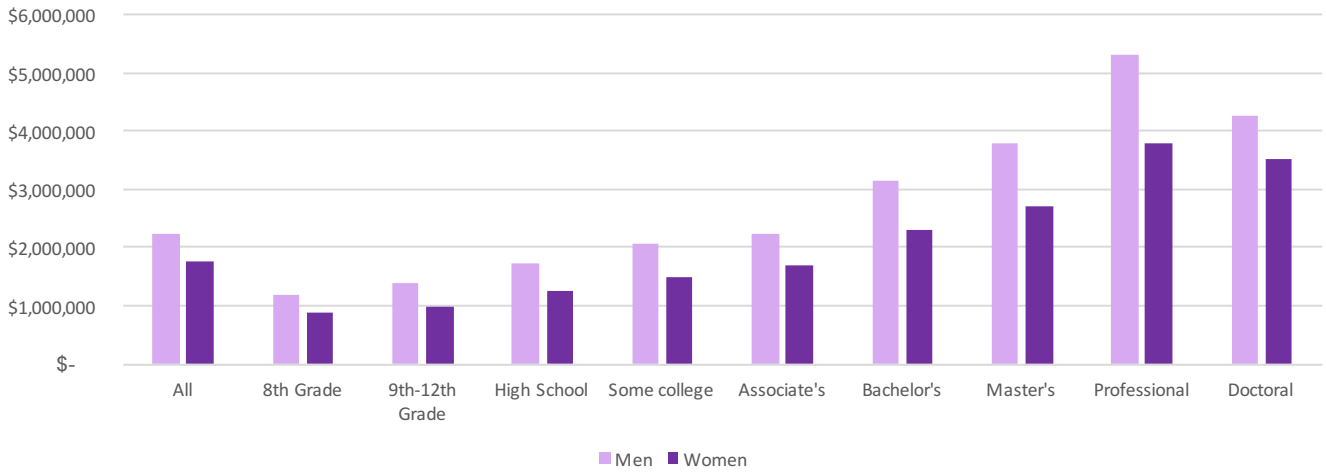
Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.

**Table 2**  
**U.S. Synthetic Work-Life Earnings by Education Level, Hispanic Origin, and Gender**  
**(2018 Dollars)**

Education Level	Hispanic		Non-Hispanic	
	Women	Men	Women	Men
All	1,315,565	1,562,758	1,834,240	2,364,945
Grade 8	834,780	1,156,635	1,033,095	1,420,930
Grades 9-12	919,145	1,284,980	1,027,115	1,462,260
High school	1,141,780	1,467,700	1,275,140	1,765,410
Some college	1,430,515	1,842,615	1,510,130	2,103,380
Associate	1,559,820	1,982,365	1,705,055	2,260,740
Bachelor's	1,990,810	2,499,045	2,335,350	3,213,600
Master's	2,565,110	3,287,005	2,719,880	3,809,320
Professional	3,014,145	3,896,545	3,846,505	5,379,425
Doctoral	3,022,185	3,642,110	3,552,810	4,275,570

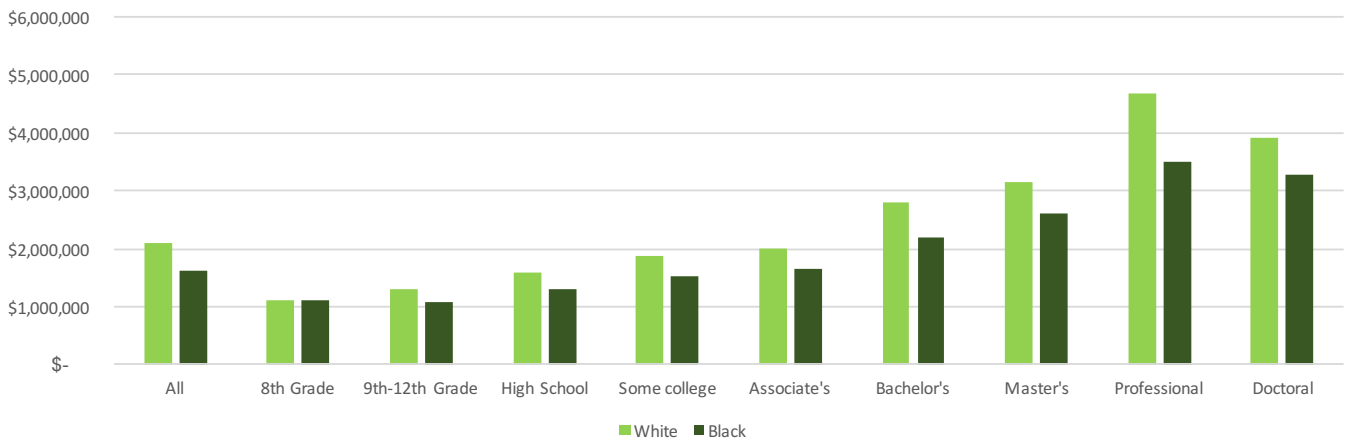
Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.

**Figure 1**  
**Synthetic Work-Life Earnings of Men vs. Women in the U.S.**  
**(2018 Dollars)**



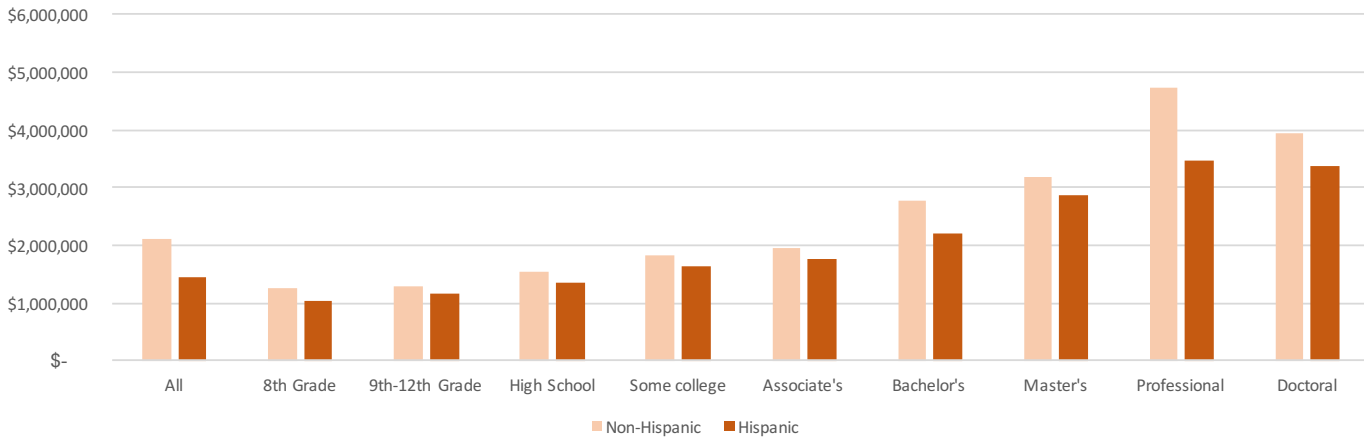
Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.

**Figure 2**  
**Synthetic Work-Life Earnings of Whites vs. Blacks in the U.S.**  
**(2018 Dollars)**



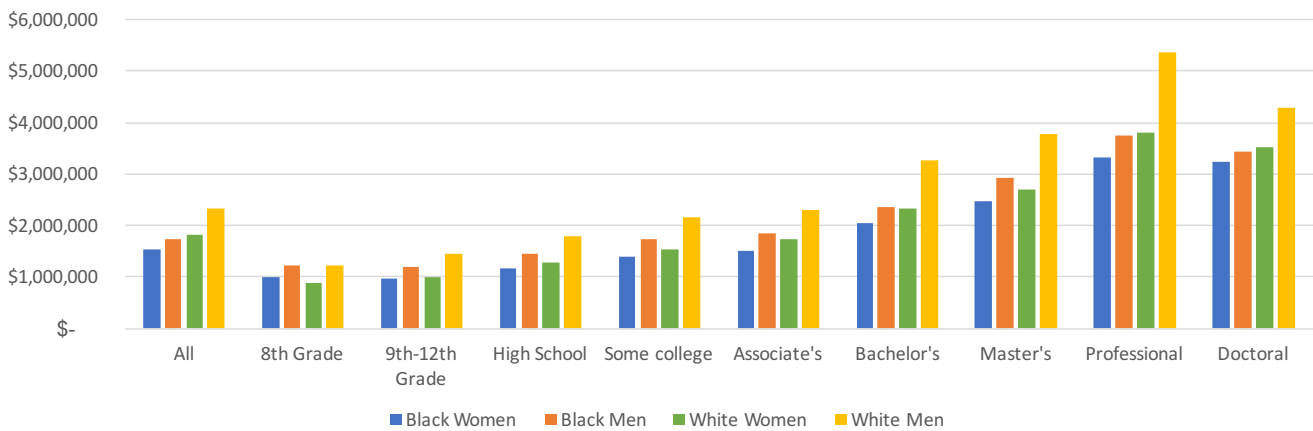
Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.

**Figure 3**  
**Synthetic Work-Life Earnings of Non-Hispanics vs. Hispanics in the U.S.**  
**(2018 Dollars)**



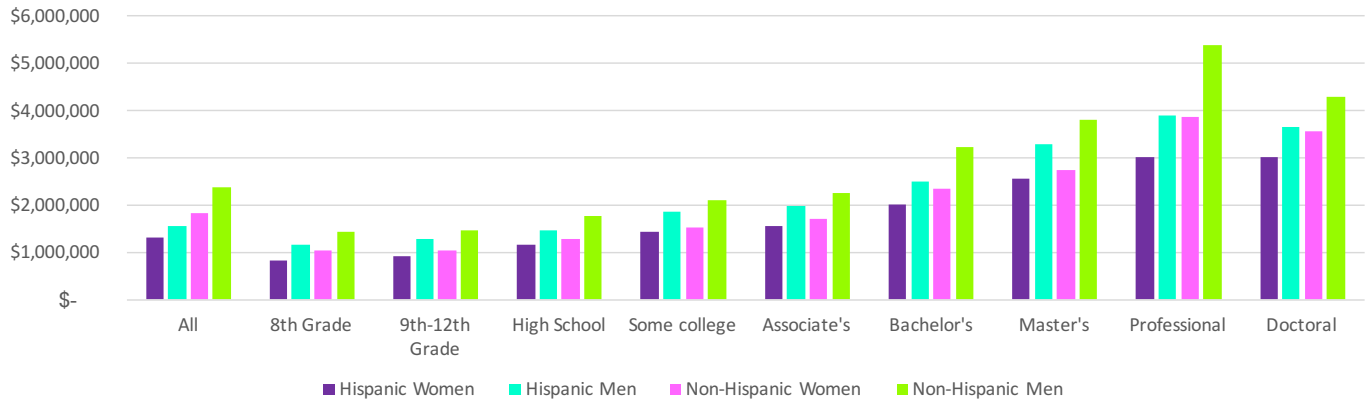
Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.

**Figure 4**  
**U. S. Synthetic Work-Life Earnings By Race and Gender**  
**(2018 Dollars)**



Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.

**Figure 5**  
**U. S. Synthetic Work-Life Earnings By Hispanic Origin and Gender**  
**(2018 Dollars)**



Source: Selig Center for Economic Growth, University of Georgia, based on U.S. Census Bureau, American Community Survey, 2014-2018 Five-Year Public Use Microdata Sample; IPUMS USA, University of Minnesota.



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