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MARYLAND
Governor's Workforce Investment Board

December 2020

Career Preparation Expansion Act

Annual Report to the Governor and General Assembly

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Governor

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Lieutenant Governor

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Suggested Citation
MLDS Center. (2020). *Career Preparation Expansion Act: Annual Report to the General Assembly and Governor Larry Hogan.* Baltimore, MD: Maryland Longitudinal Data System Center.

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EXECUTIVE SUMMARY

The requirements in the Career Preparation Expansion Act for this report are straightforward: analyze the wages earned, the hours worked per week, and the industry of employment for high school graduates five years after they graduate. The purpose of the report is also straightforward: it seeks to quantify how the recent graduates are doing during the early stages of their careers. However, these straightforward questions are complicated by the other significant factor in the lives of many recent high school graduates: postsecondary education. The first five years after high school is traditionally the time when high school graduates engage in college; and that is certainly the case with the cohort analyzed for this report. Notably, 77% of the high school graduates had or continue to have some involvement with college during the first five years after high school graduation. The impact of college on workforce outcomes is of critical importance and highlighted throughout this report.

Overall, 47% of the class of 2014 had full-quarter wages five years after high school, with median quarterly earnings of $6,160 – an amount that is approximately $1,500 below the quarterly living wage in Maryland for a single adult with no children. In comparison, the high school graduates who earned a Bachelor's degree had median quarterly wages that were almost $4,000 higher than the overall population and resulted in a quarterly wage that was $2,300 higher than the living wage. Certificate and Associate's degree earners also had median quarterly wages higher than the overall population by $1,700 and $960, respectively, which places the Certificate earners just over the Maryland living wage amount and the Associate's degree earners just under. Finally, the high school graduates with some college but no degree and those still in college had the lowest quarterly median wages, $5,500 and $4,900 respectively, which puts them both more than $2,000 below the Maryland living wage. This finding may not be surprising for the high school graduates who are still in college, since attending college may limit their options and level of engagement in a career track position. However, the high school graduates with some college demonstrate that there is no immediate return on the investment (both time and money) in college unless a degree is earned. And, unlike students who earned a degree, they do not have the financial reward of higher wages to offset any costs incurred with going to college.

The report also analyzes wages to determine the number of high school graduates that fall into each of the following wage bands: (1) at or below minimum wage, (2) between minimum wage and living wage, (3) between living wage and the state's median quarterly earnings, and (4) at or above the state median quarterly earnings. This analysis shows that the only group with a majority (65%) of high school graduates making a living wage or higher (bands 3 and 4) are the high school graduates with a Bachelor's degree. A majority high school graduates in all other groups had wages below the living wage (bands 1 and 2). Notably, 32% of high school graduates with some college had wages at or below minimum wage and 41% had wages between minimum wage and the living wage. This once again reinforces both the value of a college degree and the negative impact of attempting college, but not completing.

The requirement to report on the hours worked cannot be directly addressed with MLDS data since the source of wage data only includes the total wages earned per quarter. In the two prior reports, wage data were analyzed for each fiscal quarter after high school graduation to determine the number of

graduates with wage data in each fiscal quarter. This analysis provided insights into workforce patterns of the different educational attainment groups. In this year's report, a slightly different approach was used. This report focuses on the wage progression (i.e. wages at one year, three years, and five years after high school) for two groups of high school graduates: those with *No College* and those with *Some College* but no college degree. For both groups, the wages at one year post high school are below the minimum wage but show an increase at years three and five. However, only *No College* high school graduates who have steady wages for all five years had a living wage at year five. This may indicate that after high school they immediately entered a career track with an employer or in a particular field. Given the relatively low number of these high school graduates (less than 2,000 or 10% of all high school graduates without any college engagement), it also may suggest that these opportunities are limited.

The final reporting requirement is to identify the industry sector in which the high school graduates are employed. Generally, five years after high school, the sector with the largest percentage of high school graduates is *Trade, Transportation, & Utilities*, followed by *Leisure & Hospitality*. Once again, educational attainment has an impact on sector and wage outcomes. The *Trade, Transportation, & Utilities* sector was the largest employer of high school graduates for all educational attainment groups, except Bachelor's, for which the *Professional & Business Services* sector was the largest employer. Across all educational attainment groups, high school graduates in the *Goods-Producing* sector had the highest wages and those in the *Leisure & Hospitality* sector had the lowest wages.

This year's report contains two supplemental sections. The first explores the impact of race, ethnicity, and household economic status on the workforce outcomes of these high school graduates. The supplement shows variation in the industries selected and, within industries, variations in wages earned based on race, ethnicity, and economic status. Generally, the median quarterly wages were higher for high school graduates who are Male, White, or not economically disadvantaged.

The second supplemental section further explores high school graduates who earned a Bachelor's degree, are Still in College, or had Some College but no degree; focusing on the number of institutions attended, the duration of attendance, the types of institutions attended and the academic pathway to their current college status. As previously discussed, attending some college has negative implications for wages. When including duration of enrollment in the analysis it shows that high school graduates enrolled for two years or less had higher median quarterly wages as compared to those enrolled for three or more years suggesting there may be a small return to Some College at shorter durations. For Bachelor's degree recipients, the report shows that very few (6%) begin at community college. However, for those that do, there does not appear to be negative impact on wages. Both the four-year college only path and the community college path to the Bachelor's degree resulted in nearly identical median quarterly wages, both of which were well above the living wage and just shy of the median wages for all Marylanders. For those Still in College, the report shows that three-quarters of this group earned one college degree and were actively pursuing a second. This is an important finding as it means that those still in college, five years after high school, are not slowly progressing toward a first degree, but rather building on an existing credential.

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INTRODUCTION

Report Requirements

This Report is submitted in fulfillment of the requirement in *The Career Preparation Expansion Act* (CPEA), Chapter 695 of 2017 (see Education Article § 21-205, Annotated Code of Maryland). The Maryland Longitudinal Data System (MLDS) Center and the Governor's Workforce Development Board (GWDB) are required to produce a report on high school graduates for the five-year period after graduation on:

1. Wages earned;
2. Hours worked per week; and
3. The industry in which the individuals are employed.

Overview of State Agencies

The MLDS is the State's central repository for student and workforce data. The MLDS Center develops and maintains the System in order to provide analyses, produce relevant information, and inform choices to improve student and workforce outcomes in the State of Maryland.

The Governor's Workforce Development Board helps plan, coordinate, and monitor State programs and services for workforce development, and advises the Governor on the development, implementation, and modification of the four-year State Plan, as required by federal law.

MLDS Data

The MLDS connects data from across Maryland's education and workforce agencies. These data are subject to strict data management, security, and privacy requirements. The MLDS may only report aggregated, de-identified data. All research conducted by the MLDS Center focuses on what happens to students before and after critical transitions between education and workforce pathways. All research and analysis using the MLDS is cross-sector.

The analysis in this report focuses on the employment of individuals as they transition into the workforce after receiving their high school diploma, including whether or not any of the graduates enrolled in college or earned a college degree subsequent to high school graduation. Below is an overview of the available data within the System to support this analysis:

Education Data

The MLDS System contains education data on all students from Maryland public high schools, students attending Maryland public and state-aided independent institutions of higher education, and adults completing GED® Testing or the National External Diploma Program® (NEDP®). Education data begin with the 2007-2008 academic year and are current through the 2019-2020 academic year. The System does not contain education data on students in private high schools or private institutions of higher education. Nor does the System contain data on postsecondary students in continuing education or non-credit programs. Further, data on

unsuccessful attempts at fulfilling the GED® or NEDP® requirements are not included in the System. The System contains limited information on out-of-state college enrollment and graduation for Maryland public high school graduates.

Wage Data

The MLDS contains workforce data from quarterly Unemployment Insurance (UI) filings from 2008 through the second quarter of 2020 for Marylanders with a Maryland educational record (see the MLDS Data Inventory for a definition of *educational record*). UI filings are only available for Maryland employees who work for an in-state employer required to file UI and have a Maryland education record. Examples of employers that are not required to file UI include the federal government (including the military), certain non-profits, and self-employed and independent contractors. Individuals working in temporary employment, including federal postsecondary work-study programs, are also not subject to UI filings. These omissions mean it is incorrect to assume that individuals not counted as "employed" are unemployed.

The UI wages reported reflect the compensation paid during a fiscal quarter, rather than when the compensation was earned. UI wages reflect the sum of all compensation, including bonuses, commissions, tips, and other forms of compensation. The UI wage data do not distinguish between part-time and full-time employment, hourly and salaried wages, regular wages and commissions, bonuses, and other incentive pay. The UI wage data provided do not indicate the number of days or the number of hours a person worked in a fiscal quarter.

UI filings for a fiscal quarter may be incomplete. Employers may have filed UI wages after the data have been transmitted to the MLDS Center or have omitted individuals from their file. Missing wage data and/or corrections to previously reported wages may be provided in subsequent fiscal quarters. While there is no time limit on correcting UI filings, most changes (additions or corrections) are completed within one fiscal quarter. This report uses both UI wage data for fiscal quarters that have had at least one fiscal quarter of subsequent UI data for wage calculation; therefore errors in wage amounts due to corrections and late filings have been minimized. This report uses UI wage data to determine wage visibility that have not yet had subsequent quarters of UI wage data provided; therefore, wage visibility may be reduced from late or incomplete filings.

Wage data in the System include North American Industry Classification System (NAICS) codes for employers. This system classifies employers by sector rather than identifies the specific jobs performed by employees. For example, NAICS 62 is Health Care and Social Assistance, and NAICS 6221 is General Medical and Surgical Hospitals. Individuals who are doctors, hospital administrators, dietitians, and janitorial staff at a hospital would all have this same NAICS code. Employers select the sector and may change their sector designation at any time.

Contextual Data

Three sources of data were selected to provide context for the results and guide the analysis. Collectively, these sources provide comparisons to the outcomes reported.

MIT Living Wage Calculator

The Living Wage Calculator developed by the Massachusetts Institute of Technology[1] provides data on the cost of living in various geographic areas across the United States. The living wage calculator incorporates the cost of food, housing, health insurance, transportation, taxes, clothing, and other personal items to derive the minimum annual income required for basic self-sufficiency. It is more comprehensive than traditional poverty measures, which do not incorporate these broader costs of living. The measure selected from the Living Wage Calculator was *required annual income before taxes for one adult with no dependent children* which was $30,749 annually or $7,687[2] per fiscal quarter in 2019. This income was converted to a quarterly income to align to the MLDS quarterly wage data and is referred to as the "living wage" in the remainder of this analysis.

American Community Survey 5 Year Estimates

The second source of contextual data was the American Community Survey (ACS) 5-Year Estimates, 2014 to 2018.[3] This survey provides extensive data on demographic characteristics, housing, and wages for states and counties throughout the United States. The measure selected from the ACS was *median earnings for workers*. This income measure was converted to quarterly earnings to align to the MLDS quarterly wage data and is referred to as the "ACS wage" in the remainder of this analysis. The ACS median earnings for workers in Maryland was $43,940 annually or $10,985 quarterly in 2019.[4]

Minimum Wage in Maryland

The minimum wage in Maryland from July 2018 to June 2019 was $10.10 per hour. A minimum wage worker employed for 30 hours per week earns $3,939 per quarter[5]. The 30 hours per week threshold was selected to calculate earnings as employment at 30 hours is the minimum to be classified as full-time.

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[1]Glasmeier, A. (2020). Living Wage Calculator. (http://livingwage.mit.edu/) Massachusetts Institute of Technology.

[2]Values reported in the Living Wage Calculator were $30,287 annually in Q1 2019 dollars. This was adjusted for inflation to $30,749 to Q2 2019 using the CPI Inflation Calculator provided by the U. S. Department of Labor, Bureau of Labor Statistics. https://www.bls.gov/data/inflation_calculator.htm. The inflation adjusted wage divided to a quarterly wage of $7,687 in 2019 dollars.

[3]United States Census Bureau. (2019). 2014-2018 American Community Survey 5-Year Estimates. U.S. Census Bureau's American Community Survey Office. https://www.census.gov/programs-surveys/acs

[4]Values reported in the ACS were $42,520 annually in 2018 dollars. The was adjusted for inflation to $43,940 to Q2 2019 using the CPI Inflation Calculator provided by the U. S. Department of Labor, Bureau of Labor Statistics - https://www.bls.gov/data/inflation_calculator.htm. This inflation adjusted wage was divided to a quarterly wage of $10,985 in 2019 dollars.

[5]This quarterly wage was derived by multiplying (($10.10 x 30 hours per week) x 52 weeks in a year) and dividing by 4. This value did not need to be adjusted for inflation as it is contemporaneous to the period under study.

Population Groups

The population of interest for this report was high school students who graduated from a Maryland public high school with a diploma between January and October of 2014 and are between the ages of 16 and 24 at the time of graduation[6]. This is the latest year that high school graduates had five years of available wage data post-high school graduation. Almost 60,000 students graduated from Maryland public high schools in 2014 under this definition. See **Table 1**. The graduating class was majority female, white, and non-economically disadvantaged (Non-FARMS). **Supplement 1** provides a definition of the FARMS indicator used to evaluate economic status.

Table 1. High School Graduates, State of Maryland, 2014, Distribution by Demographic and Economic Characteristics

Education Level		Overall
	All High School Graduates	***58,136***
Gender	Female	29,663
	Male	28,473
Ethnicity	Hispanic, Any Race	5,913
Race	African-American/ Black Alone	20,182
	Asian Alone	3,765
	White Alone	29,031
Economic Status	FARMS	18,612
	Non-FARMS	39,524

Note: Race is reported independent of Ethnicity therefore values do not equal the total. Some races are omitted to protect small populations.

[6]This definition of high school graduate was selected to align to reporting definitions used by the National Center for Education Statistics (NCES) and the U. S. Bureau of Labor Statistics (BLS).

High school graduates were disaggregated into educational attainment groups. See **Table 2**[7]. Three-quarters of high school graduates pursued postsecondary education after high school. Analyzing wage data by educational attainment is critical to any exploration of wage and industry of employment as:

1. Research suggests employment outcomes and wages may vary by educational attainment[8];
2. Variation in length of degree program impacts the length of time in the workforce post-degree, which in turn impacts employment outcomes and wages; and
3. Enrollment in school negatively impacts amount of hours available for work each week.

Table 2. High School Graduates, State of Maryland, 2014, Distribution by Educational Attainment

Education Level	Totals	
All High School Graduates	***58,136***	
High School Graduates, No College	13,497	23%
Some College	20,456	35%
Still in College	11,210	19%
Lower Division Degree	1,786	3%
Certificate	218	<1%
Associate's	1,568	3%
Bachelor's Degree or Higher	11,187	19%
Bachelor's	11,134	19%
Other Degree	53	<1%

Definitions used to determine assignment to each group can be found in **Appendix 1**. **Appendix 2** contains educational attainment distributions by demographic and economic characteristics.

[7]Educational attainment should not be interpreted as college graduation rates as this report does not provide data on the number of students starting each degree, only the number of students who obtained each degree, are still enrolled in college or stop attending college without graduating. Reporting on college completion is outside the scope of this report.

[8]For example, see:

Baum, S., Ma, J. & Payea, K. (2013). Education Pays 2013: The benefits of higher education for individuals and society. College Board.

Hout, M. (2012). Social and economic returns to college education in the United States. Annual Review of Sociology.38:379-400.

Kane, T.J. & Rouse, C. E. (1995). Labor market returns to two-year and four-year college. The American Economic Review, 85(3): 600-614.

Thomas, S. & Zhang, L. (2005). Post-baccalaureate wage growth within 4 years of graduation: The effects of college quality and college major. Research in Higher Education, 4(4): 437-459.

ANALYSIS AND RESULTS

Question 1. Wages Earned Five Years after High School Graduation

This section outlines the approach that was used to determine the median quarterly wages for high school graduates five years after high school graduation. The results for all high school graduates by educational attainment are provided. See **Supplement 1** for addition wage analysis for demographic and economic groups.

Methodology

The high school graduates included in the wage analysis were selected by using the U. S. Census Bureau Stable or Full-Quarter Employment Methodology (referenced as Full-Quarter throughout this report)[9]. This methodology excludes individuals from the median calculation who do not have wage data in either the fiscal quarter before or after the period of interest. For this study, the period of interest is the 20th quarter after high school graduation or fiscal quarter 2 of 2019. Accordingly, individuals were included in the median wage calculation[10] if, in addition to having wages in quarter 2 of 2019, they also had wages in fiscal quarter 1 of 2019 and fiscal quarter 3 of 2019.

The Full-Quarter Methodology was used because it provides a standardized method of determining whose wages to include in the analysis. Restricting analysis to "stable wage earners" provides a clearer picture of wage outcomes for workers fully engaged in the workforce and eliminates the potential to deflate median wage calculations by including the wages, or lack of wages, of workers for who are absent, transient, or not fully engaged in the workforce. This method also reduces the impact of UI wage data limitations by excluding wages that may be incorrect due to incomplete or late filings.

Wage bands were constructed to align to the contextual indicators selected for this report. The wages earned in the 20th quarter for those with full-quarter employment were used to assign each high school graduate to one of four wage groups. See **Table 3**.

Table 3. Wage Bands

Income Band	20th Fiscal Quarter Wage
Less than Minimum Wage	$1 to $3,939
Between Minimum Wage and Living Wage	$3,940 to $7,686
Between the Living Wage and ACS Wage	$7,687 to $10,984
Greater than or equal to the ACS Wage	>= $10,985

[9]The Full-Quarter Employment (Stable) methodology is utilized by the U. S. Census Bureau to calculate average monthly earnings for individuals engaged in stable employment with any employer. The methodology is applied here to derive quarterly, rather than monthly median earnings. https://lehd.ces.census.gov/doc/QWI_101.pdf.

[10]Some individuals have wages in a quarter from more than one employer. Those wages were summed and then the sum was used in the median quarterly wage calculation.

Results

Median Quarterly Wages by Educational Attainment

There were 27,330 high school graduates, or 47% of all graduates, who had full-quarter employment and were therefore included in the wage analysis. See **Table 4**[11]. Conversely, 53% of high school graduates did not have wage data for the three consecutive fiscal quarters five years after high school graduation. High school graduates excluded from this calculation include individuals who may have had wage data for some but not all of the quarters required to meet the full-quarter definition, had wages from a source not reported to the MLDS, or were unemployed.

Overall, the median quarterly wage for all high school graduates with full-quarter wages was $6,160 in the 20th quarter – fiscal quarter 2 of 2019. Comparatively, this was approximately $1,500 below the living wage[12] in Maryland and $4,800 below the ACS median earnings for workers in Maryland[13]. See **Table 4**.

Table 4. High School Graduates, State of Maryland, 2014, Graduates with Full-Quarter Wages by Educational Attainment Compared to Living Wage, Five Years after High School Graduation

Educational Attainment	Total	Total with Full-Quarter Wages	% with Full-Quarter Wages	Median Wage for Quarter 20	Variation to Living Wage ($7,687)
All High School Graduates	*58,136*	*27,330*	*47%*	*$6,160*	↓ *$1,528*
High School Graduates, No College	13,497	6,298	47%	$6,392	↓ $1,296
Some College	20,456	10,508	51%	$5,546	↓ $2,142
Still in College	11,210	5,292	47%	$4,891	↓ $2,797
Lower Division Degree	*1,786*	*1,063*	*60%*	*$7,245*	↓ *$422*
Certificate	218	138	63%	$7,885	↑ $198
Associate's	1,568	925	59%	$7,121	↓ $566
Bachelor's Degree or Higher	*11,187*	*4169*	*37%*	*$10,000*	↑ *$2,313*
Bachelor's	11,134	4,157	37%	$10,000	↑ $2,313
Other Degree	53	12	23%	$13,973	↑ $6,286

↑value is above the living wage, ↓ value is below the living wage

[11]Wages are actual for Q2 2019 and not inflation adjusted to current day values. If an individual had more than one source of wages for the period those sources were summed to a personal quarterly wage and that value was used in determining the median.

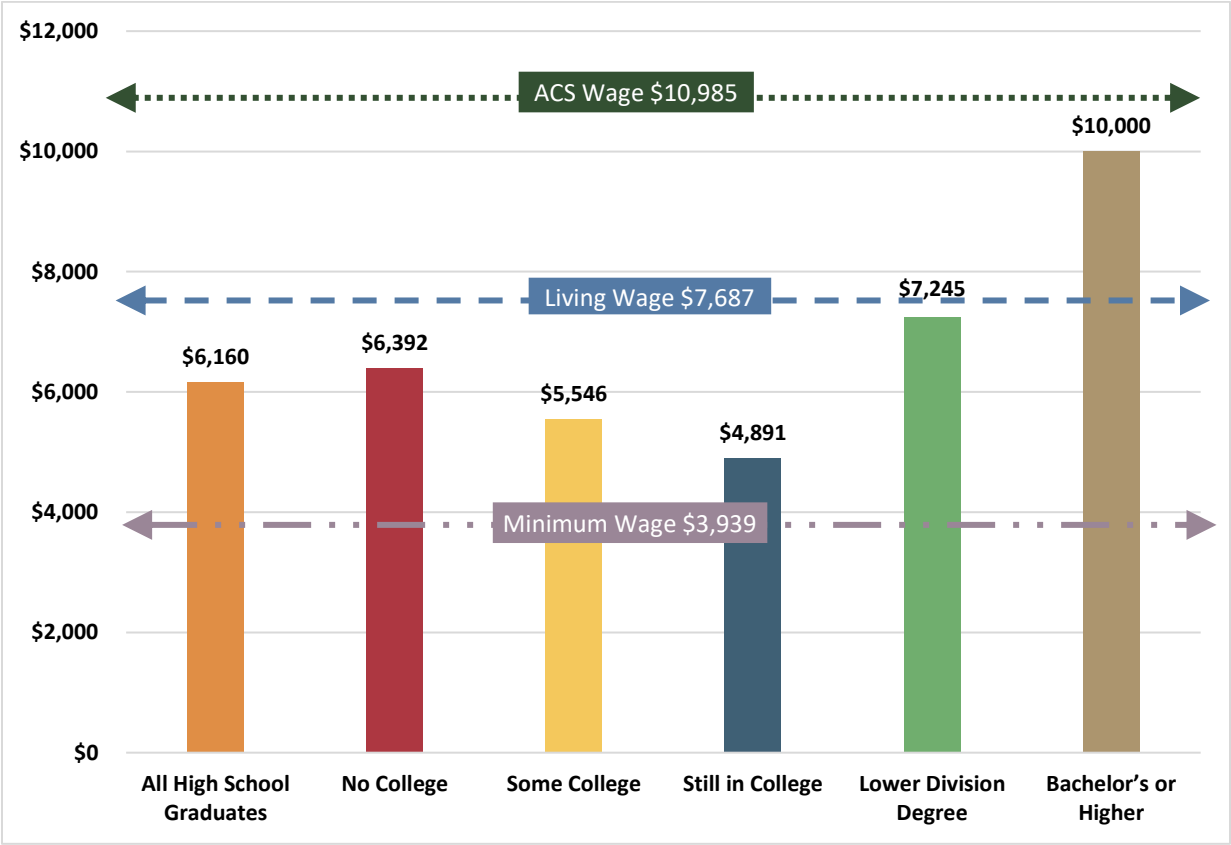
[12]Glasmeier, A. (2020). Living Wage Calculator. Massachusetts Institute of Technology.

[13]United States Census Bureau. (2019). 2014-2018 American Community Survey 5-Year Estimates. U.S. Census Bureau's American Community Survey Office. https://www.census.gov/programs-surveys/acs

This result was not uniform across all educational attainment groups. See **Chart 1**. High school graduates who did not continue to college, those with some college, and those still in college had a median quarterly wage that fell below the living wage. Of these three educational attainment groups, the *No College* group, which presumably went directly into the workforce, had higher wages than the other two groups. Students in the *Still in College* group fell below the living wage as they are most likely working in a part-time capacity to prioritize their education. These students may have had a portion of their living expenses covered by their parents or received federal, state, or institutional financial aid to cover their living expenses.

Perhaps unexpected is the median quarterly wage for the *Some College* group. This group, who had some college but did not earn a degree, had a median quarterly wage approximately $800 less than those who never went to college. This lower wage may reflect two concepts. First, the *No College* high school graduates had five years to build progressively higher wages, while the *Some College* high school graduates delayed entry into career track employment and are just now receiving entry level. Second, the low median wage for *Some College* may reflect limited employment opportunities as these high school graduates continued to intermittently pursue postsecondary education, splitting their time and focus between college and the workforce.

Chart 1. High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Educational Attainment Compared to Wage Indicators, Five Years after High School Graduation



High school graduates who completed a college degree had median quarterly earnings at or above the living wage. See **Chart 1**. The median quarterly wage was within $400 of the living wage for high school graduates in the *Lower Division Degree* group. Graduates in this group earned either an Associate's degree or a Certificate. The median quarterly wage was $2,500 above the living wage for high school graduates in the *Bachelor's Degree or Higher* group. At the point of wage evaluation, *Lower Division* graduates may have been in the workforce post-college graduation for two or more years, while those in the *Bachelor's or Higher* group realized these earnings despite having only nine months lapse since completing their college degrees.

Whether the earnings gaps between educational attainment groups persists, narrows or widens will be determined as additional time passes in the workforce. Currently, the *No College*, *Some College,* and *Still in College* groups are on pace to earn $1 million in their lifetime, while individuals with some level of college degree are on pace to earn $1.5 to $2 million in their lifetime.[14] The results for both groups align to research[15] on the financial returns to education. For additional analysis on college enrollment patterns and wages see **Supplement 2** at the end of this report.

[14]Projected lifetime earnings are based on the sum of median quarterly wages for individuals through the age of 65 for each education level.

[15]For example, Baum, S, Ma, J. & Payea, K. (2013). Education Pays 2013: The benefits of higher education for individuals and society. College Board.

Wage Bands by Educational Attainment

Another way to analyze wages five years after high school graduation is to determine the number of graduates with full-quarter wages that fell into the wage bands constructed from the wage indicators. The median quarterly wage identifies the quarterly wage in the exact middle of a population; half the records in that population have a quarterly wage above this value, and half the records have a quarterly wage below this value. Identifying the number of high school graduates with quarterly wages at different levels of income helps quantify the number of graduates that were engaged in the workforce at a level that provides for or exceeds the basic cost of living in Maryland and the number who may be engaged in the workforce but unable to meet these basic expenses.

Overall, 64% of high school graduates with full-quarter wages did not have sufficient wages to meet the basic cost of living in Maryland despite being engaged in the workforce for three fiscal quarters, or nine months, five years after high school graduation. See **Table 5**. Collectively, 28% of all high school graduates fell below the minimum wage and 36% were between the minimum wage and the living wage. Only 36% of all graduates with full-quarter wages had wages above the living wage, with 17% achieving a quarterly wage equal to or greater than the ACS wage.

Applying this measure also called attention to differences in outcomes at each educational attainment level. See **Table 5**. High school graduates that continued on to college and earned a degree appeared with greater frequency in the higher wage bands than those who did not continue on to college (*No College)*, are *Still in College*, or attempted college (*Some College)*. For example, 65% of *Bachelor's Degree or Higher* high school graduates with full-quarter wages had a wage above the living wage, with 42% at or above the ACS wage. Comparatively, only 19% of high school graduates with full-quarter wages and *Some College* had quarterly wages above the living wage, with another 9% at or above the ACS Wage. Similar distributions were also present for *No College* and *Still in College.*

Table 5. High School Graduates, State of Maryland, 2014, Graduates with Full-Quarter Wages by Educational Attainment and Wage Band, Five Years after High School Graduation

Education Level	Total with Full-Quarter Wages	At or Below Minimum Wage		Between Minimum Wage and Living Wage		Between Living Wage and ACS Wage		At or Above ACS Wage	
		#	%	#	%	#	%	#	%
All High School Graduates	*27,330*	*7,722*	*28%*	*9,769*	*36%*	*5,328*	*19%*	*4,511*	*17%*
High School Graduates, No College	6,298	1,465	23%	2,558	41%	1,385	22%	890	14%
Some College	10,508	3,314	32%	4,306	41%	1,975	19%	913	9%
Still in College	5,292	2,170	41%	1,653	31%	760	14%	709	13%
Lower Division Degree	1,063	196	18%	379	36%	248	23%	240	23%
Bachelor's Degree or Higher	4,169	577	14%	873	21%	960	23%	1,759	42%

The median quarterly wage was derived for each wage band-educational attainment group. See **Table 6.** Reviewing the median wages for each wage band-educational attainment group revealed that for the wage bands, *Between Living Wage and ACS Wage,* and *Above ACS Wage,* the medians were not just above the wage indicator, but were thousands of dollars above the wage indicator. For example, the median quarterly wage for *No College* in the *Between Living Wage and ACS Wage* was $8,924 or $1,300 above the living wage. This means that half of the graduates in this group (approximately 700 graduates) were not just at the living wage, they were well above it and within $1,100 of the ACS Wage.

Highlighting another example, the *Bachelor's Degree or Higher* group had a median wage in the *Above ACS Wage* band of $14,107 or $3,100 above the ACS Wage indicator. In this group, over 800 graduates were not only above the ACS Wage, but they were also thousands of dollars above the wage. Further, the median wage in each wage band-educational attainment group showed little variation across groups. Simply, those that were above the living wage and/or above the ACS Wage were above it regardless of educational attainment.

Table 6. High School Graduates, State of Maryland, 2014, Median Quarterly Wages for Full-Quarter Wages by Educational Attainment and Wage Band, Five Years after High School Graduation

Education Level	Total with Full-Quarter Wages	At or Below Minimum Wage		Between Minimum Wage and Living Wage		Between Living Wage and ACS Wage		At or Above ACS Wage	
		#	Median Wage	#	Median Wage	#	Median Wage	#	Median Wage
All High School Graduates	*27,330*	*7,722*	$2,372	*9,769*	*$5,772*	*5,328*	*$9,053*	*4,511*	*$13,778*
High School Graduates, No College	6,298	1,465	$2,498	2,558	$5,878	1,385	$8,924	890	$13,270
Some College	10,508	3,314	$2,395	4,306	$5,727	1,975	$8,945	913	$13,119
Still in College	5,292	2,170	$2,186	1,653	$5,650	760	$9,074	709	$13,942
Lower Division Degree	1,063	196	$2,720	379	$5,792	248	$8,973	240	$13,920
Bachelor's Degree or Higher	4,169	577	$2,530	873	$5,883	960	$9,499	1,759	$14,107

Question 2. Hours Worked Per Week

Methodology

The second requirement for this report is to analyze the hours worked for the five-year period following graduation. As previously stated, the UI wage data do not contain hours worked. Knowing the number of hours worked would shed light on whether employment was full-time or part-time and the extent to which a high school graduate was engaged in the workforce.

An alternative way to consider answering this question is to explore the level of workforce engagement for high school graduates for the full five-year period after graduation. This section provides insight into workforce engagement by looking at wage progressions for two groups of high school graduations: *No College* and *Some College*. These two groups were isolated for this analysis as both have low wages at the five-year mark and their lack of postsecondary educational engagement suggests they are available to be engaged in the workforce in a full-time capacity, and, as such, have the potential to experience increases in wages over the five-year period. High school graduates *Still in College* or with a degree would not be available for full-time workforce engagement and not necessarily pursuing career-track employment that would yield incremental wage gains over the five-year period.

Three periods were used to evaluate if wages changed over time for these two groups: the second quarter, eleventh quarter, and twentieth quarter. The periods align approximately to the 1st, 3rd and 5th years after high school graduation. Two types of progressions were generated. First, wage progressions were generated for the *No College* and the *Some College* high school graduates for those with wages in every fiscal quarter of the five-year period. Second, wage progressions were generated for both groups for high school graduates with periodic full-quarter wages. Assignment to the periodic full-quarter wage group was made using the U. S. Census Bureau Stable or Full-Quarter Employment Methodology (referenced as Full-Quarter throughout this report).[16] High school graduates were included in the Q2, Q11, and Q20 populations if they had full quarter wages at the evaluation point. See **Table 7**.

Table 7. Fiscal Quarters for Wage Progressions

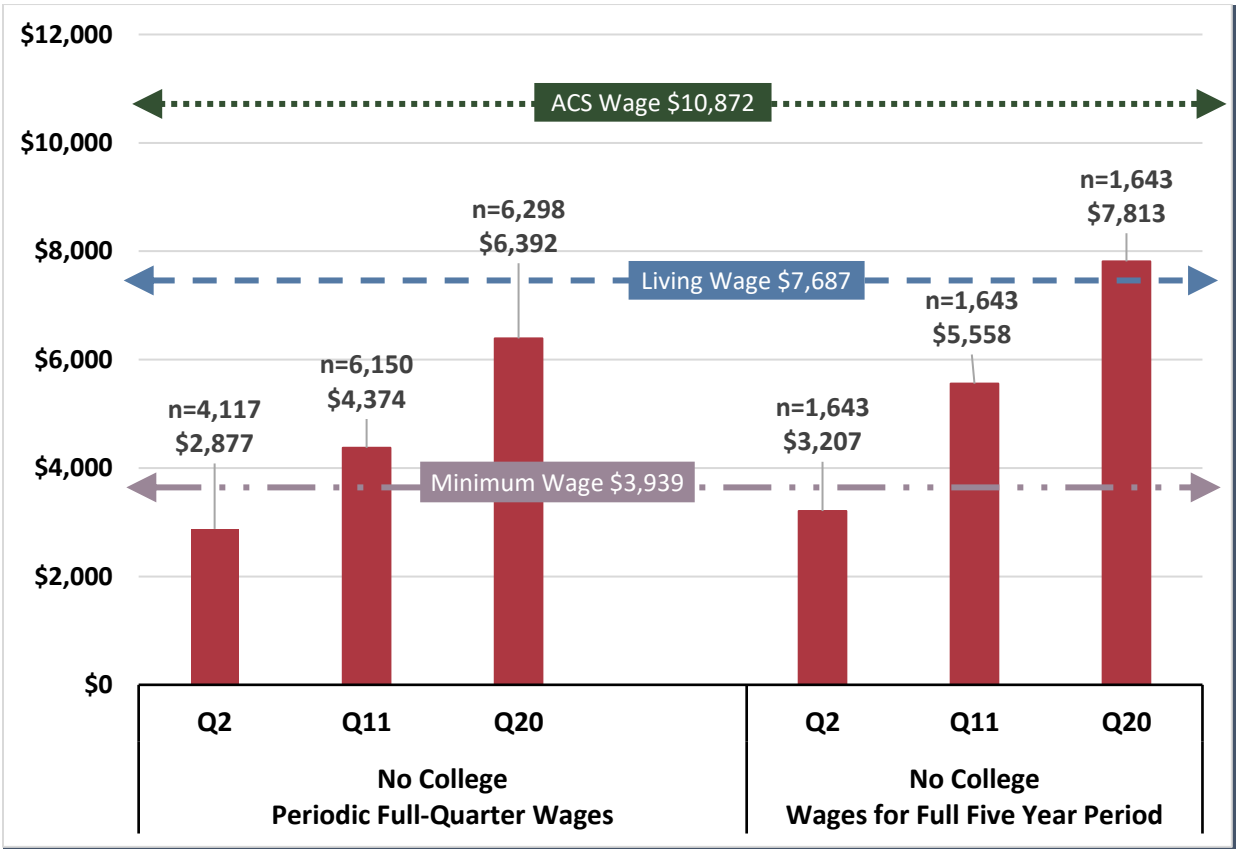
Fiscal Quarters Evaluated for Periodic Wages	Wage Quarter Selected
Year 1: Q3 2014, Q4 2014 and Q1 2015	Q2 or Q4 2014
Year 3: Q4 2016, Q1 2017 and Q2 2018	Q11 or Q1 2017
Year 5: Q1 2019, Q2 2019 and Q3 2019	Q20 or Q2 2019

[16]The Full-Quarter Employment (Stable) methodology is utilized by the U. S. Census Bureau to calculate average monthly earnings for individuals engaged in stable employment with any employer. The methodology is applied here to derive quarterly, rather than monthly median earnings. https://lehd.ces.census.gov/doc/QWI_101.pdf.

Results

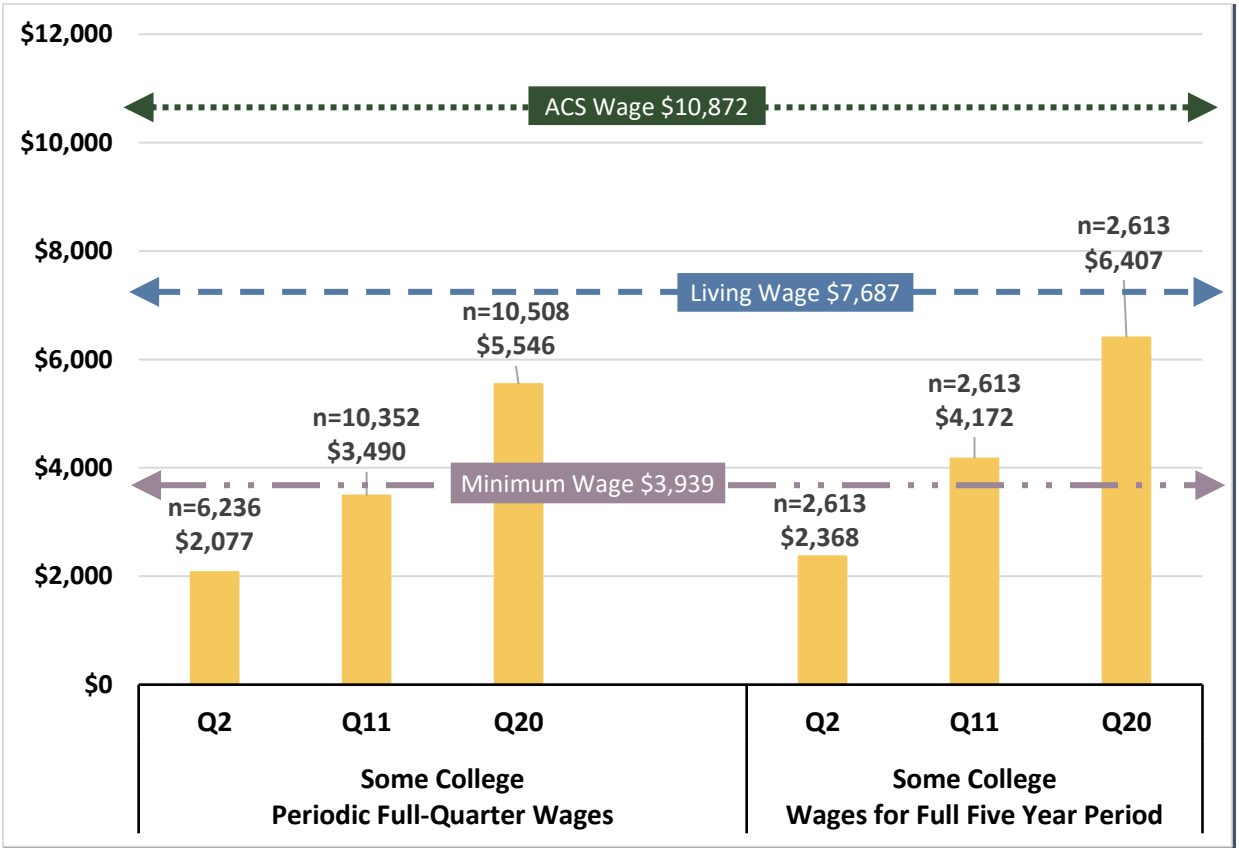
The results of the analysis for the *No College* wage progression are presented in **Chart 2**. First, there were slightly more than 6,200 *No College* high school graduates with periodic full-quarter wages for the five-year period after graduation with a median quarterly wage of $6,392 at the end of the period. While this result is below the living wage by about $1,300, it does reflect an increase of $3,500 over wages at the start of the five-year period. There were 1,643 *No College* high school graduates that had wages in every fiscal quarter for the full five-year period after graduation. Comparatively, this group of graduates had a median quarterly wage of $7,813 at the end of the period, $1,500 higher than those with periodic full-quarter wages and, more importantly, a median quarterly wage that was just over the living wage. The analysis indicates that high school graduates without any postsecondary education have the potential to engage in employment that does provide wage increases over time, and, potentially, can be engaged in the workforce to attain wages to meet the basic cost of living in Maryland.

Chart 2. High School Graduates, State of Maryland, 2014, *No College* Wage Progressions



The results of the analysis for the *Some College* wage progression are presented in **Chart 3**. There were 10,508 *Some College* high school graduates with periodic full-quarter wages for the five-year period after high school graduation with a median quarterly wage of $5,546 at the end of the period. While this result was below the living wage by about $2,000, it does reflect an increase of $3,500 over the median quarterly wage for those with periodic full-quarter wages at the start of the five-year period. Comparatively, the 2,613 *Some College* high school graduates with wages in every fiscal quarter for the full five-year period after graduation had a median quarterly wage of $6,407 at the end of the five-year period. This is about $1,000 higher than those with periodic full-quarter wages; however, this wage was still well below the living wage. The analysis indicates that high school graduates with *Some College* do experience wage increases over the five-year timeframe; however, the wages earned by this group combined with the lack of degree attainment, still place their wages well below the living wage, even if engaged in the workforce every fiscal quarter for five years.

Chart 3. High School Graduates, State of Maryland, 2014, *Some College* Wage Progressions



Question 3. High School Graduates and Industry of Employment

This section outlines the approach used to analyze the industry of employment and corresponding median quarterly wages for high school graduates five-years after graduation to fulfill the third reporting requirement: the industries in which high school graduates are employed.

Methodology

The industry of employment was determined by evaluating the North American Industry Classification System (NAICS) code reported with each wage record. NAICS codes were grouped according to standard reporting categories.[17] The U.S. Census Bureau Stable or Full-Quarter Employment Methodology[18] was used as a basis for selecting high school graduates to include in the analysis with the added requirement that they must have been employed by the same employer for the nine month period (Q1 of 2019, Q2 of 2019 and Q3 of 2019) before deriving median wage calculations for fiscal quarter 2 of 2019[19] (referenced as Same-Employer throughout this report).

The Full-Quarter Employment with Same Employer Methodology (Same-Employer) yielded 19,860 high school graduates or 34% of all high school graduates. See **Table 8**. This means that 73% of high school graduates with full-quarter employment (wages for three quarters) remained with the same employer for all three fiscal quarters; 27% of high school graduates with full-quarter employment changed employers at least once during this period.

Table 8. High School Graduates, State of Maryland, 2014, Full-Quarter and Same-Employer Employment, Five Years after High School Graduation

All High School Graduates	Total with Full-Quarter Wages	Total with Full-Quarter Same-Employer Wages	% Full-Quarter with Same-Employer Wages
58,136	27,330	19,860	73%

[17]The 20 NAICS codes were grouped based upon industry sector as aligned to U. S. Bureau of Labor Statistics and U.S. Statistical Agencies Office of Management and Budget (Federal), Economic Classification Policy Committee.

[18]The Full-Quarter Employment (Stable) methodology is utilized by the U.S. Census Bureau to calculate average monthly earnings for individuals engaged in stable employment with the same employer. The methodology applied here derives quarterly, rather than monthly, median earnings. https://lehd.ces.census.gov/doc/QWI_101.pdf.

[19]For the NAICS quarterly median wage calculation, some individuals had wages in the quarter from more than one employer and more than one NAICS. Only wages from the employer that covered all three quarters were used in median wage calculations.

Results

Five years after high school graduation, the NAICS sector with the largest share of high school graduates with same-employer wages was *Trade, Transportation and Utilities* (24%). *Professional & Business Services, Health Care & Social Assistance*, and *Leisure & Hospitality* each had 15% of same-employer graduates. In 2019, these four sectors were also the largest non-government private sector employers in Maryland[20]. Collectively, these four sectors employed over 1.5 million Marylanders (over half of all wage earners) through more than 90,000 business and paid $22 billion in wages (half of all wages paid)[21]

These four sectors represented $169 billion of the $342 billion private sector gross domestic product in 2019[22] and included industries important to Maryland's infrastructure, business administration, culture, and health, including freight and air transportation, retail trades, power distribution, accounting, law, nursing, home health care, tourism, casinos, golf courses, and food service.

Overall, high school graduates had a quarterly wage at or above the living wage in five of the ten sectors. See **Table 9**. The share of high school graduates within each sector and the median quarterly wage varied by educational attainment.

Table 9. High School Graduates, State of Maryland, 2014, Sector of Employment and Median Quarterly Wage for Graduates with Same-Employer Wages, Five Years after High School Graduation

Sector	Total with Same-Employer Wages	%	Same-Employer Quarter 20 Median Wage
Goods-Producing	1,900	10%	↑ $10,120
Trade, Transportation, & Utilities	4,864	24%	↓ $6,023
Information	230	1%	↓ $7,600
Financial & Real Estate	893	5%	↑ $9,137
Professional & Business Services	3,056	15%	↑ $8,934
Educational Services	1,290	7%	↑ $8,334
Health Care & Social Assistance	2,992	15%	↓ $6,881
Leisure & Hospitality	3,035	15%	↓ $5,114
Other Services	950	5%	↓ $6,665
Public Administration	650	3%	↑ $9,465
Total	**19,860**		↓ **$7,086**

↑value is above living wage, ↓ value is below living wage

[20]Maryland Office of Workforce Information & Performance. (2020). *Annual Maryland Current Employment Statistics (CES) - Workforce Information & Performance*. https://www.dllr.state.md.us/lmi/ces/cesann.shtml
[21]Maryland Department of Labor. (2020). *Maryland - Second Quarter 2019 - Industry Series - Maryland's Quarterly Census of Employment and Wages (QCEW) – OWIP*. https://www.dllr.state.md.us/lmi/emppay/tab1md22019.shtml
[22]U.S. Bureau of Economic Analysist. (2020). *Quarterly Gross Domestic Product (GDP) by State*. https://www.bea.gov/

The sector with the largest share of high school graduates overall, *Trade, Transportation & Utilities*, was the largest sector for the *No College, Some College, Still in College,* and *Lower Division Degree* educational attainment groups. See **Table 10.** The second largest sector overall, *Professional & Business Services*, was the largest sector for *Bachelor's Degree or Higher* graduates. *Goods-Producing,* the fifth largest sector overall, was the second largest sector for *No College*.

Table 10. High School Graduates, State of Maryland, 2014, Top Three Sectors for Graduates with Same-Employer Wages by Educational Attainment, Five Years after High School Graduation

Educational Attainment	Sector	Sector	Sector
No College	Trade, Transportation, & Utilities (30%)	Goods-Producing (17%)	Leisure & Hospitality (14%)
Some College	Trade, Transportation, & Utilities (30%)	Leisure & Hospitality (19%)	Health Care & Social Assistance (16%)
Still in College	Trade, Transportation, & Utilities (20%)	Health Care & Social Assistance (20%)	Leisure & Hospitality (16%)
Lower Division Degree	Trade, Transportation, & Utilities (22%)	Health Care & Social Assistance (16%)	Professional & Business Services (16%)
Bachelor' s Degree or Higher	Professional & Business Services (28%)	Educational Services (17%)	Health Care & Social Assistance (14%)

Only two sectors, *Goods-Producing* and *Public Administration,* had median quarterly wages above the living wage for all educational attainment groups. One sector, *Leisure & Hospitality,* did not have a median quarterly wage above the living wage for any educational attainment group. See **Table 11**.

Table 11. High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Educational Attainment for Graduates with Same-Employer Wages, Five Years after High School Graduation

Industry	All High School Graduates	No College	Some College	Still in College	Lower Division Degree	Bachelor's Degree or Higher
Goods-Producing	↑ $10,120	↑ $9,864	↑ $9,101	↑ $10,419	↑ $9,933	↑ $15,074
Trade, Transportation, & Utilities	$6,023	$6,724	$5,706	$4,679	$5,964	↑ $7,773
Information	$7,600	$7,566	$7,054	$5,377	↑ $8,359	↑ $9,191
Financial & Real Estate	↑ $9,137	↑ $8,540	↑ $8,201	$ 7,256	↑ $9,154	↑ $12,829
Professional & Business Services	↑ $8,934	$7,444	$7,419	↑ $8,298	↑ $9,216	↑ $11,835
Educational Services	↑ $8,334	$6,079	$5,757	$6,897	$6,709	↑ $12,051
Health Care & Social Assistance	$6,881	$6,655	$6,413	$6,433	↑ $7,993	↑ $10,191
Leisure & Hospitality	$5,114	$5,199	$5,251	$4,427	$5,800	$5,720
Other Services	$6,665	$7,350	$6,428	$5,130	$7,076	↑ $8,993
Public Administration	↑ $9,465	↑ $9,400	↑ $8,511	↑ $7,698	↑ $12,405	↑ $9,974
Total	**$7,086**	**$7,228**	**$6,324**	**$5,921**	↑ **$7,829**	↑ **$10,871**

↑value is above living wage

Only three of the sectors had a median quarterly wage above the living wage for high school graduates in the *No College, Some College* or *Still in College* groups. Comparatively, the median quarterly wage was above the living wage in six sectors for the *Lower Division Degree* and nine sectors for the *Bachelor's Degree or Higher* groups.

Wages in each sector were also analyzed to determine the number of graduates with same-employer wages that fell into the wage bands constructed from the wage indicators. The median quarterly wage identifies the quarterly wage for the exact middle wage; half the records have a quarterly wage above this value, and half the records have a quarterly wage below this value. Identifying the number of high school graduates with quarterly wages at different levels of income helps quantify the number of graduates who were engaged in the workforce in each sector at a level that provides for or exceeds the basic cost of living in Maryland.

Overall, 44% of high school graduates with same-employer wages had a quarterly wage at or above the living wage. See **Chart 4 and Table 12**. Distributions by wage indicator varied by sector. The majority of high school graduates in *Goods-Producing, Financial & Real Estate, Professional & Business Services, Educational Services,* and *Public Administration* had quarterly wages at or above the living wage. The majority of graduates in the remaining five sectors had a quarterly wage below the living wage. Three of these sectors, *Trade, Transportation & Utilities, Health Care & Social Assistance, and Leisure & Hospitality,* had the largest shares of high school graduates.

Chart 4. High School Graduates, State of Maryland, 2014, Sector of Employment by Wage Band for Graduates with Same-Employer Wages, Five Years after High School Graduation

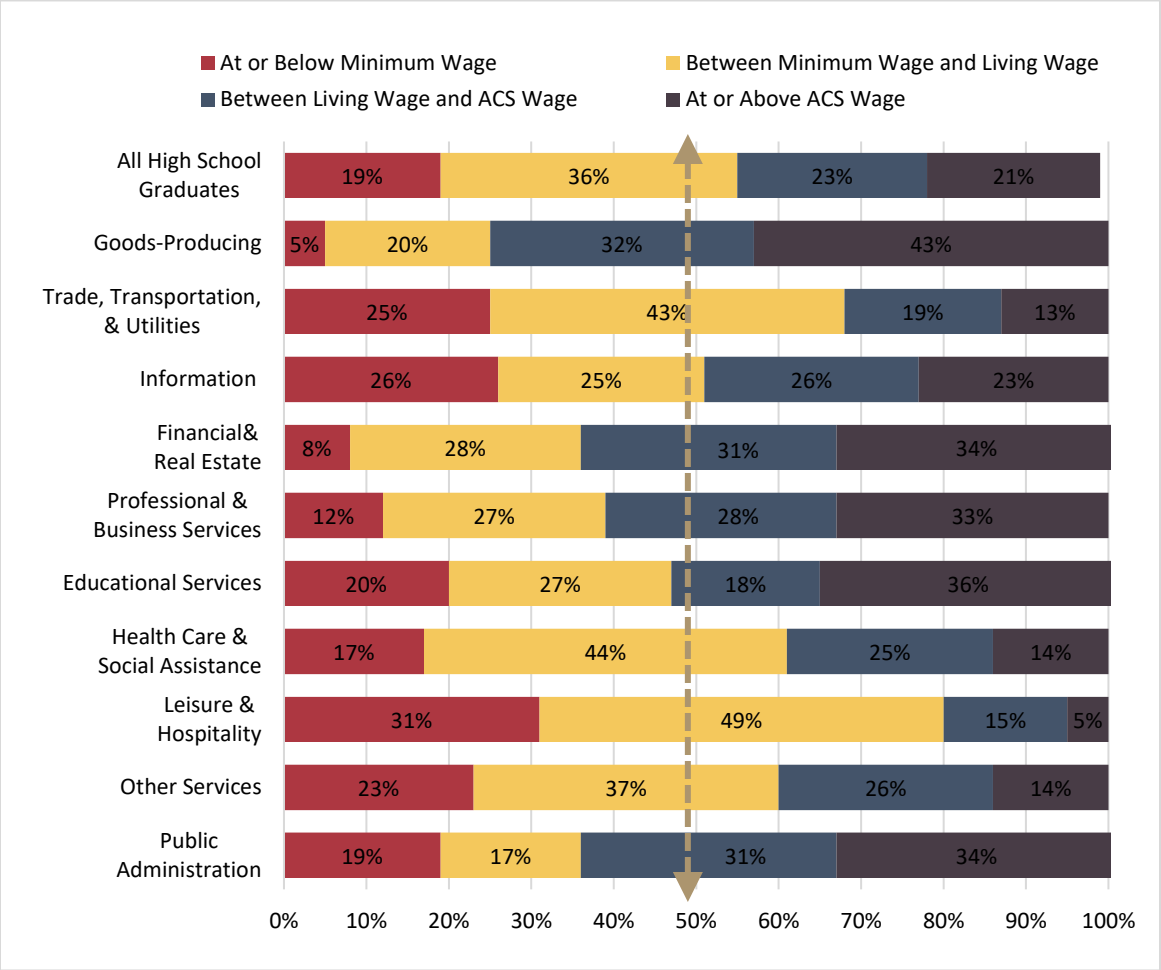


Table 12. High School Graduates, State of Maryland, 2014, Sector of Employment by Wage Band for Graduates with Same-Employer Wages, Five Years after High School Graduation

Education Level	Total Same-Employer Wages	At or Below Minimum Wage		Between Minimum Wage and Living Wage		Between Living Wage and ACS Wage		At or Above ACS Wage	
		#	%	#	%	#	%	#	%
All High School Graduates	*19,860*	*3,869*	*19%*	*7,220*	*36%*	*4,586*	*23%*	*4,185*	*21%*
Goods-Producing	1,900	101	5%	384	20%	606	32%	809	43%
Trade, Transportation, & Utilities	4,864	1,238	25%	2,097	43%	907	19%	622	13%
Information	230	59	26%	58	25%	60	26%	53	23%
Financial & Real Estate	893	69	8%	248	28%	276	31%	300	34%
Professional & Business Services	3,056	367	12%	831	27%	852	28%	1,006	33%
Educational Services	1,290	255	20%	342	27%	233	18%	460	36%
Health Care & Social Assistance	2,992	503	17%	1,315	44%	742	25%	432	14%
Leisure & Hospitality	3,035	940	31%	1,483	49%	459	15%	153	5%
Other Services	950	215	23%	354	37%	250	26%	131	14%
Public Administration	650	122	19%	108	17%	201	31%	219	34%

See **Appendices 5, 6 and 7** for median quarterly wages and percentage of graduates above the living wage by educational attainment, and demographic and economic characteristics for each sector. See **Supplement 1** for additional discussion of sector and educational attainment for select demographic and economic groups.

SUPPLEMENTAL ANALYSIS

Supplement 1: Wage Outcomes for High School Graduates by Demographic and Economic Characteristics

This supplement to the Career Preparation Expansion Act report explores the sector-level wages for high school graduates, five years after high school graduation, for select demographic and economic groups. This supplement focuses on two questions. The first question considers the rates in which each group appears in each labor sector. Are some groups concentrated in some sectors? Are group-sector distributions similar to the overall sector distributions? The second question examines sector-specific median quarterly wages for each group. What differences, if any, exist in the median quarterly wages between each group within the same sector?

Methodology

The methodology selected to identify the population of interest and their subsequent education attainment can be reviewed in the *Population Groups* section of this report. The U.S. Census Bureau Stable or Full-Quarter Employment Methodology applied to the analysis in section 3*, High School Graduates and Industry of Employment,* was selected for this supplement. Only high school graduates meeting the definition for *same-employer wages* were included in this supplement.

All same-employer graduates were assigned to one gender category and one economic category (See **Appendix 8** for a discussion on economic indicators)[23]. All same-employer graduates were also assigned to one racial group and one ethnic group. Assignment to racial and ethnic groups were made based upon the methodology used by the U. S. Census for its Current Population Survey (CPS) which reports race independent of ethnicity. The racial and ethnic groups included in this supplement and the appendices align to standard reporting practices employed by the U.S. Bureau of Labor Statistics (BLS). BLS reports labor data for three racial groups: White alone, Black or African-American alone, and Asian alone. Each racial group consists of individuals that identify with a single race but may be of any ethnicity. All other racial groups, including individuals identifying with two or more races, are omitted from BLS reports due to the small population size[24]. Small populations limit the conclusions that can be drawn from the data and may compromise the quality of any research.

[23]Economic status was determined through a student's Free or Reduced Price Meals (FARMS) eligibility in their final year of high school. FARMS indicates that a student is eligible to receive low-cost or no-cost meals each school day. Students may be eligible for free or reduced-price meals through participation in certain Federal Assistance Programs or based on their family's income falling below a specified poverty threshold. The education community and this report rely on FARMS eligibility to identify economically disadvantaged students. See Appendix 8 for a discussion on FARMS.

[24]U.S. Bureau of Labor Statistics. (2020). Labor Force Statistics from the Current Population Survey: Concepts and Definitions. https://www.bls.gov/cps/definitions.htm#race

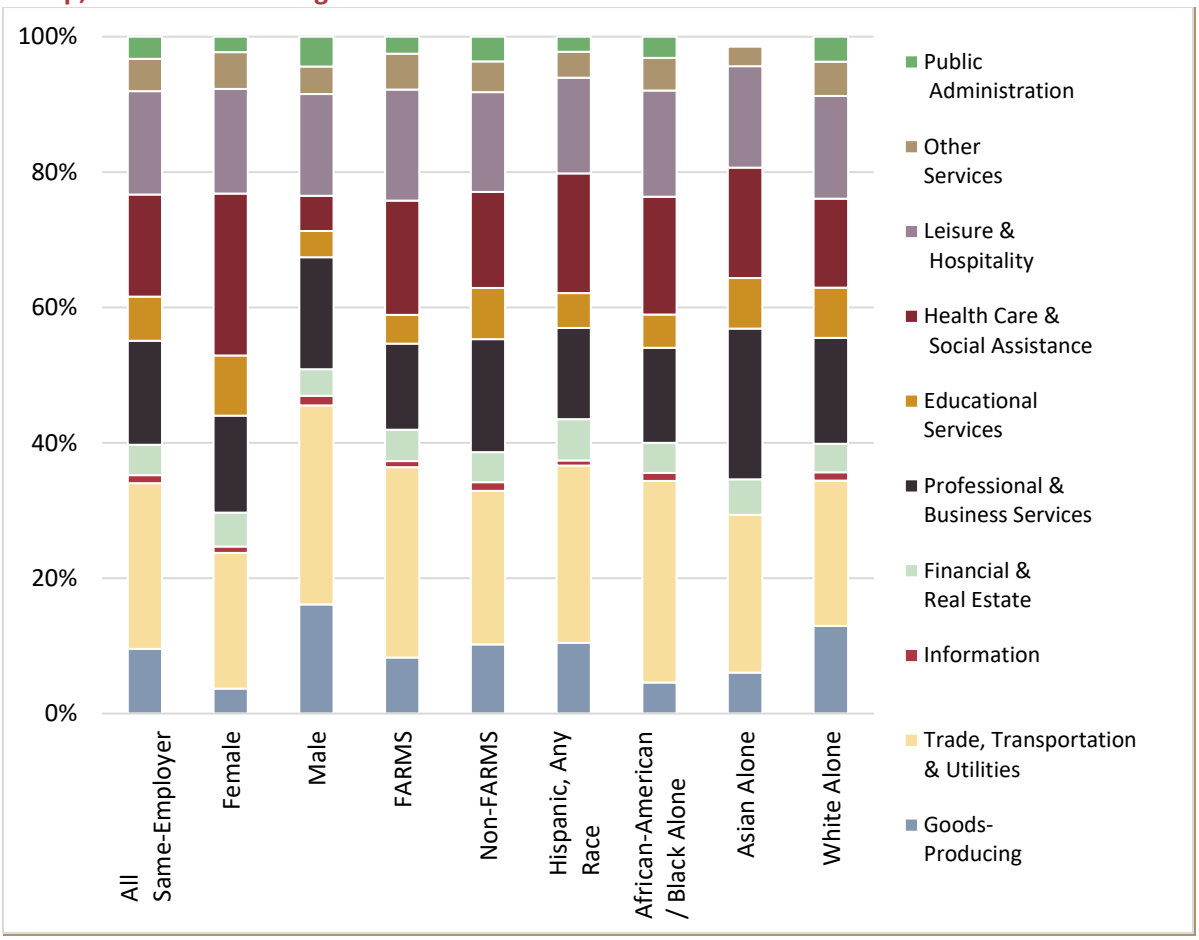
Results

Sector Distributions by Demographic and Economic Characteristics

The sector distributions for each demographic and economic group of high school graduates with same-employer wage as compared to the overall industry distribution are provided in **Chart A**. Distributions by educational attainment for each demographic and economic group are provided in **Appendix 7**.

Three notable patterns appeared in the group distributions. First, *Trade, Transportation & Utilities* which had the largest share of same-employer high school graduates was also the largest sector for all groups except *Female*. Only 20% of *Female* had same-employer wages in this sector, which is four percentage points lower than the overall group and nine percentage points lower than *Male*. *FARMS* same-employer graduates were also present at a higher rate (28%) than *Non-FARMS* (23%) for this sector. Differences were also visible between racial and ethnic groups. *Hispanic, Any Race* (26%) and *African-American/Black Alone* (30%) same-employer high school graduates were more heavily concentrated in this sector, compared to *White Alone* (22%) and *Asian Alone* (23%).

Chart A. Same-Employer High School Graduates, State of Maryland, 2014, Sector of Employment by Group, Five Years after High School Graduation



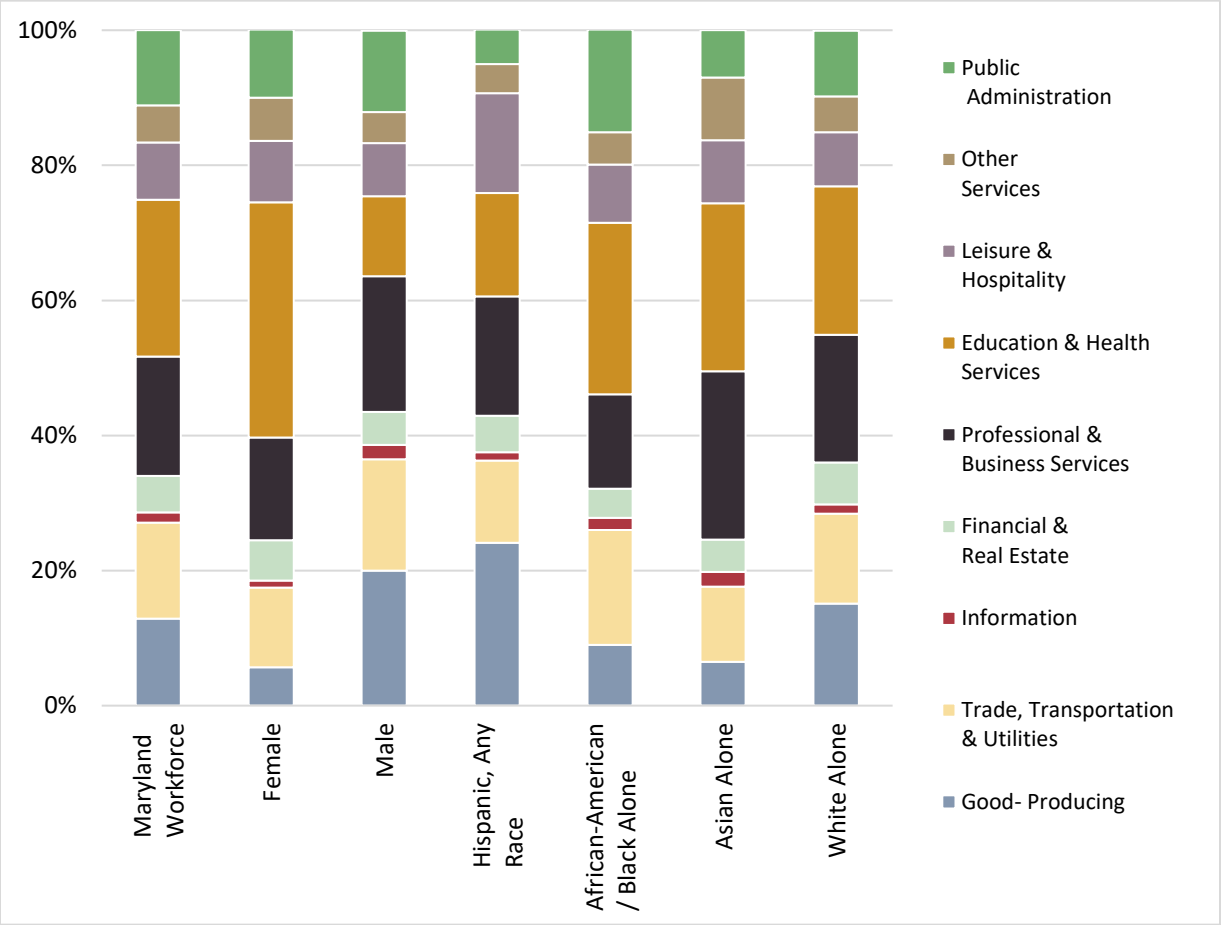
Second, *Leisure & Hospitality*, *Professional & Business Services*, and *Financial & Real Estate* each had similar distributions when comparing groups and had distributions consistent with the overall same-employer high school graduates. One exception was *Professional & Business Services.* This sector had 15% of overall same-employer high school graduates, and between 13% and 17% of each demographic and economic group; however, 22% of *Asian Alone* same-employer graduates were concentrated in this sector, the second largest for *Asian Alone*.

Finally, the group distributions in one sector exhibited distinct differences in gender, race, and ethnic groups. *Males* were concentrated in the *Goods-Producing* sector at twice the rate of *Females*, while *White Alone* and *Hispanic, Any Race* were concentrated in this sector at twice the rate of *African-American/Black Alone* and *Asian Alone*. A gender-only pattern was prevalent in two industries: *Health Care & Social Assistance* and *Educational Services*. These two industries had two or three times as many *Female* as *Male* same-employer high school graduates, although little difference existed between racial and ethnic groups. For example, the *Health Care & Social Assistance* had 15% of all same-employer high school graduates, but 24% of *Female* and 5% of *Male.* Racial and ethnic groups in this sector ranged from 13% to 16% as did *FARMS* (17%) and *Non-FARMS* (14%).

These same-employer group distributions reflect patterns that are consistent with the overall distribution of the Maryland workforce for some sectors. See **Chart B**[25]. In Maryland, overall, *Female* appear less frequently in sectors such as *Goods-Producing* and *Trade, Transportation & Utilities* and more frequently in *Education & Health Services* as compared to *Male.* Other industries exhibited distinctly different distributions for Maryland workforce compared same-employer high school graduates. For example, the share of same-employer graduates in *Public Administration, Leisure & Hospitality* and *Professional & Business Services* exhibited little variation between groups for same-employer high school graduates, but distinct differences between racial and ethnic groups for the full workforce.

[25]U.S. Bureau of Labor Statistics. (2020). Geographic Profile of Employment and Unemployment, 2019. Table 20. Percent distributions of employed people by industry, gender, race, and Hispanic or Latino ethnicity, 2019 annual averages. https://www.bls.gov/opub/geographic-profile/home.htm. Note, FARMS is not a sub-group for the Bureau of Labor Statistics (BLS) therefore no comparisons can be directly made to the overall Maryland workforce distributions and FARMS distributions. BLS reports on Educational Services and Health Care and Social Services under Education and Health Services. Data were not available on the individual groups from the geographic profile report.

Chart B. State of Maryland, 2019, Industry of Employment by Group for Maryland Workforce



Median Quarterly Wages by Sector for Demographic and Economic Groups

The median quarterly wages for each demographic and economic group for the three sectors with the largest shares of same-employer graduates are provided in **Chart C.** The median quarterly wages for all groups and sectors are provided in **Appendix 7.**

Overall, there were differences in the median quarterly wages for each group within each of the three sectors, although the differences were less pronounced in *Leisure & Hospitality*. Generally, the median quarterly wages were higher for *Male, White Alone,* and *Non-FARMS* high school graduates with same-employer wages, five years after high school graduation compared to the medians for *Female, FARMS,* and other racial and ethnic groups. The differences in median quarterly wages between groups may appear small; however, when wage gaps are annualized the difference can be meaningful. For example, the difference between *Female* and *Male* in *Professional & Business Services* was $1,200 per quarter, a difference that translates to $4,800 per year. Or, considered another way, this difference covers the cost of transportation ($4,322) or close to the combined cost of food ($3,010) and medical expenses ($2,603) in the State of Maryland for 1 working adult according to the MIT Living Wage Calculator.

Chart C. Same-Employer High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Group, Five Years after High School Graduation

It is also worth noting how the group medians compare to the contextual wage indicators. See **Chart C** and **Table A.** In *Leisure & Hospitality,* the median quarterly wages for all groups were below the living wage by a similar amount. In *Trade, Transportation & Utilities* all group medians were below the living wage; however, *Female*, *African-American/Black Alone* and *Asian Alone* were further below living wage than other groups. Finally, in *Professional & Business Services* the median quarterly wages ranged from just at or above the living wage to nearing the ACS wage. *FARMS* and *African-American/Black Alone* were just at the living wage, while *Female* and *Hispanics, Any Race* were just over the living wage. *Male, Asian Alone* and *White Alone* in this industry were all $2,000 or more above the living wage.

Table A. Same-Employer High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Group, Five Years after High School Graduation

Group	Trade, Transportation, and Utilities		Professional and Business Services		Leisure and Hospitality	
	n	$	n	$	n	$
Overall	4,864	$6,023	3,056	$8,934	3,035	$5,114
Female	2,098	$5,281	1,501	$8,334	1,620	$5,036
Male	2,766	$6,613	1,555	$9,536	1,415	$5,178
FARMS	1,817	$6,023	821	$7,692	1,056	$5,333
Non-FARMS	3,047	$6,020	2,235	$9,630	1,979	$4,974
Hispanic, Any Race	556	$6,469	286	$8,393	300	$5,599
African-American/Black Alone	1,865	$5,649	878	$7,380	984	$4,978
Asian Alone	235	$4,725	225	$10,248	151	$4,893
White Alone	2,310	$6,438	1,682	$9,828	1,632	$5,237

Note: Categories do not total due to omitted groups. (Pink = between minimum wage and living wage; and Blue = between living wage and ACS median wage)

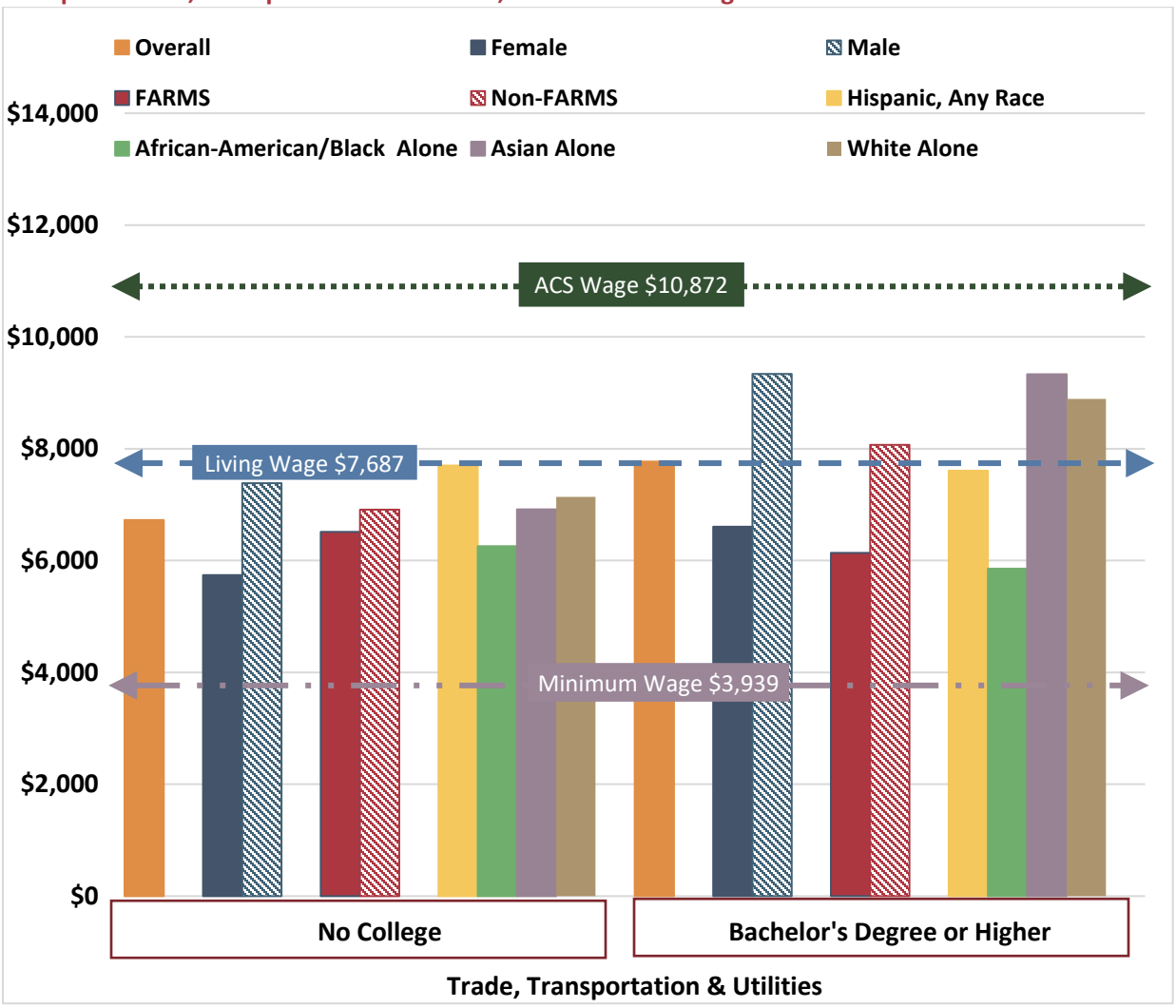
The wage gaps between groups for same-employer high school graduates, five years after graduation, are approximately the gaps present between groups in the overall Maryland workforce. For example, in Maryland in 2019, the median annual wage was for $46,057 *Males* and $40,080 for *Females* in *Trade, Transportation & Utilities*, or about $1,500 per quarter[26]. The U.S. Census does not provide wage data by race and ethnicity at the sector level; however, the median earnings in 2019 for *White Alone Males* was $72,578, while it was $51,856 for *African-American/Black Alone Males,* a difference of over $5,000 per quarter[27]. It is important to note that the gaps between these last two groups does not account for wage differentials that occur between labor sectors and is comprehensive of all workers, those in entry-level, minimum wage jobs in lower paying industries and those with extensive work histories in high-paying salaried fields.

[26]U.S. Census Bureau. (2020). *Industry by Sex and Median Earnings in the Past 12 Months (In 2019 Inflation-Adjusted Dollars) For the Civilian Employed Population 16 Years and Over*. American Community Survey. State of Maryland. Table S2413.
[27]U.S. Census Bureau. (2020). *Selected Population Profile in the United States. 2019: ACS 1-Year Estimates.* American Community Survey. State of Maryland. Table S0201.

The medians presented in **Chart C** and **Table A** do not account for educational attainment. It is possible the differences in wages between groups reflects differences in educational attainment and thus different types of employment within each sector. **Charts D through F** and **Table B** (at the end of this supplement) present the median quarterly wages for the three sectors with the largest shares of same-employer graduates for those with *No College* and those with *Bachelor's Degree or Higher* to further explore wages between demographic and economic groups when considering the two extreme ends of the educational attainment spectrum.

This analysis demonstrated some interesting patterns for wages. First, the gaps were larger between groups at higher levels of education than at lower levels of education. For example, the wage gap between *Female* and *Male* for *No College* in *Trade, Transportation & Utilities* was around $1,600 but it was $2,700 for *Bachelor's Degree or Higher.* Additionally, within this sector the median quarterly wages for *Male, Non-FARMS, Asian Alone,* and *White Alone* were all above the living wage for *Bachelor's Degree or Higher* but below the living wage for all other groups.

Chart D. Same-Employer High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Group for Trade, Transportation & Utilities, Five Years after High School Graduation

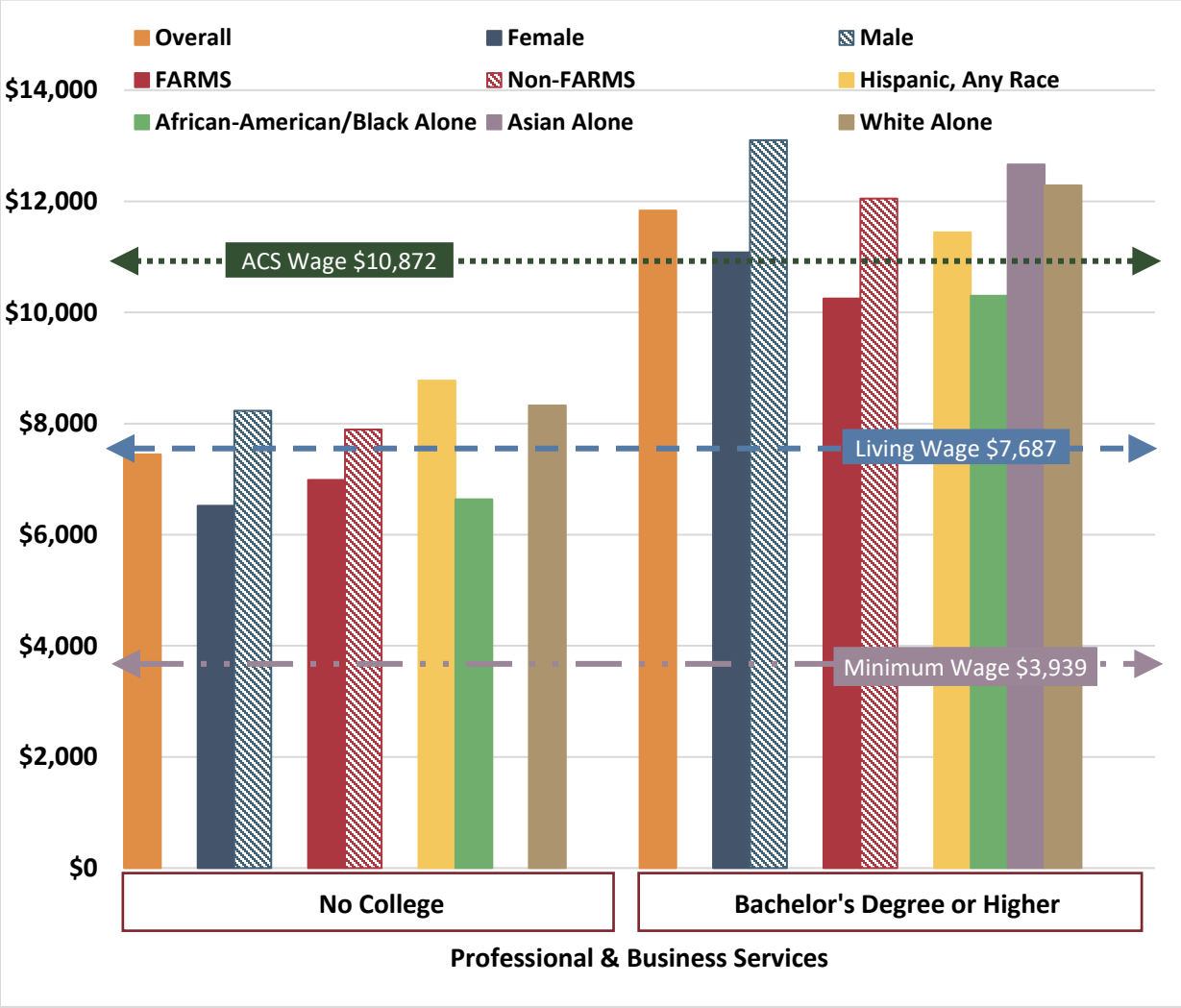


Professional & Business Services had similar wage gap patterns to those in *Trade, Transportation & Utilities.* **See Chart E**. Wage gaps were again more pronounced at higher levels of education. The gap between groups with *No College* was around $800. The gap between groups in *Bachelor's Degree or Higher* was around $2,000.

Notably here, the median quarterly wages for *Female, Male, Non-FARMS, Hispanic, Any Race, Asian Alone* and *White Alone* were all above the ACS wage for *Bachelor's Degree or Higher,* however, the overage was much smaller for *Female* and *Hispanic, Any Race*. Only *African-American/Black Alone* had a median quarterly wage below the ACS wage.

This pattern was similar for *No College. Females, FARMS,* and *African-America/Black Alone* had median quarterly wages below the living wage while *Male, Non-FARMS, Hispanic, Any Race,* and *White Alone* had median quarterly wages at or above the living wage.

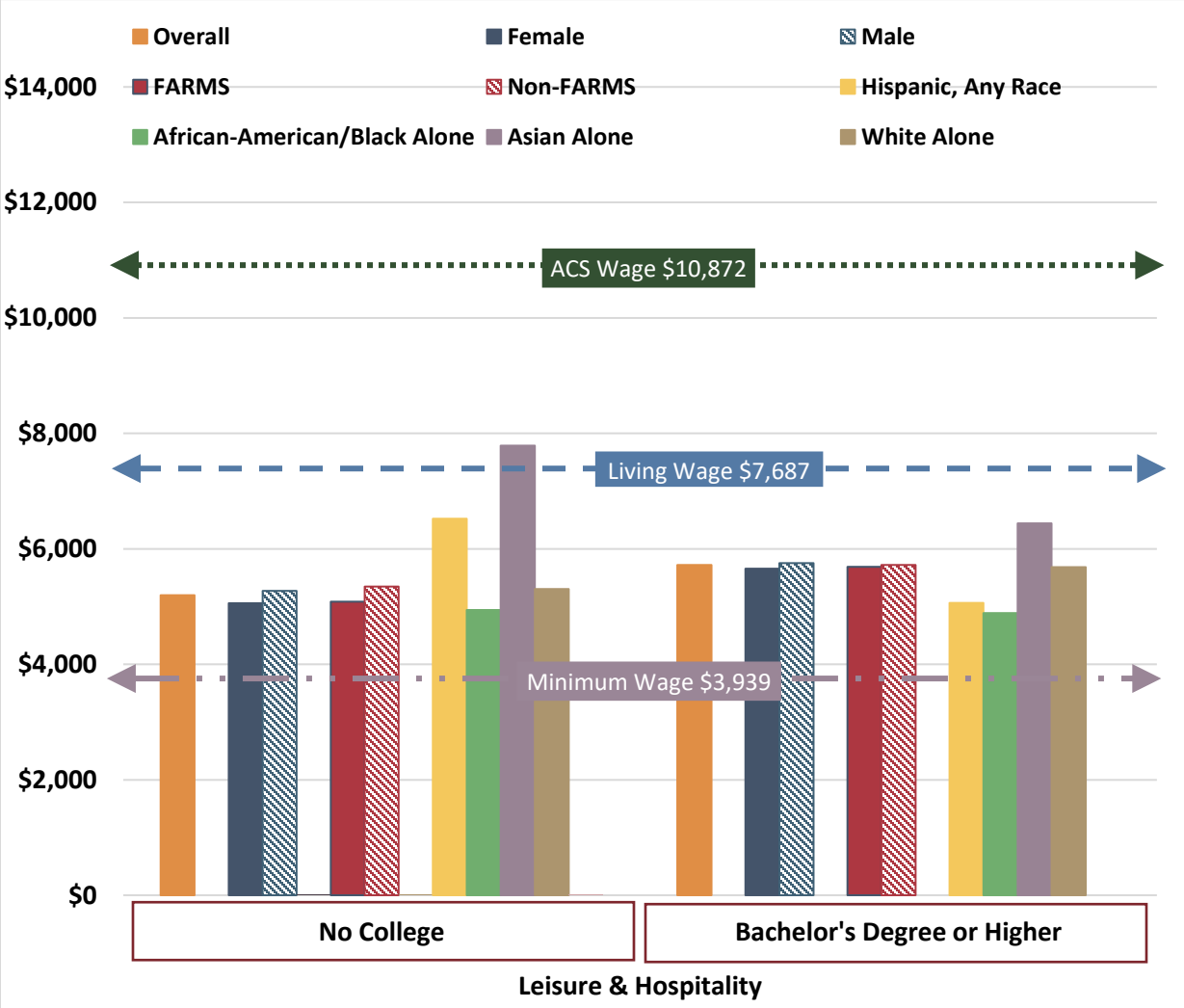
Chart E. Same-Employer High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Group for Professional & Business Services, Five Years after High School Graduation



Note: Data for *Asian Only* in *No College* have been suppressed to protect unauthorized disclosure of protected information.

Finally, the median quarterly wages for *Leisure & Hospitality* had some differences between racial and ethnic groups but very minor gaps between genders or FARMS. *Hispanic, Any Race* and *Asian Alone* both had higher median quarterly wages than *White Alone* or *African-American/Black Alone* for *No College.* While *White Alone* and *Asian Alone* had higher median quarterly wages than *Hispanic, Any Race* and *African-American/Black Alone* for *Bachelor's Degree or Higher.* **See Chart F**.

Chart F. Same-Employer High School Graduates, State of Maryland, 2014, Median Quarterly Wages by Group for Leisure & Hospitality, Five Years after High School Graduation



The limitations of the wage data make it difficult to interpret the differences between group median quarterly wages identified in this supplement. Wage data provide the sector of the employer rather than the job of the employee. The wage differentials that appear to exist between groups may be attributable to the wide range of positions within each industry. For example, all industries require specialized skills, such as accounting, or technical skills, such as network security, these positions require specific training or expertise like are likely to have higher pay. Other positions within the same industry require general skills, such as managers or sales representatives, and are likely to pay less, especially at entry level. The between group wage gaps within a sector may really reflect a concentration of demographic or economic groups within lower-paying positions within that sector rather than lower pay for the same job.

The between group wage differentials for *Bachelor's Degree or Higher* may be attributable to a second factor: college major. College majors provide a conduit to career pathways. Some career pathways have lower entry-level wages, such as account representative, and others have higher entry level wages, such as software developer, yet both require a Bachelor's degree. As with *No College*, if a demographic or economic group is concentrated in major and that major corresponds to an entry-level position with lower pay, then the wage differential may reflect that major-position concentration rather than pay disparities between groups for the same job.

This latter point may further explain why the wage differentials between groups are larger at higher levels of education. At lower levels of education, there may be less variation in entry-level career pathways. In short, those who do not continue on to college are engaged in entry-level jobs that require similar levels skills resulting in smaller pay gaps, while those who continue on to college are engaged in entry-level jobs that have a wider range of skills, some of which provide a wage premium.

The patterns discussed here for three sectors are not necessarily true for all sectors. In some sectors, gaps are wider at lower levels of education, while in other sectors, the gaps reverse, with *Female* or *African-American/Black Alone* having higher median quarterly wages than *Male* or *White Alone*. **Appendix 7** provides median quarterly wage data on all demographic and economic groups for all industries and levels of education. Additionally, two groups, *Asian Alone* and *Hispanic, Any Race* are much smaller than *African-American/Black Alone* and *White Alone.* **See Table B.** Small populations may provide too little data for conclusive results and should be interpreted with caution.

Finally, in considering the wage data presented in this supplement, it is important to remember that these high school graduates are approximately 23 years old at the point of wage observation, in entry-level positions, and unlikely to have extensive work histories that would translate to wage premiums, *yet differences are present*. Differences that could have significant implications for lifetime earnings. More research is required to understand and contextualize the between group wage gaps. When do they appear in career pathways? Are they due to pay disparities or the concentration of demographic and economic groups in certain careers and majors? How do issues of access limit or overcome these concentrations? And, do the gaps close over time with career progression?

Table B. Same-Employer High School Graduates, State of Maryland, 2014, Median Quarterly Wage by Group and Industry

Trade, Transportation & Utilities						
	Overall		No College		Bachelor's Degree or Higher	
Group	n	$	n	$	n	$
Overall	4,864	$6,023	1,362	$6,724	368	$7,773
Female	2,098	$5,281	445	$5,740	209	$6,609
Male	2,766	$6,613	917	$7,383	159	$9,336
FARMS	1,817	$6,023	683	$6,516	58	$6,141
Non-FARMS	3,047	$6,020	679	$6,909	310	$8,070
Hispanic, Any Race	556	$6,469	135	$7,699	23	$7,609
African-American/Black Alone	1,865	$5,649	545	$6,259	98	$5,856
Asian Alone	235	$4,725	18	$6,917	20	$9,335
White Alone	2,310	$6,438	685	$7,140	228	$8,893

Professional & Business Services						
	Overall		No College		Bachelor's Degree or Higher	
Group	n	$	n	$	n	$
Overall	3,056	$8,934	581	$7,444	940	$11,835
Female	1,501	$8,334	218	$6,521	513	$11,080
Male	1,555	$9,536	363	$8,232	427	$13,102
FARMS	821	$7,692	275	$6,985	113	$10,250
Non-FARMS	2,235	$9,630	306	$7,892	827	$12,046
Hispanic, Any Race	286	$8,393	69	$8,772	47	$11,438
African-American/Black Alone	878	$7,380	257	$6,634	130	$10,300
Asian Alone	225	$10,248	*	*	116	$12,662
White Alone	1,682	$9,828	278	$8,325	622	$12,285

Leisure & Hospitality						
	Overall		No College		Bachelor's Degree or Higher	
Group	n	$	n	$	n	$
Overall	3,035	$5,114	656	$5,199	257	$5,720
Female	1,620	$5,036	315	$5,060	176	$5,655
Male	1,415	$5,178	341	$5,274	81	$5,754
FARMS	1,056	$5,333	359	$5,082	34	$5,688
Non-FARMS	1,979	$4,974	297	$5,348	223	$5,720
Hispanic, Any Race	300	$5,599	60	$6,524	15	$5,062
African-American/Black Alone	984	$4,978	281	$4,939	50	$4,887
Asian Alone	151	$4,893	10	$7,785	10	$6,441
White Alone	1,632	$5,237	311	$5,304	179	$5,681

Note: Categories do not sum to overall total due to omitted groups.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

Supplement 2: Intervening Degrees and Degree Pathways

This supplement to the Career Preparation Expansion Act report explores the wages and academic history of students in the *Some College*, *Still in College,* and *Bachelor's Degree,* educational attainment groups. Specifically, this supplement asks:

- How many institutions did these students attend? For how long?
- What types of institutions did these student attend?
- Did any students earn a degree prior to being placed in one of these three categories?

Methodology

The postsecondary histories of students with full-quarter wages in three educational attainment groups (*Some College, Still in College,* and *Bachelor's Degree*) were evaluated to determine 1) the number of colleges attended, 2) the number of college enrollment periods for each high school student for the five year period after graduation and 3) the college type at entry and exit into postsecondary education.

The number of colleges attended was determined by counting each college with at least one period of enrollment. Enrollment at more than one college may have been concurrent, consecutive, and/or overlapping. The number of enrollment periods was determined by counting each period of enrollment at each college. Enrollment periods may have been concurrent, consecutive, and/or overlapping. Concurrent periods were counted as a single enrollment period even though enrollment was at more than one college. Periods of enrollment were not necessarily contiguous. Lags may occur between enrollment periods. Enrollment periods were aggregated to approximate lapsed time. See **Table A**.

Table A. Enrollment Period Conversion to Enrollment Duration

Educational Attainment	One Term	One Year	Two Years	Three Years	Four Years	Four or More Years
Number of Enrollment Periods	1	2 to 3	4 to 6	7 to 9	10 to 12	13 or more

Each student's postsecondary academic career was evaluated to identify the college type at initial and final enrollment. Enrollments were classified as beginning or ending at a 1) Maryland Community College, 2) Maryland Public Four-Year or State-Aided Independent (referenced as "MD Four-Year"), 3) Out-of-State at any type of institution, or 4) Other. National Student Clearinghouse (NSC) data were used to determine enrollment in out-of-state colleges and other types of colleges. NSC data are available for the five-year period following graduation from a Maryland public high school.

The college type at final enrollment represents the following:

- *Some College*: the last college attended before disengaging from postsecondary education.
- *Bachelor's Degree*: college conferring the degree.
- *Still in College*: college of current enrollment.

Finally, each student's postsecondary academic career was also evaluated to determine if the student earned an intervening degree. An intervening degree is defined as a student earning a postsecondary Certificate, Associate's, or Bachelor's *prior* to being placed into an educational attainment category. Only the highest intervening degree was counted.

Results

Some College and Still in College

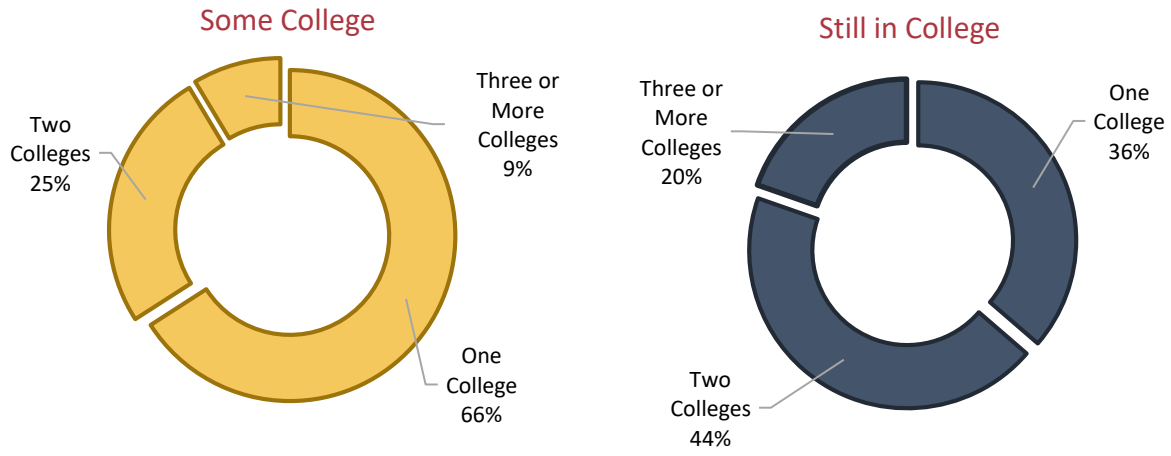
On average, high school graduates with full-quarter wages with *Some College* or *Still in College* attended one to two colleges during the five-year period after high school graduation. See **Table B** and **Figure A**.

Table B. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Number of Colleges Attended, Five Years after High School Graduation

Educational Attainment	Full-Quarter Wages	Average Number of Colleges Attended	One College		Two Colleges		Three or More Colleges	
			#	%	#	%	#	%
Some College	10,508	1.45	6,926	66%	2,678	25%	904	9%
Still in College	5,292	1.88	1,923	36%	2,329	44%	1,040	20%

The majority of *Some College* high school graduates with full-quarter wages attended one college only (66%). Only 9% of these *Some College* high school graduates attended three or more colleges. The fact that two-thirds of *Some College* disengaged after attending only one institution may signal limited options for postsecondary enrollment in some regions of Maryland. High school graduates may have been geographically limited in options, and, when that one option did not align to their needs or expectations, may have disengaged rather than relocate for college.

Figure A. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Number of Colleges Attended, Five Years after High School Graduation



Still in College high school graduates with full-quarter wages primarily attended one (36%) or two colleges (44%); however, a considerable portion did attend three or more colleges (20%). Attending multiple colleges could be due evolving academic interests, pursuit of advanced degrees, or interest in a different campus climate. For *Still in College* high school graduates that attended multiple colleges, it is possible that their time to degree will be extended due to credit loss that can occur when transferring between colleges or minimized due to articulation agreements between institutions.

The duration of college enrollment for high school graduates with full-quarter wages in the *Some College* and *Still in College* educational attainment groups had inverse patterns. The majority of *Some College* graduates were enrolled for three years or less, while the majority of *Still in College* graduates were enrolled for four years or more. This means that about two-thirds of the *Some College* high school graduates with full-quarter wages tried college either continuously or intermittently for about three years, while three-quarters of *Still in College* high school graduates with full-quarter wages were continuously enrolled for almost every term for the five-year period after graduation. See **Figure B** and **Table C**.

Figure B. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Duration of College Enrollment, Five Years after High School Graduation

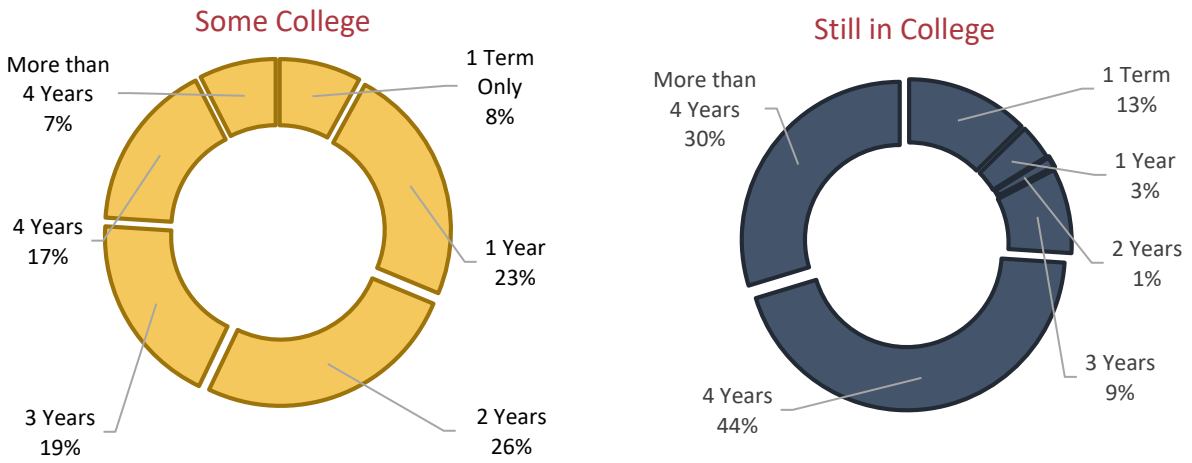


Table C. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Duration of College Enrollment, Five Years after High School Graduation

Educational Attainment	Full-Quarter Wages	Average Number of Terms Attended	Duration of Enrollment					
			1 Term Only	1 Year	2 Years	3 Years	4 Years	More than 4 Years
Some College	10,508	6.28	839	2,446	2,714	1,987	1,735	787
Still in College	5,292	10.12	667	190	62	459	2,343	1,571

The majority of both the *Some College* and *Still in College* groups began their academic careers in a Maryland community college. See **Table D**. Similarly, the majority of each group ended (*Some College*) or were continuing (*Still in College*) their academic careers at a Maryland community college. The share of out-of-state enrollments for *Still in College* is also noteworthy. Often enrolling in college out-of-state is more expensive than remaining in-state. The share of *Still in College* with an initial enrollment out-of-state is small, suggesting that high school graduates who enroll in college out-of-state finished within five years, possibly due to the expense. Those continuing out-of-state may indicate a transfer from in-state to out-of-state institution or reflect a new enrollment to pursue an additional college degree.

Table D. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, College Enrollment Types, Five Years after High School Graduation

Educational Attainment	Full-Quarter Wages	First Term of Enrollment				Last Term of Enrollment			
		MD Community College	MD Four Year	Out-of-State	Other	MD Community College	MD Four Year	Out-of-State	Other
Some College	10,508	6,884	1,691	826	1,107	7,077	1,611	563	1,257
Still in College	5,292	2,858	1,796	34	604	2,649	1,894	296	453

One goal of this supplement was to determine if any of the *Some College* and *Still in College* high school graduates earned an intervening degree. Specifically, did the *Some College* high school graduates earn a degree, continue their academic careers, and then disengage without finishing the additional degree? Or, for the *Still in College* high school graduates, did any earn a degree and decide to continue on to pursue an additional degree? See **Table E**.

Table E. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Intervening Degree, Five Years after High School Graduation

Educational Attainment	Full-Quarter Wages	Intervening Degree		No Degree
		Certificate or Associate's	Bachelor's	
Some College	10,508	*	*	10,498
Still in College	5,292	1,925	2,452	915

*indicates value is suppressed to protect unauthorized disclosure of protected information.

Only a few *Some College* high school graduates with full-quarter wages earned a college degree before disengaging from postsecondary education. This means that the two-thirds of *Some College* high school graduates started at a Maryland community college (**Table D)** and exited the community college without completing any type of postsecondary credential (**Table E**) despite being enrolled for two to three years at the same college (**Tables B and C**).

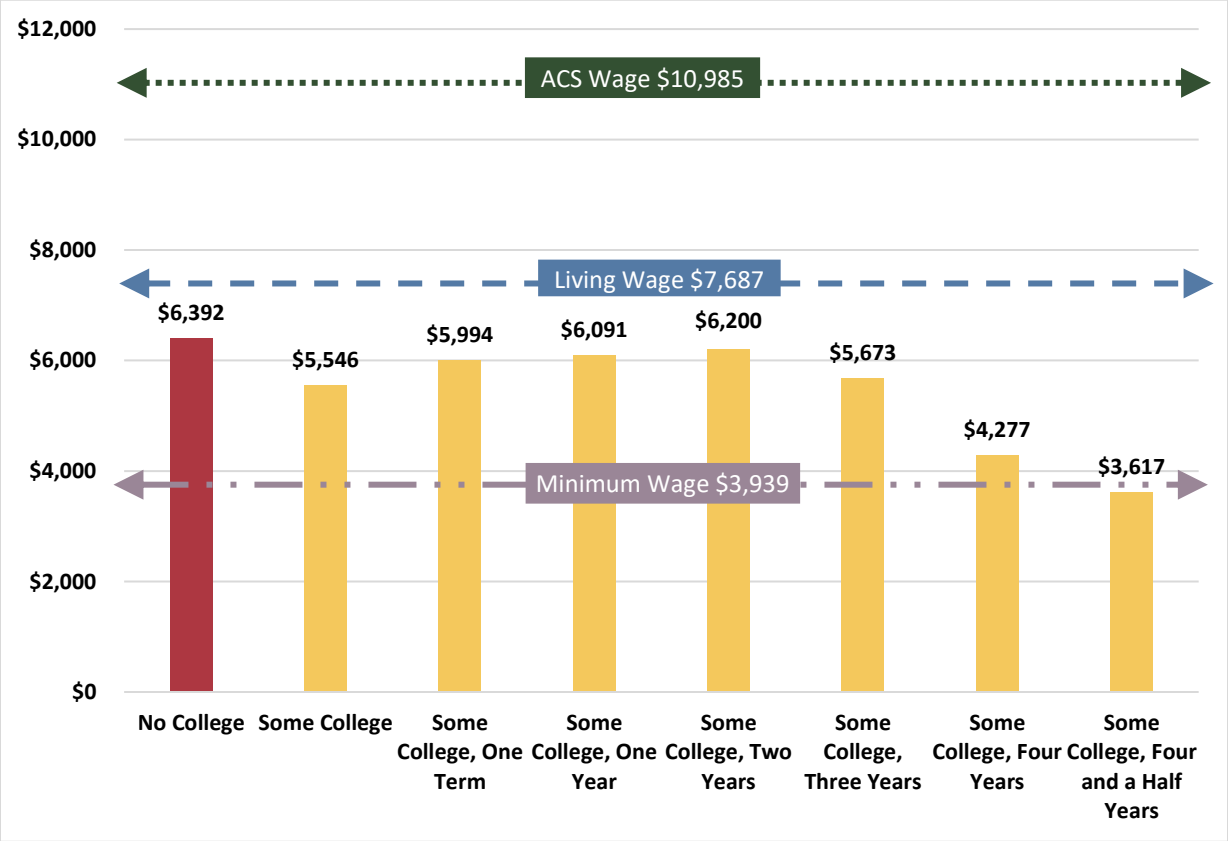
Comparatively, about half of all *Still in College* high school graduates with full-quarter wages earned a Bachelor's degree and were *Still in College*, while a third earned an Associate's degree and were *Still in College* (**Table E)**. These *Still in College* high school graduates may be pursuing second Bachelor's or a second Associate's, or may be seeking to advance an initial Associate's degree to a Bachelor's degree or

an initial Bachelor's degree to a Master's degree. These data are particularly important as they indicate that the *Still in College* high school graduates, rather than slowly progressing toward a first degree, actually completed one degree and are progressing toward a second degree within five years.

Finally, while the *Some College* high school graduates were enrolled for an extended period without earning a postsecondary degree, the question remains, *does their enrollment, even without a formal degree, differentiate them in the labor force?* Does duration of enrollment for *Some College* high school graduates with full-quarter wages create variation in wages?

There does appear to be a relationship between enrollment duration and wages for *Some College* high school graduates with full-quarter wages. See **Table F** and **Chart A**.

Chart A. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Median Quarterly Wages by Enrollment Duration for Some College, Five Years after High School Graduation



Some College high school graduates who were enrolled for one term only or enrolled for one to two years had higher median quarterly wages as compared to those enrolled for three or more years. In fact, the median quarterly wages for those with enrollments of two years or less were within a few hundred dollars of the median quarterly wage for those graduates who did not pursue any additional college education (*No College).* This is despite the fact that *Some College* graduates were not necessarily available to be engaged in the workforce in a full-time career-track capacity while enrolled in college,

while *No College* high school graduates would have been available to immediately enter full-time career-track employment. It is possible that *Some College* does provide opportunities for increased wages as compared to *No* College. For *Some College* high school graduates with longer enrollment durations, their delayed entry to career-track employment combined with a lack of degree may have implications for lifetime earnings.

Table F. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Some College Median Quarterly Wages by Enrollment Duration, Five Years after High School Graduation

Educational Attainment	Full-Quarter Wages	Q20 Median Quarterly Wage
Some College	*10,508*	*$5,546*
One Term Only	839	$5,994
1 Year	2,446	$6,091
2 Years	2,714	$6,200
3 Years	1,987	$5,673
4 Years	1,735	$4,277
4.5 Years	787	$3,617

Bachelor's Degree

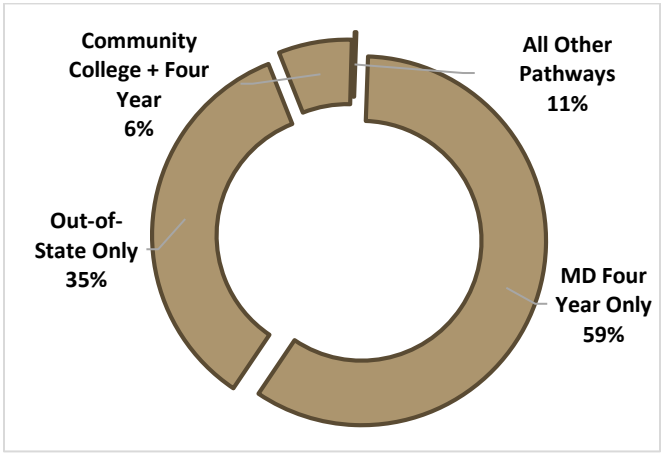
The last section of this supplement explores the academic pathway of high school graduates who earned Bachelor's degrees within 4.5 years of high school graduation. More high school graduates who earned a Bachelor's degree within 4.5 years enrolled in college out-of-state. See **Table G**. This does not mean that more high school graduates enrolled out-of-state than in-state. Rather, it means that of those who earned a Bachelor's degree within 4.5 years of high school graduation, more did so by enrolling out-of-state.

Table G. High School Graduates, State of Maryland, 2014, College Type for Bachelor's Degree

Educational Attainment	All High School Graduates	MD Four Year Only		Out-of-State Only		MD Community College + MD Four Year		All Other Pathways	
		n	%	n	%	n	%	n	%
Bachelor's Degree	11,134	4,494	40%	6,191	56%	395	3.5%	54	<1%

The majority of high school graduates with full-quarter wages obtained their Bachelor's degree by enrolling exclusively in a Maryland four-year institution or an out-of-state institution. Very few obtained a Bachelor's degree within 4.5 years by beginning at a Maryland community college. See **Figure C**.

Figure C. High School Graduates with Full Quarter Wages, State of Maryland, 2014, Bachelor's Degree Pathway



Further, *Bachelor's Degree* high school graduates with full-quarter wages on average attended 1.5 institutions, with over half attending only one institution for the entire duration of their degree. See **Table H**.

Table H. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Colleges Attended for Bachelor's Degree

Educational Attainment	Full-Quarter Wages	One College	% One College	Two Colleges	% Two Colleges	Three or More Colleges	% Three or More Colleges
Bachelor's Degree	4,157	2,259	54%	1,516	36%	382	9%
MD Four Year Only	2,448	1,406	57%	819	33%	223	9%
Out-of-State Only	1,436	849	59%	471	33%	116	8%
Community College then MD Four Year	267	**	**	*	*	*	*
All Other Paths	6	**	**	*	*	*	*

*indicates value is suppressed to protect unauthorized disclosure of protected information.
**indicates no records meet definition.

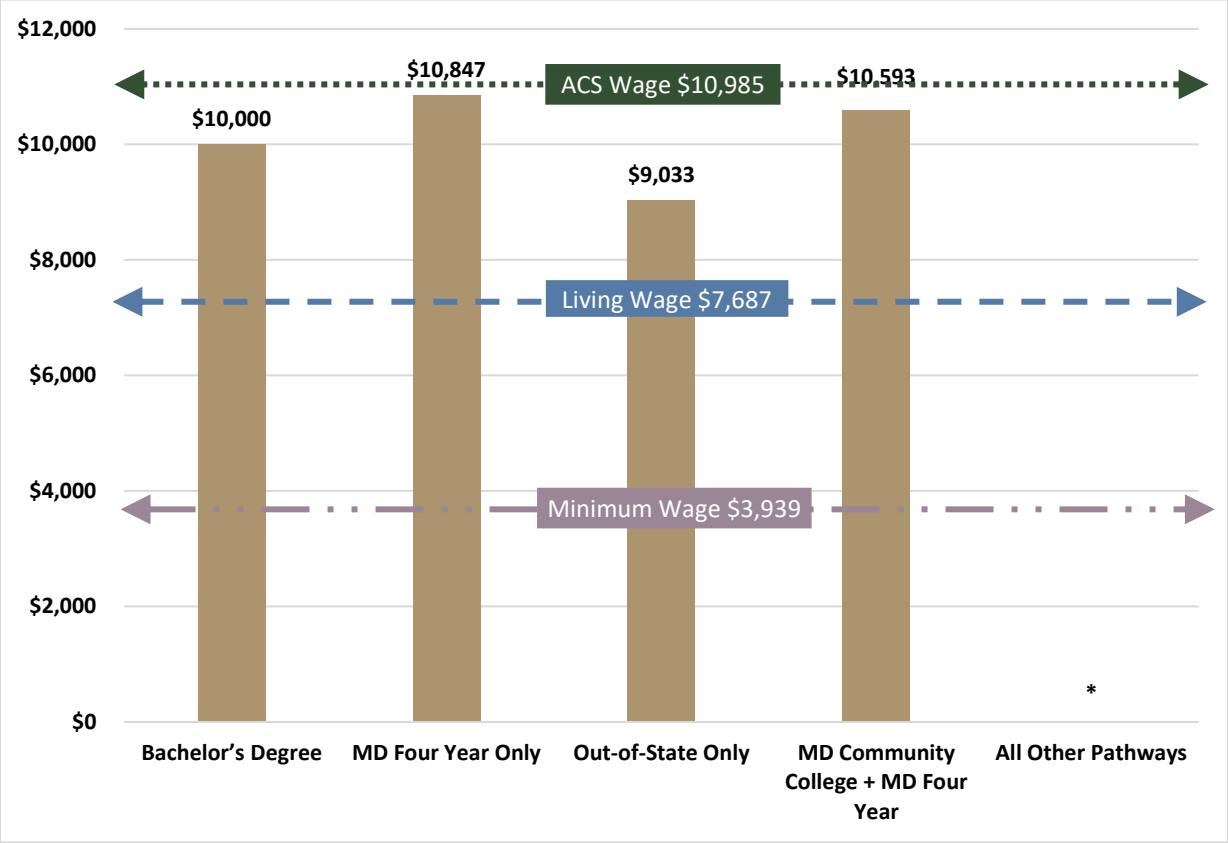
High school graduates who earned a Bachelor's degree in 4.5 years through an in-state pathway were more visible in the wage data five years after high school graduation than those who enrolled out-of-state. See **Table I**. Only 23% of *Out-of-State* Bachelor's degree graduates were visible in Maryland wage data five years after high school. Over half of *MD Four Year Only* were visible in Maryland wage data five years after high school. This may suggest that graduates tend to seek employment in the state in which they earn their Bachelor's degree. While the number of high school graduates who earned a Bachelor's degree within 4.5 years by starting a Maryland community college is small, it is noteworthy that these graduates are highly visible in Maryland wage data.

Table I. High School Graduates, State of Maryland, 2014, Wage Visibility by Bachelor's Degree Pathway

Educational Attainment	Total	Full-Quarter Wages	% with Full-Quarter Wages
Bachelor's Degree	11,134	4,157	37%
MD Four Year Only	4,494	2,448	54%
Out-of-State Only	6,191	1,436	23%
Community College then MD Four Year	395	267	68%
All Other Paths	54	6	11%

Regardless of the pathway high school graduates completed to earn a Bachelor's degree, all pathways resulted in median quarterly wages above the living wage. See **Chart B** and **Table J**. Additionally, both the *MD Four Year Only* and *MD Community College + MD Four Year* had median quarterly wages almost exactly at the *ACS Wage* while the *Out-of-State Only* was below the *ACS Wage.* While the population of the *Community College + MD Four Year* is small, it is noteworthy that this group had a median quarterly wage that was nearly equal to that of *MD Four Year Only* and above *Out-of-State Only.* These students most likely saved money on their education by beginning at Maryland community college and appear to have the potential to command the same wages as those who exclusively attend four-year institutions.

Chart B. High School Graduates with Full Quarter Wages, State of Maryland, 2014, Median Quarterly Wages by Bachelor's Degree Pathway, Five Years after High School Graduation



*wages are not reported for populations of less than 10.

Table J. High School Graduates with Full-Quarter Wages, State of Maryland, 2014, Median Quarterly Wages by Bachelor's Degree Pathway, Five Years after High School Graduation

Educational Attainment	Full-Quarter Wages	Q20 Median Quarterly Wage
Bachelor's Degree	4,157	$10,000
MD Four Year Only	2,448	$10,487
Out-of-State Only	1,436	$9,033
Community College + MD Four Year	267	$10,593
All Other Paths	6	*

*wages are not reported for populations of less than 10.

CONCLUSIONS AND IMPLICATIONS

The Career Preparation Expansion Act, Chapter 695 of 2017 (CPEA) requires the Maryland Longitudinal Data System (MLDS) Center and the Governor's Workforce Development Board (GWDB) to produce a report on employment for high school graduates five years after graduation. The analysis in this report demonstrates that outcomes, five years after high school graduation, vary greatly by educational attainment and sector of employment. The results in this year's report are consistent with the 2018 and 2019 CPEA reports. Wages are higher for high school graduates who finish college at all degree levels than those who 1) do not pursue postsecondary education or 2) do pursue postsecondary education but disengage without earning a degree. These results are also consistent with national data available on earnings by level of educational attainment.[28]

Also consistent across all three reporting years is the proportion of high school graduates who do not pursue college, attempt college but do not graduate, or earn a college degree. One-quarter of each cohort never attempted college in the five-year period after high school graduation. Around 35% of each cohort year attempted college but suspended their educational pursuits without earning a degree. Postsecondary degree attainment did increase slightly, from 20% of high school graduates in 2012 to 22% of high school graduates in 2014. As noted in the second supplement, this rate is understated as the majority of high school graduates that are *Still in College*, five years after high school graduation, earned either an Associate's degree or a Bachelor's degree and were continuing to advance their education rather than still working toward a first degree. When these high school graduates finish their additional credentials, they will almost double the number of college graduates from the 2014 cohort with a college degree.

Educational Attainment	2012 Cohort		2013 Cohort		2014 Cohort	
All High School Graduates	*59,510*		*59,560*		*58,136*	
No College	14,118	24%	14,226	24%	13,497	23%
Some College	20,778	35%	21,316	36%	20,456	35%
Still in College	12,719	21%	11,704	20%	11,210	19%
College Degree	11,895	20%	12,314	21%	12,973	22%

It is important to recall that the focus of this report is on wages rather than college enrollment and completion. This year's supplement explored additional data points related to high school graduates with some college, who were still in college, or who earned a Bachelor's degree to consider the relationship between various postsecondary pathways and their corresponding wages.

Exploring the *Some College* pathway identified an interesting wage pattern. Overall, high school graduates with full-quarter wages and *Some College* had a lower median quarterly wage than those

[28]Baum, S., Pender, M. & Welch, M. (2019). Education Pays 2019: The benefits of higher education for individuals and society. College Board.

without any exposure to college, suggesting that trying college and not finishing may be a worse career decision than not going to college at all. However, this may not be true for those with *Some College* for shorter durations of college enrollment. Those with full-quarter wages who attended college two years or less had a median quarterly wage that was higher than the overall *Some College* median and closer to that of *No College*. This suggests that a period of time in college, even without earning a degree, may translate to marketable workforce skills that provide positive wage outcomes. The *No College* group had five full years to pursue career track employment and experience wage progressions, while the *Some College* group with one or two years of college enrollment had similar earning despite having half that time to pursue career track employment. This result is consistent with other research that suggests that *Some College* does not necessarily mean lower wages compared to *No College*.[29]

Further exploration of the *Still in College* group with full-quarter wages also yielded more insight to their educational pathway and related wages. On the surface, this group appears to be letting work delay their degree progression, something that may ultimately decrease lifetime earnings. When looking more closely, the majority of this group, rather than still progressing towards a first degree, actually earned a degree and were progressing towards a second degree *while working*. Further research on this group is warranted as some research suggests that working while in college may be beneficial by allowing students to gain valuable work experience concurrent to their education[30]. For this group, it is also possible that they secured career-related employment after their first degrees and are receiving tuition support from an employer to continue their educations.

Finally, there were three important patterns identified by this report regarding the pathway to a *Bachelor's Degree* and wages. This report highlights the potential magnitude of "brain drain" or the loss of high school graduates from Maryland's labor force due to enrollment in out-of-state colleges. Each year, approximately 10% of high school graduates enroll in college out-of-state[31]. For this cohort, more than half of high school students who earned a Bachelor's degree in 4.5 years did so by attending out-of-state institutions and only 23% of those graduates had full-quarter wages in Maryland five years after high school graduation or 6 months after earning a bachelor's degree. Gaps in the wage data make it difficult to conclude why this population is not visible in the wage data. It is possible that many never returned to Maryland after college, seeking employment in other states, as demonstrated in other Center research. It is also possible that many returned to Maryland, but required additional time to secure employment in Maryland before meeting the definition of full-quarter wages or that they are residing in Maryland but employed in positions that are not subject to UI wage reporting. Second, those

[29]Baum, S, Pender, M. & Welch, M. (2019). Education Pays 2019: The benefits of higher education for individuals and society. College Board.
Hussar, B., Zhang, J., Hein, S., Wang, K., Roberts, A., Cui, J., Smith, M., Bullock Mann, F., Barmer, A., and Dilig, R. (2020). The Condition of Education 2020 (NCES 2020-144). U.S. Department of Education. Washington, DC: National Center for Education Statistics. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020144.
[30]St. Amour, M. (2019) Working College Students. Inside Higher Education. https://www.insidehighered.com/news/2019/11/18/most-college-students-work-and-thats-both-good-and-bad
[31]MLDS Center. Initial Postsecondary Enrollments - In-State vs. Out-of-State. https://mldscenter.maryland.gov/Dashboards.htm

high school graduates who pursued an in-state pathway to a bachelor's degree and received the bachelor's degree in 4.5 years were highly visible in the wage data. This group appears to remain in Maryland, join the Maryland workforce, and contribute to Maryland's economy at twice the rate of the out-of-state bachelor's degree population. The median quarterly wages for Maryland-educated bachelor's degree graduates suggests that Maryland's economy offers opportunities for recent college graduates that substantially exceed the basic cost of living in Maryland. Third, there was no difference in the median quarterly wages for high school graduates with full-quarter wages who completed their Bachelor's degree in 4.5 years exclusively at a Maryland four-year institution compared to those whose pathway began at a Maryland community college. This small population requires further exploration as there is a commonly held belief that a Bachelor's degree that begins with an educational experience at a community college is less valuable in the labor force.[32]

This year's report explored wages by demographic and economic groups within each labor sector and by subsequent educational attainment. The analysis identified several sectors that appear to have pay differentials between groups. Interpreting these results is difficult as the sector represents the labor sector of the employer rather than the job of the employee and fails to account for differences that may be attributed to differences in job types and college majors. Between group wage differences may not exist if information on job and major were included in the analysis. The analysis also identified the disproportionate participation by gender, race, ethnicity, and economic status in some sectors. The lack of participation may originate from employment practices or postsecondary opportunities. Some groups may lack access to college (either financially or geographically) or be under-representation at selective colleges or within selective majors. It may also reflect differing interests or the lack of confidence to pursue certain fields. Regardless of the source of the differing patterns, it is important to note that these patterns are present early, only five years after high school graduation, and exist even at higher levels of subsequent educational attainment.

The analysis presented in this report must be interpreted with caution as limitations on MLDS data create gaps in wage data. It is impossible to speculate on how the analysis may change if complete wage data were available or if graduates with periodic wages were included. The chart below summarizes the wage data available for analysis:

Method	Definition	Count	Percent
Population of Interest	2014 High School Graduates	58,136	-
Full-Quarter Employment	2014 High School Graduates with wage data in Q19, Q20 and Q21 or fiscal quarter 1, 2 and 3 of 2019	27,330	47%
Full-Quarter Employment – Same Employer	2014 High School Graduates with wage data from the same employer in Q19, Q20 and Q21 or fiscal quarter 1, 2 and 3 of 2019	19,860	34%

[32]Turk, J. (2019). Erasing the Community College Stigma. Higher Education Today. American Council on Education. https://www.higheredtoday.org/2019/06/26/erasing-community-college-stigma/

The major contextual indicator selected for this analysis, the living wage for one adult with no dependent children ($7,687 per fiscal quarter), is the living wage for the entire State of Maryland. This report provides a high-level statewide overview, one that may or may not hold if the analysis was conducted at the county level and/or accounted for other personal factors. The living wage across Maryland varies widely, from a low of $5,676 in Allegany County to a high of $8,759 in Montgomery County. This means that some graduates reported as being at or above the living wage may not be, while other reported as below the living wage may actually be above it. Further, some high school graduates, five years after high school graduation, may be married or have children, increasing the wages required to meet the basic cost of living.

Finally, it is important to note that the analysis presented here was conducted at the early stages in this population's career and represents entry level wages. Many individuals in this population have only been in the workforce for 1 to 3 years after college graduation. The wage outcomes reported here may increase rapidly. Associate's degree graduates from Maryland's community colleges, five years after college graduation, had a median quarterly wage of $10,967, this represents a gain of approximately $3,000 in two to three years over the median reported for Associate's degree graduates five years after high school graduation.[33] Even for high school graduates who do not continue to college, many may be exploring career options and training programs, including completing licensure requirements or apprenticeships, which may depress wages during the first two or three years of employment after high school. It is difficult to predict if the wages gaps present in early-career, entry-level wages between educational, demographic, or economic groups will widen or narrow as this cohort progresses through their careers.

Policy Considerations

Nationally, earnings for Bachelor's degree graduates were nearly double the earnings of those without a college degree ($52,500 vs. $29,800).[34] The unemployment rate in 2018 amongst Bachelor's degree graduates between the ages of 25 and 34 was just over 2%. Conversely, the unemployment rate amongst high school graduates without any college degree was more than double that at 5.7%[35]. Applied to this report, this means that as many as 60% of all high school graduates from the 2014 cohort (*No College* + *Some College*) included in this report may be more likely to experience lower wages and unemployment, both of which can have long term implications for lifetime earnings and career growth.

The Maryland General Assembly enacted the College and Career Readiness and College Completion Act of 2013 (CCR-CCA) to focus attention on educational pathways through high school to college or to a career. CCR-CCA codified new education initiatives at both the high school and college levels. This report focused on the 2014 cohort of high school graduates, a cohort that graduated before the CCR-CCA high

[33]MLDS Center. (2020). Educational and Workforce Outcomes for Associate's Degree Graduates from Maryland's Community Colleges. Baltimore, MD: Maryland Longitudinal Data System Center.
[34]Baum, S, Pender, M. & Welch, M. (2019). Education Pays 2019: The benefits of higher education for individuals and society. College Board.
[35]Baum, S, Pender, M. & Welch, M. (2019). Education Pays 2019: The benefits of higher education for individuals and society. College Board.

school curriculum revisions and state funding for dual enrollment were fully in place. However, they did benefit from the postsecondary programs outlined in CCR-CCA. These programs include a policies intended to increase the transferability of credit between colleges, clarify degree pathways within a college, incentivize students to return to college to complete in-progress degrees (near completers), and allow credits from four-year institutions to be applied to an Associate's degree at community colleges (reverse transfer).

CCR-CCA also codified an educational attainment goal for the State of Maryland: *55% of its adult citizen must hold at least an Associate's degree by 2025*. The intent of this goal is to make sure the Maryland workforce possesses the skills necessary to sustain and grow Maryland's economy and have the skills needed for individual career growth and long-term career transitions. Increasing degree attainment amongst high school graduates is an important component of Maryland achieving this goal.

This report does suggest that high school students who continued on to college may be benefiting from the programs outlined in CCR-CCA and contributing to the state's degree attainment goal. There was a small increase in college degree attainment for this cohort as compared to the two prior CPEA report cohorts, and these programs may have contributed to intervening degree attainment for the *Still in College* group. The majority of *Still in College* high school graduates with full-quarter wages did in fact earn one degree and were continuing to progress to an additional degree. A small group of *Bachelor's Degree* high school graduates earned an Associate's degree and continued on to earn a Bachelor's degree, all within 4.5 years. It is also noteworthy that almost half of the high school graduates in the *Still in College* group were actively working while completing a second degree. This suggests that high school students need financial resources to pay for college and that they must balance the demands of work, home, and a postsecondary academic career.

The results of this study also show that as much as one-third of high school graduates (those with *Some College*), five years after high school graduation, may be able to participate in the CCR-CCA Near Completer and Reverse Transfer programs. Two-thirds of those with *Some College* and full-quarter wages were enrolled in college for one to three years. As such, many may have sufficient credit attainment to either reverse transfer and earn an Associate's degree, or complete remaining degree requirements for an Associate's or Bachelor's degree in a year or less. Increasing degree attainment at the bachelor's level for this group may require more than the funding or transfer credit policies outlined in CCR-CCA. These students may lack access to comprehensive four-year colleges. They may live in education deserts, or areas that are lacking in comprehensive open-access postsecondary institutions that grant bachelor's degrees. Policies that expand access, such as those that established regional higher education centers (RHEC) in Maryland, are critical to increasing access to bachelor's degrees in unserved and underserved areas. Moving these students, the largest block of high school graduates, from *Some College* to a college degree will help lift them beyond the living wage, position them for long-term career stability, and significantly contribute to Maryland's 55% degree attainment goal.

Finally, the results presented in this report suggest that wage differences between gender, race, ethnicity, and economic groups may begin as early as five-years after high school graduation. The

limitations of the MLDS Center wage data used to examine employment make it difficult to conclude why there are differences in wages between groups. The wage differences may be attributable to an individual's specific type of job rather than disparity in wages offered by employers for the same position. Expanding programs such as Pathways in Technology (P-TECH), Career and Technical Education (CTE), and STEM apprenticeships to high schools that are unserved or underserved may increase opportunities for high-paying careers that do not require a college degree and/or prepare high school students to enter college in majors that lead to high-paying careers. Concurrently, programs such as the Maryland College Application Campaign and state financial aid such as the Howard P. Rawlings Program of Excellence Awards, Foster Care Tuition Waivers, and Homeless Youth Tuition Waivers can both increase access to college and make college affordable for those who would otherwise not be able to participate in postsecondary education. Policies that remove barriers to participation are critical to closing opportunity gaps, improving long-term career outcomes for all Marylanders, and meeting the future demands of Maryland's economy.

APPENDICES

Appendix 1: Educational Attainment Methodology

Educational attainment has the following important implications for workforce outcomes. First, research suggests that employment outcomes and wages may vary by level of educational attainment[36]. Second, high school graduates enrolled in college may be employed in part-time entry-level minimum-wage positions so they can prioritize college; comparatively high school graduates that did not enroll in college may have been available to enter the workforce in full-time career-track employment. Finally, the time to degree widely varies based upon the type the postsecondary degree. Certificate's, Associate's and Bachelor's degree programs are designed to require one, two or four years of full-time study respectively. The length of each program impacts the amount of time graduates may have been in the workforce after earning their college degree. For example, Certificate graduates may enter the workforce three years earlier than Bachelor's degree graduates, while Associate's graduates may enter the workforce two years earlier than Bachelor's degree graduates.

Accordingly, separating the population of interest into groups by educational attainment helps identify wages differences that may occur when using a common point in time (five years after high school graduation) as a measure for a population who has had different amounts of time in the workforce. These distinctions in educational attainment should not be interpreted as college graduation rates as this report does not provide the starting number of students entering each educational attainment category, only the number of students who obtained each degree, are still enrolled in college or stop attending college without graduating. Reporting on time to degree and college completion rates is outside the scope of this report.

For this report, the following seven educational groups were created See **Figure 1** and **Table 1** for distributions. Education attainment definitions:

1. **High School Graduates**: High school graduates without an in-state or out-of-state college enrollment record by the end of spring term 2019.
2. **Some College**: High school graduates enrolled for at least one term between fall 2014 and fall 2018 but who are not actively enrolled in college in the spring 2019 or fall 2019 terms.
3. **Still in College**: High school graduates enrolled in college in-state or out-of-state in the spring 2019 and/or fall 2019 terms. These graduates may have earned a postsecondary degree by the end of the fall 2018 term; however, they are still actively pursuing additional postsecondary education.

[36]For example, see:

Baum, S., Ma, J. & Payea, K. (2013). Education Pays 2013: The benefits of higher education for individuals and society. College Board.

Hout, M. (2012). Social and economic returns to college education in the United States. Annual Review of Sociology. 38: 379-400.

Kane, T.J. & Rouse, C. E. (1995). Labor market returns to two-year and four-year college. The American Economic Review, 85(3): 600-614

Thomas, S. & Zhang, L. (2005). Post-baccalaureate wage growth within 4 years of graduation: The effects of college quality and college major. Research in Higher Education. 46(4): 437-459.

4. **Certificate Graduates**: High school graduates who earned a postsecondary certificate by the end of the fall term 2018 and are not enrolled in college in the spring 2019 or fall 2019 terms.
5. **Associate's Graduates:** High school graduates who earned a postsecondary associate's degree by the end of the fall term 2018 and are not enrolled in college in the spring 2019 and/or fall 2019 terms.
6. **Bachelor's Graduates:** High school graduates who earned a postsecondary bachelor's degree by the end of the fall term 2018 and are not enrolled in college in the spring 2019 and/or fall 2019 terms.
7. **Other Degree Attainment:** High school graduates who earned a post-baccalaureate degree or a graduate degree by the end of fall 2018 term and are not enrolled in college in the spring 2019 or fall 2019 terms.

Note, some high school graduates received more than one degree during the five year period. Each graduate is counted only once, based upon highest degree attained. For example, if a high school graduate earned an Associate's degree and then earned a Bachelor's degree, the high school graduate is counted in the Bachelor's category. Other high school graduates earned a degree but were still progressing toward an additional degree, therefore some high school graduates in the *Still in College* category have already earned a degree.

The 20th quarter after high school graduation aligns with the postsecondary spring term which would end in May or June of 2019; however, assignment to an educational attainment category is made as of each student's status in fall 2018 (December 2018 or quarter 18 post-high school graduation). The decision to use this term for placement into an educational attainment category was made to allow students in each category time to transition from college to workforce and thus provide a more accurate picture of wages and industry of employment after college.

Appendix 2: High School Graduates, State of Maryland, 2014, Educational Attainment, Demographic and Economic Characteristics

The table below provides the distribution of high school graduates by subsequent educational attainment five years after high school graduation. Race and ethnicity groups are not mutually exclusive. Racial groups include all ethnicities, and ethnicity groups may be of any race. Values for race and ethnicity do not total due to omitted categories. Free or Reduced Price Meals (FARMS) indicates a student's eligibility to receive low-cost or no-cost meals each school day. Students may be eligible for free or reduced-price meals through participation in certain Federal Assistance Programs or based on their family's income falling below a specified poverty threshold. The education community and this report rely on FARMS eligibility to identify economically disadvantaged students. See **Appendix 8** for more information on FARMS.

		Gender		Ethnicity	Race			Economic Status	
Education Level	Overall	Female	Male	Hispanic, Any Race	African-American/ Black Alone	Asian Alone	White Alone	FARMS	Non-FARMS
All High School Graduates	*58,136*	*29,663*	*28,473*	*5,913*	*20,182*	*3,765*	*29,031*	*18,612*	*39,524*
High School Graduates, No College	13,497	5,455	8,042	1,702	5,774	271	6,131	6,764	6,733
Some College	20,456	10,193	10,263	2,464	8,961	1,158	8,283	7,562	12,894
Still in College	11,210	6,341	4,869	969	3,115	1,073	6,058	2,647	8,563
Lower Division Degree	1,786	935	851	157	357	89	1,190	424	1,362
Bachelor's Degree or Higher	11,187	6,739	4,448	621	1,975	1,174	7,369	1,215	9,972

Note: Race is reported independent of Ethnicity therefore values do not sum to total.

Appendix 3: High School Graduates, State of Maryland, 2014, Full-Quarter Wages by Educational Attainment, Demographic, and Economic Characteristics

The table below provides the distributions of high school graduates by select characteristics and the percentage of each group with full-quarter wages five years after high school graduation. Compared to the overall distributions, *Asian Alone* high school graduates are less visible in the wage data in all educational attainment categories than other racial and ethnic groups, while *White* high school graduates tend to have higher visibility in most categories. *FARMS* are more visible in the *Some College, Still in College,* and *Bachelor's Degree or Higher* groups compared to *Non-FARMS* graduates. Finally, *Females* are typically more visible than *Males*.

	Overall		No College		Some College		Still in College		Lower Division Degree		Bachelor's Degree or Higher	
Group	Total	% Full-Quarter Wages	Total	% Full-Quarter Wages	Total	% Full-Quarter Wages	Total	% Full-Quarter Wages	Total	% Full-Quarter Wages	Total	% Full-Quarter Wages
Overall	58,136	47%	*13,497*	47%	*20,456*	51%	*11,210*	47%	*1,786*	60%	*11,187*	37%
FARMS	18,612	51%	6,764	47%	7,562	55%	2,647	52%	424	54%	1,215	44%
Non-FARMS	39,524	45%	6,733	47%	12,894	49%	8,563	46%	1,362	61%	9,972	37%
Female	29,663	49%	5,455	47%	10,193	55%	6,341	51%	935	59%	6,739	39%
Male	28,473	45%	8,042	47%	10,263	48%	4,869	43%	851	60%	4,448	34%
Hispanic, Any Race	5,913	47%	1,702	38%	2,464	53%	969	52%	157	51%	621	39%
African-American/ Black Alone	20,182	47%	5,774	45%	8,961	51%	3,115	48%	357	52%	1,975	36%
Asian Alone	3,765	35%	271	21%	1,158	40%	1,073	37%	89	45%	1,174	30%
White Alone	29,031	48%	6,131	51%	8,283	53%	6,058	48%	1,190	64%	7,369	39%

Note: Race is reported independent of ethnicity therefore values do not sum to total.

Appendix 4: High School Graduates, State of Maryland, 2014, Compared to Living Wage by Educational Attainment, Demographic, and Economic Characteristics

The table below provides the distributions of high school graduates by select characteristics and the percentage of each group with full-quarter wages that had a quarterly wage above the living wage five years after high school graduation. Generally, large shares of *African-American/Black Alone* had wages above the living wage compared to other racial and ethnic groups in the *No College* and *Some College* educational attainment groups while larger shares of *White Alone, Asian Alone,* and *Hispanic, Any Race* had wages above the living wage in the *Still in College, Lower Division* and *Bachelor's Degree or Higher* groups. *Non-FARMS* graduates had higher percentages above the living wage in most educational attainment groups compared to *FARMS* graduates. Finally, smaller shares of *Female* high school graduates had quarterly wages above the living wage than *Males* in all educational attainment categories.

	Overall		No College		Some College		Still in College		Lower Division Degree		Bachelor's Degree or Higher	
Group	Full-Quarter Wages	% >=Living Wage	Full-Quarter Wages	% >=Living Wage	Full-Quarter Wages	% >=Living Wage	Full-Quarter Wages	% >=Living Wage	Full-Quarter Wages	% >=Living Wage	Full-Quarter Wages	% >=Living Wage
Overall	*27,330*	37%	*6,298*	37%	*10,508*	28%	*5,292*	29%	*1,063*	47%	*4,169*	68%
FARMS	9,443	30%	3,166	30%	4,151	27%	1,369	26%	228	48%	529	58%
Non-FARMS	17,887	41%	3,132	44%	6,357	29%	3,923	30%	835	47%	3,640	70%
Female	14,570	33%	2,545	22%	5,612	25%	3,206	26%	555	39%	2,652	66%
Male	12,760	43%	3,753	47%	4,896	32%	2,086	34%	508	56%	1,517	72%
Hispanic, Any Race	2,783	40%	645	47%	1,313	36%	502	26%	80	54%	243	64%
African-American/ Black Alone	9,537	39%	2,608	56%	4,533	31%	1,496	26%	187	33%	713	54%
Asian Alone	1,309	40%	57	47%	463	22%	401	30%	40	45%	348	75%
White Alone	14,039	44%	3,107	47%	4,399	32%	2,930	31%	765	51%	2,838	71%

Note: Race is reported independent of Ethnicity therefore values do not sum to the total.

Appendix 5: High School Graduates, State of Maryland, 2014, Compared to Living Wage by Sector and Educational Attainment, Five Years after High School Graduation

This table presents the number of high school graduates with full-quarter employment with the same employer in quarters 19, 20 and 21 by sector and education level, and the percentage of each group that had a quarterly wage above the living wage.

Sector	All High School Graduates		No College		Some College		Still in College		Lower Division Degree		Bachelor's Degree or Higher	
	Total	% >Living Wage	Total	% >Living Wage	Total	% >Living Wage	Total	% >Living Wage	Total	% >Living Wage	Total	% >Living Wage
All High School Graduates	*19,860*	*44%*	*4,597*	*45%*	*7,409*	*34%*	*3,667*	*35%*	*815*	*52%*	*3,372*	*73%*
Goods-Producing	1,900	74%	769	77%	544	65%	229	69%	85	76%	273	90%
Trade, Transportation & Utilities	4,864	31%	1,362	39%	2,216	28%	740	19%	178	32%	368	50%
Information	230	49%	31	48%	80	46%	50	32%	11	55%	58	67%
Financial & Real Estate	893	65%	147	59%	302	56%	169	46%	30	67%	245	91%
Professional and Business Services	3,056	61%	581	47%	830	47%	576	53%	129	70%	940	85%
Education	1,290	54%	102	28%	244	25%	346	45%	33	42%	565	77%
Health Services	2,992	39%	515	32%	1,151	30%	719	36%	131	53%	476	70%
Leisure & Hospitality	3,035	20%	656	19%	1,413	21%	597	13%	112	28%	257	30%
Other Services	950	40%	283	46%	406	36%	141	26%	40	45%	80	63%
Public Administration	650	65%	151	77%	223	55%	100	50%	66	79%	110	73%

Appendix 6: High School Graduates, State of Maryland, 2014, Median Quarterly Wage and Sector by Educational Attainment, Five Years after High School Graduation

This table presents the number of high school graduates with full-quarter employment with the same employer in quarters 19, 20 and 21 and the overall median quarterly wage and an indicator to living wage.

Sector	Same Employer High School Graduates		No College			Some College			Still in College			Lower Division Degree			Bachelor's Degree or Higher		
	#	Median Quarterly Wage	#	%	Median Quarterly Wage	#	%	Median Quarterly Wage	#	%	Median Quarterly Wage	#	%	Median Quarterly Wage	#	%	Median Quarterly Wage
Goods-Producing	1,900	↑$10,120	769	17%	↑$9,864	544	7%	↑$9,101	229	6%	↑$10,419	85	10%	↑$9,933	273	8%	↑$15,074
Trade, Transportation & Utilities	4,864	$6,023	1,362	30%	$6,724	2,216	30%	$5,706	740	20%	$4,679	178	22%	$5,964	368	11%	↑$7,773
Information	230	$7,600	31	1%	$7,566	80	1%	$7,054	50	1%	$5,377	11	1%	↑$8,359	58	2%	↑$9,191
Financial & Real Estate	893	↑$9,137	147	3%	↑$8,540	302	4%	↑$8,201	169	5%	$7,256	30	4%	↑$9,154	245	7%	↑$12,829
Professional and Business Services	3,056	↑$8,934	581	13%	$7,444	830	11%	$7,419	576	16%	↑$8,298	129	16%	↑$9,216	940	28%	↑$11,835
Education	1,290	↑$8,334	102	2%	$6,079	244	3%	$5,757	346	9%	$6,897	33	4%	$6,709	565	17%	↑$12,051
Health Services	2,992	$6,881	515	11%	$6,655	1,151	16%	$6,413	719	20%	$6,433	131	16%	↑$7,993	476	14%	↑$10,191
Leisure & Hospitality	3,035	$5,114	656	14%	$5,199	1,413	19%	$5,251	597	16%	$4,427	112	14%	$5,800	257	8%	$5,720
Other Services	950	$6,665	283	6%	$7,350	406	5%	$6,428	141	4%	$5,130	40	5%	$7,076	80	2%	↑$8,993
Public Administration	650	↑$9,465	151	3%	↑$9,400	223	3%	↑$8,511	100	3%	↑$7,698	66	8%	↑$12,405	110	3%	↑$9,974

↑value is above the living wage

Appendix 7: High School Graduates, State of Maryland, 2014, Demographic and Economic Attributes by Sector and Educational Attainment, Five Years after High School Graduation

The next nine tables provide data on the sector, educational attainment, and median quarterly wages for high school graduates with full-quarter employment with the same employer by demographic and economic attributes. The first table provides data by **Gender**.

Sector	All Same-Employer High School Graduates		Overall				No College				Some College			
			Female		Male		Female		Male		Female		Male	
Same-Employer High School Graduates	n	$	n	$	n	$	n	$	n	$	n	$	n	$
	19,860	*$7,086*	*10,464*	*$6,657*	*9,396*	*$7,597*	*1,777*	*$6,235*	*2,820*	*$8,132*	*3,918*	*$6,131*	*3,491*	*$6,582*
Goods-Producing	1,900	$10,120	387	$9,226	1,513	$10,387	58	$8,497	711	$10,138	135	$8,261	409	$9,519
Trade, Transportation & Utilities	4,864	$6,023	2,098	$5,281	2,766	$6,613	445	$5,740	917	$7,383	990	$5,244	1,226	$6,234
Information	230	$7,600	99	$6,072	131	$8,359	14	$5,604	17	$9,810	32	$6,014	48	$8,287
Financial & Real Estate	893	$9,137	523	$8,726	370	$10,043	77	$8,297	70	$8,724	202	$8,183	100	$8,410
Professional and Business Services	3,056	$8,934	1,501	$8,334	1,555	$9,536	218	$6,521	363	$8,232	412	$7,250	418	$7,802
Education	1,290	$8,334	928	$9,546	362	$6,880	51	$5,394	51	$6,205	141	$5,509	103	$5,922
Health Services	2,992	$6,881	2,502	$6,934	490	$6,581	420	$6,527	95	$7,259	957	$6,443	194	$6,047
Leisure & Hospitality	3,035	$5,114	1,620	$5,036	1,415	$5,178	315	$5,060	341	$5,274	717	$5,219	696	$5,283
Other Services	950	$6,665	569	$6,139	381	$7,776	146	$6,364	137	$8,382	255	$6,100	151	$6,899
Public Administration	650	$9,465	237	$8,426	413	$10,014	33	$8,419	118	$9,804	77	$7,266	146	$9,588

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

This table is a continuation of the prior **Gender** table. This table presents sector, educational attainment, and median quarterly wage by Gender for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall				Lower Division Degree				Bachelor's or Higher			
			Female		Male		Female		Male		Female		Male	
Same-Employer High School Graduates	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**
	19,860	*$7,086*	*10,464*	*$6,657*	*9,396*	*$7,597*	*426*	*$6,822*	*389*	*$8,902*	*2,159*	*$10,610*	*1,213*	*$11,593*
Goods-Producing	1,900	$10,120	387	$9,226	1,513	$10,387	21	$9,244	64	$10,217	107	$13,923	166	$15,156
Trade, Transportation & Utilities	4,864	$6,023	2,098	$5,281	2,766	$6,613	77	$5,152	101	$7,036	209	$6,609	159	$9,336
Information	230	$7,600	99	$6,072	131	$8,359	*	*	*	*	29	$9,423	29	$8,769
Financial & Real Estate	893	$9,137	523	$8,726	370	$10,043	*	*	*	*	123	$12,107	122	$13,603
Professional and Business Services	3,056	$8,934	1,501	$8,334	1,555	$9,536	55	$8,502	74	$9,349	513	$11,080	427	$13,102
Education	1,290	$8,334	928	$9,546	362	$6,880	23	$6,430	10	$8,275	464	$12,578	101	$8,950
Health Services	2,992	$6,881	2,502	$6,934	490	$6,581	115	$7,792	16	$10,191	415	$10,712	61	$8,650
Leisure & Hospitality	3,035	$5,114	1,620	$5,036	1,415	$5,178	66	$5,769	46	$6,312	176	$5,655	81	$5,754
Other Services	950	$6,665	569	$6,139	381	$7,776	24	$6,193	16	$9,780	51	$8,900	29	$9,692
Public Administration	650	$9,465	237	$8,426	413	$10,014	24	$9,074	42	$14,632	72	$9,434	38	$10,639

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.

*indicates value is suppressed to protect unauthorized disclosure of protected information.

This table presents sector, educational attainment, and median quarterly wage by **FARMS** status for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall				No College				Some College			
			FARMS		Non-FARMS		FARMS		Non-FARMS		FARMS		Non-FARMS	
Same-Employer High School Graduates	n	$	n	$	n	$	n	$	n	$	n	$	n	$
	19,860	*$7,086*	*6,449*	*$6,682*	*13,411*	*$7,321*	*2,205*	*$6,724*	*2,392*	*$7,719*	*2,787*	*$6,473*	*4,622*	*$6,236*
Goods-Producing	1,900	$10,120	532	$9,524	1,368	$10,522	288	$9,260	481	$10,520	165	$9,462	379	$9,077
Trade, Transportation & Utilities	4,864	$6,023	1,817	$6,023	3,047	$6,020	683	$6,516	679	$6,909	828	$5,704	1,388	$5,714
Information	230	$7,600	58	$7,027	172	$7,932	15	$5,079	16	$8,061	27	$7,650	53	$6,207
Financial & Real Estate	893	$9,137	297	$8,562	596	$9,742	67	$8,499	80	$8,591	134	$8,410	168	$8,128
Professional and Business Services	3,056	$8,934	821	$7,692	2,235	$9,630	275	$6,985	306	$7,892	304	$7,426	526	$7,419
Education	1,290	$8,334	273	$6,823	1,017	$9,268	53	$6,057	49	$6,101	96	$5,224	148	$5,962
Health Services	2,992	$6,881	1,090	$6,699	1,902	$6,989	299	$6,519	216	$6,916	497	$6,654	654	$6,153
Leisure & Hospitality	3,035	$5,114	1,056	$5,333	1,979	$4,974	359	$5,082	297	$5,348	498	$5,430	915	$5,053
Other Services	950	$6,665	343	$6,764	607	$6,657	121	$6,680	162	$7,615	168	$7,079	238	$6,214
Public Administration	650	$9,465	162	$8,398	488	$9,704	45	$8,370	106	$9,894	70	$7,734	153	$9,172

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

This table is a continuation of the prior **FARMS** table. This table presents sector, educational attainment, and median quarterly wage by **FARMS** status for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall				Lower Division Degree				Bachelor's or Higher			
			FARMS		Non-FARMS		FARMS		Non-FARMS		FARMS		Non-FARMS	
Same-Employer High School Graduates	n	$	n	$	n	$	n	$	n	$	n	$	n	$
	19,860	$7,086	6,449	$6,682	13,411	$7,321	166	$8,019	649	$7,791	403	$9,493	2,969	$11,081
Goods-Producing	1,900	$10,120	532	$9,524	1,368	$10,522	15	$9,762	70	$10,038	22	$13,081	251	$15,159
Trade, Transportation & Utilities	4,864	$6,023	1,817	$6,023	3,047	$6,020	39	$5,873	139	$6,046	58	$6,141	310	$8,070
Information	230	$7,600	58	$7,027	172	$7,932	*	*	10	$7,216	*	*	55	$9,423
Financial & Real Estate	893	$9,137	297	$8,562	596	$9,742	*	*	25	$8,924	32	$12,132	213	$12,884
Professional and Business Services	3,056	$8,934	821	$7,692	2,235	$9,630	28	$9,032	101	$9,264	113	$10,250	827	$12,046
Education	1,290	$8,334	273	$6,823	1,017	$9,268	*	*	24	$7,431	58	$10,952	507	$12,115
Health Services	2,992	$6,881	1,090	$6,699	1,902	$6,989	29	$8,137	102	$7,900	63	$9,612	413	$10,331
Leisure & Hospitality	3,035	$5,114	1,056	$5,333	1,979	$4,974	23	$5,648	89	$6,141	34	$5,688	223	$5,720
Other Services	950	$6,665	343	$6,764	607	$6,657	*	*	37	$7,216	*	*	72	$9,019
Public Administration	650	$9,465	162	$8,398	488	$9,704	14	$12,096	52	$12,405	12	$10,008	98	$9,955

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

This table presents sector, educational attainment, and median quarterly wage by **Race** for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall						No College					
			African-American / Black Alone		Asian Alone		White Alone		African-American / Black Alone		Asian Alone		White Alone	
Same-Employer High School Graduates	n	$	n	$	n	$	n	$	n	$	n	$	n	$
	19,860	*$7,086*	*6,267*	*$6,315*	*1,015*	*$6,878*	*10,741*	*$7,690*	*1,705*	*$6,363*	*49*	*$7,684*	*2,439*	*$7,976*
Goods-Producing	1,900	$10,120	288	$8,642	61	$15,962	1,389	$10,378	118	$8,808	*	$8,836	584	$10,204
Trade, Transportation & Utilities	4,864	$6,023	1,865	$5,649	235	$4,725	2,310	$6,438	545	$6,259	18	$6,917	685	$7,140
Information	230	$7,600	75	$6,613	*	*	128	$7,600	18	$5,846	**	**	10	$11,457
Financial & Real Estate	893	$9,137	280	$8,646	53	$9,860	455	$9,501	44	$7,398	*	*	79	$8,499
Professional and Business Services	3,056	$8,934	878	$7,380	225	$10,248	1,682	$9,828	257	$6,634	*	*	278	$8,325
Education	1,290	$8,334	308	$6,468	75	$7,350	797	$10,404	56	$6,048	**	**	38	$6,202
Health Services	2,992	$6,881	1,090	$6,614	165	$7,505	1,410	$7,043	251	$6,526	*	*	178	$6,489
Leisure & Hospitality	3,035	$5,114	984	$4,978	151	$4,893	1,632	$5,237	281	$4,939	10	$7,785	311	$5,304
Other Services	950	$6,665	302	$6,457	29	$5,816	539	$6,812	90	$6,800	*	*	176	$7,789
Public Administration	650	$9,465	197	$7,932	*	*	399	$10,037	45	$8,375	*	*	100	$9,570

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.
** no records meet criteria.

This table is a continuation of the prior **Race** table. This table presents sector, educational attainment, and median quarterly wage by **Race** for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall						Some College					
			African-American / Black Alone		Asian Alone		White Alone		African-American / Black Alone		Asian Alone		White Alone	
Same-Employer High School Graduates	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**
	19,860	*$7,086*	*6,267*	*$6,315*	*1,015*	*$6,878*	*10,741*	*$7,690*	*2,925*	*$6,029*	*354*	*$5,354*	*3,307*	*$6,594*
Goods-Producing	1,900	$10,120	288	$8,642	61	$15,962	1,389	$10,378	117	$7,946	10	$7,741	352	$9,516
Trade, Transportation & Utilities	4,864	$6,023	1,865	$5,649	235	$4,725	2,310	$6,438	935	$5,535	128	$4,734	913	$6,058
Information	230	$7,600	75	$6,613	*	*	128	$7,600	37	$8,269	*	*	31	$6,086
Financial & Real Estate	893	$9,137	280	$8,646	53	$9,860	455	$9,501	133	$8,355	13	$7,268	106	$8,097
Professional and Business Services	3,056	$8,934	878	$7,380	225	$10,248	1,682	$9,828	344	$7,071	36	$6,620	355	$7,860
Education	1,290	$8,334	308	$6,468	75	$7,350	797	$10,404	103	$5,381	*	*	99	$6,282
Health Services	2,992	$6,881	1,090	$6,614	165	$7,505	1,410	$7,043	519	$6,508	42	$5,913	456	$6,249
Leisure & Hospitality	3,035	$5,114	984	$4,978	151	$4,893	1,632	$5,237	499	$5,010	95	$5,122	689	$5,492
Other Services	950	$6,665	302	$6,457	29	$5,816	539	$6,812	152	$6,356	15	$5,195	193	$6,300
Public Administration	650	$9,465	197	$7,932	*	*	399	$10,037	86	$6,336	*	*	113	$10,052

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

This table is a continuation of the prior **Race** table. This table presents sector, educational attainment, and median quarterly wage by **Race** for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall						Lower Division Degree					
			African-American / Black Alone		Asian Alone		White Alone		African-American / Black Alone		Asian Alone		White Alone	
Same-Employer High School Graduates	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**
	19,860	*$7,086*	*6,267*	*$6,315*	*1,015*	*$6,878*	*10,741*	*$7,690*	*131*	*$6,498*	*26*	*$8,226*	*601*	*$8,120*
Goods-Producing	1,900	$10,120	288	$8,642	61	$15,962	1,389	$10,378	11	$8,654	*	*	68	$10,072
Trade, Transportation & Utilities	4,864	$6,023	1,865	$5,649	235	$4,725	2,310	$6,438	37	$4,248	10	$6,689	123	$6,785
Information	230	$7,600	75	$6,613	*	*	128	$7,600	*	*	**	**	10	$5,784
Financial & Real Estate	893	$9,137	280	$8,646	53	$9,860	455	$9,501	*	*	*	*	16	$10,509
Professional and Business Services	3,056	$8,934	878	$7,380	225	$10,248	1,682	$9,828	15	$8,038	*	*	99	$9,200
Education	1,290	$8,334	308	$6,468	75	$7,350	797	$10,404	*	*	*	*	19	$7,546
Health Services	2,992	$6,881	1,090	$6,614	165	$7,505	1,410	$7,043	15	$6,977	*	*	103	$7,908
Leisure & Hospitality	3,035	$5,114	984	$4,978	151	$4,893	1,632	$5,237	20	$5,957	*	*	80	$6,372
Other Services	950	$6,665	302	$6,457	29	$5,816	539	$6,812	*	*	**	**	33	$6,755
Public Administration	650	$9,465	197	$7,932	*	*	399	$10,037	10	$5,331	*	*	50	$13,961

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.
** no records meet criteria.

This table is a continuation of the prior **Race** table. This table presents sector, educational attainment, and median quarterly wage by **Race** for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall						Bachelor's or Higher					
			African-American / Black Alone		Asian Alone		White Alone		African-American / Black Alone		Asian Alone		White Alone	
Same-Employer High School Graduates	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**
	19,860	*$7,086*	*6,267*	*$6,315*	*1,015*	*$6,878*	*10,741*	*$7,690*	*544*	*$9,081*	*300*	*$12,481*	*2,307*	*$11,250*
Goods-Producing	1,900	$10,120	288	$8,642	61	$15,962	1,389	$10,378	19	$16,282	29	$18,162	210	$14,421
Trade, Transportation & Utilities	4,864	$6,023	1,865	$5,649	235	$4,725	2,310	$6,438	98	$5,856	20	$9,335	228	$8,893
Information	230	$7,600	75	$6,613	*	*	128	$7,600	*	*	*	*	43	$9,741
Financial & Real Estate	893	$9,137	280	$8,646	53	$9,860	455	$9,501	47	$12,768	19	$14,178	164	$12,702
Professional and Business Services	3,056	$8,934	878	$7,380	225	$10,248	1,682	$9,828	130	$10,300	116	$12,662	622	$12,285
Education	1,290	$8,334	308	$6,468	75	$7,350	797	$10,404	65	$9,289	38	$9,280	429	$12,505
Health Services	2,992	$6,881	1,090	$6,614	165	$7,505	1,410	$7,043	89	$8,175	55	$13,208	300	$10,819
Leisure & Hospitality	3,035	$5,114	984	$4,978	151	$4,893	1,632	$5,237	50	$4,887	10	$6,441	179	$5,681
Other Services	950	$6,665	302	$6,457	29	$5,816	539	$6,812	*	*	*	*	59	$8,084
Public Administration	650	$9,465	197	$7,932	*	*	399	$10,037	29	$10,060	*	*	73	$9,916

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

This table presents sector, educational attainment, and median quarterly wage by **Ethnicity** for high school graduates with full-quarter employment with the same employer.

Sector	All Same-Employer High School Graduates		Overall Hispanic, Any Race		No College Hispanic, Any Race		Some College Hispanic, Any Race		Lower Division Degree Hispanic, Any Race		Bachelor's or Higher Hispanic, Any Race	
Same-Employer High School Graduates	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**	**n**	**$**
	19,860	*$7,086*	*2,124*	*$7,277*	*508*	*$7,826*	*1,007*	*$7,020*	*65*	*$8,244*	*188*	*$10,160*
Goods-Producing	1,900	$10,120	222	$10,031	89	$9,981	92	$9,304	*	*	14	$14,589
Trade, Transportation & Utilities	4,864	$6,023	556	$6,469	135	$7,699	296	$6,354	10	$4,998	23	$7,609
Information	230	$7,600	16	$8,475	*	*	10	$8,627	*	*	*	*
Financial & Real Estate	893	$9,137	130	$9,413	28	$9,338	67	$8,938	*	*	16	$12,910
Professional and Business Services	3,056	$8,934	286	$8,393	69	$8,772	106	$7,775	15	$9,084	47	$11,438
Education	1,290	$8,334	109	$6,568	*	*	42	$6,126	*	*	31	$10,780
Health Services	2,992	$6,881	376	$6,903	95	$6,976	169	$6,952	10	$10,802	32	$9,419
Leisure & Hospitality	3,035	$5,114	300	$5,599	60	$6,524	158	$5,519	10	$4,437	15	$5,062
Other Services	950	$6,665	82	$7,211	14	$6,330	47	$7,183	*	*	*	*
Public Administration	650	$9,465	47	$7,459	*	*	20	$5,348	*	*	*	*

Note: Numbers reported do not sum to total as Still Enrolled is omitted from analysis.
*indicates value is suppressed to protect unauthorized disclosure of protected information.

Appendix 8: Free or Reduced-Price Meals Eligibility

This report uses student-level data on free or reduced-price meals (FARMS) eligibility. FARMS is part of the National School Lunch Program (NSLP), administered by the United States Department of Agriculture (USDA). Students may be eligible for free or reduced-price meals through participation in certain need-based Federal Assistance Programs or if their family's income falls below a specified poverty threshold. Eligibility status may be determined through annual household applications or through direct certification. Students living in households with incomes at or below 130% of the federal poverty level are eligible for free meals, while students living in households with incomes between 130% and 185% of the federal poverty level are eligible for reduced-priced meals. Some students are directly certified based on participation in certain programs rather than exclusively on financial need (e.g., migrant education program, education of homeless children and youth, foster care).

FARMS does not measure socioeconomic status. Socioeconomic status is a complex measure that includes social status or prestige, occupation, educational attainment, income, and other factors. Many researchers use FARMS eligibility as a proxy for poverty. Using FARMS participation as a proxy for poverty may not correctly identify students experiencing poverty and treats all students as experiencing the same level of poverty. Using FARMS participation as a proxy for student poverty has limitations:

- The USDA has determined the number of children applying for FARMS declines in middle and high school due to the stigma associated with FARMS.
- Individual schools with 40% or more FARMS eligible students can elect to participate in the FARMS community eligibility provision. This election may report all students as FARMS even though some do not meet the poverty threshold.
- Student eligibility for FARMS can also change over time. Identifying FARMS participation in a single year may omit students who participated in FARMS in previous years.
- Not all students that participate in FARMS have identical levels of poverty. FARMS eligibility ranges from 130% to 185% of the federal poverty level.

A student's FARMS participation may be evaluated in a single year or based upon duration of time a student participates in FARMS. The method selected for determining FARMS participation can produce quite different results. This report evaluates FARMS status during 12th grade. As such, it likely underrepresents the number of students experiencing poverty in 2014 (the year of high school graduation), students living in poverty for longer durations, and does not include student cycling in and out of poverty throughout their elementary and secondary education.

Sources on FARMS:

- U.S. Department of Agriculture. Food and Nutrition Service. *Child nutrition programs: Income eligibility guidelines (July 1, 2019 - June 30, 2020)* https://www.fns.usda.gov/cnp/fr-032019
- Nation Center for Education Statistics. *Free or reduced price lunch: A proxy for poverty?* https://nces.ed.gov/blogs/nces/post/free-or-reduced-price-lunch-a-proxy-for-poverty
- Harwell, M., & LeBeau, B., *Student eligibility for a free lunch as an SES measure in education research*. Educational Researcher, 39(2), 120-131.