## December 2023

## Career Preparation Expansion Act Report

Annual Report to the Governor and General Assembly on the Workforce Outcomes of Maryland Public High School Graduates

# Wes Moore 

Governor

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## REPORT REQUIREMENTS

This Report is submitted in fulfillment of the requirement in The Career Preparation Expansion Act (CPEA), Chapter 695 of 2018 (see Education Article § 21-206, 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 of employment.

See the Technical Documentation in Appendix 2 for information on the MLDS Center, the GWDB, and the data and methods used for this report.

## REPORT POPULATION

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 2017 and are between the ages of 16 and 24 at the time of graduation ${ }^{1}$. This is the latest year that high school graduates had five years of available wage data post-high school graduation.

Table A. Maryland Public High School Graduates, 2017, Distribution by Demographic and Economic Characteristics

| 2017 High School Graduates |  |  |  |
| :---: | :---: | :---: | :---: |
| All High School Graduates |  | 57,170 |  |
|  |  | \# | \% |
| Gender | Female | 28,708 | 50\% |
|  | Male | 28,462 | 50\% |
| Ethnicity | Hispanic, Any Race | 7,010 | 12\% |
| Race | African-American/ Black Alone | 20,125 | 35\% |
|  | Asian Alone | 3,926 | 7\% |
|  | White Alone | 27,895 | 49\% |
| Economic Status ${ }^{2}$ | FARMS | 17,742 | 31\% |
|  | Non-FARMS | 39,428 | 69\% |

Note: Race is reported independent of ethnicity and some races are omitted to protect small populations therefore values do not equal the total population.

Almost 60,000 students graduated from Maryland public high schools in 2017 under the high school graduate definition used for this report. See Table A. High school graduates were disaggregated into educational attainment groups. ${ }^{3}$ See Table B. Definitions used to determine assignment to demographic, economic (students receiving free and reduced price meals or FARMS) and educational groups can be found in the Technical Documentation in Appendix 2 at the end of this report.

Table B. Maryland Public High School Graduates, 2017, Distribution by Educational Attainment, Five Years after Graduation

| Educational Attainment <br> Level |  |  |
| :--- | :---: | :---: |
| All High School Graduates | 2017 High School <br> Graduates |  |
|  | $\#$ | $\%$ |
| No College | 14,679 | $26 \%$ |
| Some College | 18,455 | $32 \%$ |
| Still in College | 10,920 | $19 \%$ |
| Lower Division Degree | 1,771 | $3 \%$ |
| Certificate | 190 | $<1 \%$ |
| Associate's | 1,581 | $3 \%$ |
| Bachelor's Degree or Higher | 11,345 | $20 \%$ |
| Bachelor's | 11,260 | $20 \%$ |
| Other Degree | 85 | $<1 \%$ |

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## Question 1. Wages Earned Five Years after High School Graduation

## Wage Visibility by Educational Attainment

There were 22,797 high school graduates, or $40 \%$ of all graduates, who had wages for three consecutive fiscal quarters ("full-quarter wages" ${ }^{4}$ ) five years after high school graduation (fiscal quarter 2 of $2022^{5}$ ) and were therefore included in the wage analysis. See Table 1.

Conversely, 60\% 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 ${ }^{6}$, or were unemployed.

Wage visibility, or the rate at which high school graduates meet the definition of full-quarter wages, was around $45 \%$ for cohorts where the 5-year wage evaluation point pre-dated COVID19. See Table 1. This rate dropped to $17 \%$ for the 2015 cohort (2020 wages), likely due to the COVID-19 economic shutdown in Maryland in 2020.

Table 1. Maryland Public High School Graduates, 2012 to 2017, Wage Visibility, Five Years after High School Graduation

| Educational <br> Attainment | Total | Full-Quarter Wages |  |
| :---: | :---: | :---: | :---: |
|  |  | \# | \% |
| 2012 (2017 wages) | 59,510 | 27,535 | 46\% |
| 2013 (2018 wages) | 59,560 | 27,822 | 47\% |
| 2014 (2019 wages) | 58,136 | 27,330 | 47\% |
| 2015 (2020 wages) | 57,509 | 9,706 | 17\% |
| 2016 (2021 wages) | 57,502 | 23,179 | 40\% |
| 2017 (2022 wages) | 57,170 | 22,797 | 40\% |

The wage visibility for the 2016 cohort (2021 wages) rebounded to $40 \%$. The focus of this year's report, the 2017 cohort (2022 wages), has a wage visibility that is the same as the prior year cohort, but still remains below the wage visibility rates for pre-COVID-19 reporting periods.

Wage visibility by subsequent educational attainment for the 2017 cohort varied, ranging from a high of 50\% for those with Lower Division Degrees to a low of 32\% for those with a Bachelor's Degree or Higher. See Table 2.

Table 2. Maryland Public High School Graduates, 2017, Wage Visibility, Five Years after High School Graduation, Fiscal Quarter 2 of 2022

|   <br> Educational  <br> Attainment  | Q2 2022 Full- <br> Quarter Wages |  |  |
| ---: | :---: | :---: | :---: |
|  |  | 22,797 | $40 \%$ |
| No College | 14,679 | 5,914 | $40 \%$ |
| Some College | 18,455 | 8,039 | $44 \%$ |
| Still in College | 10,920 | 4,302 | $39 \%$ |
| Lower Division <br> Degree | 1,771 | 885 | $50 \%$ |
| Bachelor's | 11,345 | 3,657 | $32 \%$ |
| Degree or Higher |  |  |  |

These wage variation patterns are similar to last year's cohort and cohorts with wages that predate COVID-19. Wage visibility consistently ranges from the mid-30\% for those who earned a Bachelor's degree to close to 60\% for those who earned an Associate's degree ${ }^{7}$. This pattern does not suggest that there are no jobs in the Maryland economy for those with a

Bachelor's Degrees or Higher. Rather it reflects that most high school graduates in the Bachelor's Degrees or Higher group have not yet had sufficient time since degree attainment to accrue nine consecutive months of postdegree employment. High school graduates in the Bachelor's Degrees or Higher group spent
most of the five-year period after high school completing their four-year Bachelor's degree. Comparatively, all other groups were available to pursue career-track employment for at least the last two years of the five year period following high school graduation.

## Median Quarterly Wages by Educational Attainment

Overall, the median quarterly wage for all high school graduates with full-quarter wages was $\$ 7,500$ in the $20^{\text {th }}$ quarter - fiscal quarter 2 of 2022. This was approximately $\$ 2,500$ below the living wage ${ }^{8}$ in Maryland and $\$ 7,792$ below the ACS median earnings for all workers in Maryland. ${ }^{9}$ This result was not uniform across all educational attainment groups.

High school graduates with some college, and those still in college had a median quarterly wage that fell approximately $\$ 3,500$ below the living wage. Those with a college degree were either just under or just over the living wage.

## See Chart 1.

Chart 1. Maryland Public High School Graduates, 2017, Median Quarterly Wages by Educational Attainment Compared to Wage Indicators, Five Years after High School Graduation, Fiscal Quarter 2 of 2022


The No College group, which presumably went directly into the workforce, had a higher median quarterly wage than that of the Some College and Still in College groups. This is likely because high school graduates in this group had five years to incrementally build higher wages while progressing through career-track employment.

The fact that students in the Still in College group had the lowest median quarterly wage is likely the result of working in a part-time capacity to prioritize pursuing a college 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.

The Some College group, who had some college but did not earn a degree, had a median quarterly wage below the living wage and $\$ 900$ below that for high school graduates who did not continue on to college. In fact, the median quarterly wage for those with Some College is only $\$ 600$ more than those Still in College. This lower wage may reflect two concepts. First, as compared to the No College high school graduates, the Some College high school graduates delayed entry into career track employment and are just now receiving the entry level wages their No College peers received five years prior. Second, the Some College high school graduates intermittently pursued postsecondary education, splitting their time and focus between college and the workforce, rather than concentrating on either earning a degree or building career-track employment.

High school graduates who completed a Bachelor's Degree or Higher had a median quarterly wage about $\$ 800$ above the living wage. This higher wage is present even though this group of high school graduates had only
been in the workforce for approximately six to nine months since completing their college degrees. As such, this wage represents entrylevel earnings rather than five years of progressively building wages.

Those with an Associate's degree or postsecondary Certificate (Lower Division Degree) had a median quarterly wage about \$1,300 above high school graduates with No College but were still $\$ 1,200$ below the living wage. And, at the point of wage observation, Lower Division Degree graduates may have been in the workforce post-college graduation for only two or three years, making this wage an early career wage rather than one that results from five years of continuous employment like those with No College.

While these patterns are similar to last year, one notable pattern, relative to last year, is that the gap between the median quarterly wage and the living wage closed slightly for those in the Lower Division Degree group while the surplus between the median quarterly wage and the living wage for those in the Bachelor's Degree or Higher group decreased. See Chart 2.

Chart 2. Maryland Public High School Graduates, 2016 and 2017, Ratio of Living Wage to Median Quarterly Wage, Five Years after High School Graduation, Fiscal Quarter 2 of 2021 and 2022


The share of the living wage covered by the median quarterly wage for those with a Lower Division Degree was up two percentage points for the 2017 cohort compared to the 2016 cohort. Conversely, the surplus of the median quarterly wage beyond the living wage declined five percentage points for those with a Bachelor's Degree or Higher.

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. ${ }^{10}$ The results for both groups align to research ${ }^{11}$ on the financial returns to education.

## Variation to Living Wage 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 had wages above the living wage. Identifying the number of high school graduates with quarterly wages above the living wage
helps to 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. See Table 3.

Table 3. Maryland Public High School Graduates, 2017, Wage Visibility and Median Quarterly Wages, Five Years after High School Graduation, Fiscal Quarter 2 of 2022

| Educational Attainment | 2017 High School Graduates |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Full-Quarter Wages Q2 2022 |  |  | Variation to Living Wage $(\$ 10,183)$ | Above Living Wage |  |
|  |  | \# | \% | Median Quarterly Wage |  | \# | \% |
| All High School Graduates | 57,170 | 22,797 | 40\% | \$7,500 | \$ 2,683 ) $\downarrow$ | 6,561 | 29\% |
| No College | 14,679 | 5,914 | 40\% | \$7,646 | \$ 2,537$) \downarrow$ | 1,589 | 27\% |
| Some College | 18,455 | 8,039 | 44\% | \$6,762 | \$(3,421) $\downarrow$ | 1,591 | 20\% |
| Still in College | 10,920 | 4,302 | 39\% | \$6,134 | \$(4,049) $\downarrow$ | 1,005 | 23\% |
| Lower Division Degree | 1,771 | 885 | 50\% | \$8,960 | \$(1,223) $\downarrow$ | 360 | 41\% |
| Bachelor's Degree or Higher | 11,345 | 3,657 | 32\% | \$10,933 | \$750 个 | 2,016 | 55\% |

$\uparrow$ value is above the living wage, $\downarrow$ value is below the living wage $(\$ 10,183)$.

From this perspective, overall, 29\% of high school graduates with full-quarter wages had a quarterly wage above the living wage. Conversely, $71 \%$ of high school graduates did not have sufficient wages to meet the basic cost of living in Maryland, despite being engaged in the labor market for nine consecutive months.

The rate of high school graduates with wages above the living wage was lowest for those with Some College where only $20 \%$ of high school graduates in this group, despite having some level of additional postsecondary education, had wages above the living wage. This low rate may again confirm the split focus of this group,
trying to both work and go to college without being able to focus exclusively on either pursuit.

The number of high school graduates with No College with wages above the living wage was $27 \%$. This rate is slightly higher than the rate for those with Some College; however, unlike those with Some College those with No College were available to fully engage in the labor market for the entire five year period and yet over two-thirds were unable to realize wages that progress to meet the basic costs of living in Maryland. This point is particularly important when one considers that the No College and Some College graduates make up approximately $61 \%$ of high school graduates with full-quarter wages ( 13,953 of the 22,797 with full-quarter wages), yet collectively only $23 \%$ of this combined group have a quarterly wage sufficient to meet the basic cost of living in Maryland. This pattern has been consistent across all years of this report. ${ }^{12}$

By comparison, 55\% of those with Bachelor's Degree or Higher and $41 \%$ of those with a Lower Division Degree had wages above the living wage. While these patterns are similar to prior
reporting years, one notable pattern, relative to last year, is the share of Lower Division Degree high school graduates with quarterly wages above the living wage increased four percentage points, while the percentage of high school graduates with wages above the living wage in the Bachelor's Degree of Higher group decreased by two percentage points. See Chart
4.

Chart 4. Maryland Public High School Graduates, 2016 and 2017, Percentage with Quarterly Wages Above the Living Wage, Five Years after High School Graduation, Fiscal Quarter 2 of 2021 and 2022


## Question 2. Hours Worked Per Week

The MLDS Center does not contain data on hours worked therefore this section of the reporting requirement cannot be fulfilled. This section is left intentionally blank.

## Question 3. High School Graduates and Labor Sector

There were 16,086 high school graduates, or $28 \%$ of all high school graduates, who had wages with the same employer ${ }^{13}$ for three consecutive fiscal quarters five years after high school graduation that can be analyzed for wages by labor sector. See Table 4.

Or considered another way, this means that $71 \%$ of 22,797 high school graduates with fullquarter wages (wages for three fiscal quarters) remained with the same-employer for all three fiscal quarters; 29\% of high school graduates with full-quarter wages changed employers at
least once during this period and are therefore removed from analysis in this section.

Table 4. Maryland Public High School Graduates, 2017, Full-Quarter and Same-Employer Wages, Five Years after High School Graduation, Fiscal Quarter 2 of 2022

| 2017 High School Graduates | Total | $\%$ |
| :--- | :---: | :---: |
| All High School Graduates | 57,170 |  |
| High School Graduates with <br> Full-Quarter Wages | 22,797 | $40 \%$ |
| High School Graduates with <br> Same-Employer Wages | 16,086 | $28 \%$ |

## Labor Sector and Median Quarterly Wages by Educational Attainment

Five years after high school graduation, the labor sector ${ }^{14}$ with the largest share of high school graduates with same-employer wages was Trade, Transportation, \& Utilities (28\%). Professional \& Business Services and Health Care \& Social Assistance were the next two largest sectors with $18 \%$ and $14 \%$ respectively. See Chart 5.

In 2022, collectively, these three sectors employed over 1.3 million Marylanders (around half of all wage earners) through more than 94,000 businesses and paid $\$ 22$ billion in wages (half of all wages paid). ${ }^{15}$ These three sectors represented $\$ 124$ billion of the $\$ 382$ billion private sector gross domestic product in $2022^{16}$ and included industries important to Maryland's infrastructure, business administration, and health, including freight and air transportation, retail trades, power
distribution, accounting, law, nursing, and home health care.

Chart 5. Maryland Public High School Graduates, 2017, Same-Employer Wages, Sector of Wages, Five Years after Graduation, Fiscal Quarter 2 of 2022


High school graduates with same-employer wages had median quarterly wages at or above the living wage in four of the ten labor sectors. Two additional labor sectors had median quarterly wage $\$ 1,000$ below the living wage See Chart 6 and Table 4. These six sectors account for $41 \%$ of all high school graduates with same-employer wages. The remaining $59 \%$ were in labor sectors with median
quarterly wages $\$ 2,000$ to $\$ 4,000$ below the living wage.

The largest labor sector, Trade, Transportation, \& Utilities, with $28 \%$ of all high school graduates with same-employer wages, had a median quarterly wage $\$ 2,500$ below the living wage. Or considered another way, high school graduates in this sector have a $\$ 10,000$ annual shortfall between the living wage and earnings.

Chart 6. Maryland Public High School Graduates, 2017, with Same-Employer Wages, Sector of Employment and Median Quarterly Wages, Five Years after High School Graduation, Fiscal Quarter 2 of 2022


Equally important to the median wage, is the percentage of high school graduates within each sector with wages above the living wage. See Table 5.

Four of the ten sectors not only had median quarterly wages above the living wage, but the majority of the high school graduates with same-employer wages in those sectors had
wages above the living wage. This includes one sector, Goods-Producing, where 64\% of graduates had wages above the living wage.

In the remaining six sectors, it is the minority of high school graduates who had wages above the living wage. This rate is as low as $17 \%$ in Leisure \& Hospitality.

Table 5. Maryland Public High School Graduates, 2017, Same-Employer Wages and Median Quarterly Wages, Five Years after High School Graduation, Fiscal Quarter 2 of 2022

| 2017 High School Graduates |  |  |  |  |  |  |  |  |  |
| ---: | :---: | ---: | ---: | :--- | :---: | :---: | :---: | :---: | :---: |
| Sector |  |  | Median <br> Quarterly Wage | \% Above <br> Living Wage |  |  |  |  |  |
| Goods-Producing | 1,628 | $10 \%$ | $\$ 11,638$ | $\uparrow$ | $64 \%$ |  |  |  |  |
| Trade, Transportation, \& Utilities | 4,429 | $28 \%$ | $\$ 7,641$ | $\downarrow$ | $25 \%$ |  |  |  |  |
| Information | 172 | $1 \%$ | $\$ 8,945$ | $\downarrow$ | $40 \%$ |  |  |  |  |
| Financial \& Real Estate | 675 | $4 \%$ | $\$ 11,215$ | $\uparrow$ | $61 \%$ |  |  |  |  |
| Professional \& Business Services | 2,848 | $18 \%$ | $\$ 10,469$ | $\uparrow$ | $52 \%$ |  |  |  |  |
| Educational Services | 720 | $4 \%$ | $\$ 9,129$ | $\downarrow$ | $40 \%$ |  |  |  |  |
| Health Care \& Social Assistance | 2,288 | $14 \%$ | $\$ 7,942$ | $\downarrow$ | $25 \%$ |  |  |  |  |
| Leisure \& Hospitality | 2,089 | $13 \%$ | $\$ 6,280$ | $\downarrow$ | $17 \%$ |  |  |  |  |
| Other Services | 687 | $4 \%$ | $\$ 8,077$ | $\downarrow$ | $31 \%$ |  |  |  |  |
| Public Administration | 550 | $3 \%$ | $\$ 10,550$ | $\uparrow$ | $54 \%$ |  |  |  |  |
| Total | 16,086 |  |  |  |  |  | $\$ 8,567$ | $\downarrow$ | $37 \%$ |

$\uparrow$ value is above living wage, $\downarrow$ value is below living wage $(\$ 10,183)$.

The overall median quarterly wages patterns change when expanding the analysis to include subsequent educational attainment. See Chart 7. For example, Health Care \& Social Assistance, the sector with the third largest share of sameemployer high school graduates, had an overall median quarterly wage below the living wage. This pattern held for those with No College, Some College or Still in College; however, the median quarterly wage was at or above the living wage for those with a college degree.

This pattern was similar for the Trade, Transportation, \& Utilities sector. This sector has the largest share of same-employer high school graduates and an overall median quarterly wage below the living wage. However, those with a Bachelor's Degree or Higher have a median quarterly wage that is only $\$ 600$ below the living wage, while those in other educational attainment groups have
median quarterly wages that are $\$ 2,000$ to \$3,000 below the living wage.

Professional \& Business Services, the sector with the second largest share of same-employer high school graduates, had an overall median quarterly wage above the living wage; however, when analyzed by subsequent educational attainment, the results show the higher median quarterly wage only applies to those with a college degree.

Finally, Leisure \& Hospitality, the sector with the third largest share of same-employer high school graduates, had little variation in median quarterly wages by educational attainment. The wage gap between those with No College and those with a Bachelor's Degree or Higher was only $\$ 1,000$. And the median quarterly wage for all educational attainment groups in this sector was $\$ 3,000$ to $\$ 5,000$ (or $\$ 12,000$ to $\$ 20,000$ annually) below the living wage.

Chart 7. Maryland Public High School Graduates, 2017, Sector of Employment and Median Quarterly Wages by Educational Attainment, Five Years after High School Graduation, Fiscal Quarter 2 of 2022


Table 6．Maryland Public High School Graduates，2017，Same－Employer Wages and Median Quarterly Wages， Five Years after High School Graduation，Fiscal Quarter 2 of 2022

| Sector | All High School Graduates | $\begin{gathered} \text { No } \\ \text { College } \end{gathered}$ | Some <br> College | Still in College | Lower Division Degree | Bachelor＇s Degree or Higher |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Goods－Producing | 个\＄11，638 | 个\＄11，626 | $\uparrow$ \＄10，744 | 个\＄11，249 | 个\＄10，725 | 个\＄15，322 |
| Trade，Transportation，\＆Utilities | \＄7，641 | \＄8，132 | \＄7，193 | \＄5，815 | \＄8，133 | \＄9，608 |
| Information | \＄8，945 | \＄10，078 | \＄8，397 | \＄6，181 | \＄8，659 | 个\＄11，222 |
| Financial \＆Real Estate | 个\＄11，215 | 个\＄10，227 | \＄9，581 | 个\＄10，461 | 个\＄11，102 | 个\＄14，678 |
| Professional \＆Business Services | 个\＄10，469 | \＄8，851 | \＄8，721 | \＄10，080 | 个\＄11，671 | 个\＄13，918 |
| Educational Services | \＄9，129 | \＄7，719 | \＄6，680 | \＄8，423 | \＄8，631 | 个\＄11，674 |
| Health Care \＆Social Assistance | \＄7，942 | \＄7，660 | \＄7，669 | \＄7，349 | 个\＄10，586 | \＄9，870 |
| Leisure \＆Hospitality | \＄6，280 | \＄6，641 | \＄6，173 | \＄5，101 | \＄6，760 | \＄7，756 |
| Other Services | \＄8，077 | \＄8，850 | \＄7，264 | \＄6，257 | \＄9，036 | 个\＄10，822 |
| Public Administration | 个\＄10，550 | 个\＄10，719 | \＄9，406 | \＄8，558 | 个\＄15，746 | 个\＄10，440 |
| Total | \＄8，567 | \＄8，627 | \＄7，794 | \＄7，380 | \＄9，761 | 个\＄12，083 |

个value is above living wage $(\$ 10,183)$ ．

Overall，those with a college degree had higher wages in all sectors and had more sectors with wages at or above the living wage．See Table 6. For example，for the Bachelor＇s Degree or Higher group，seven of the ten sectors had median quarterly wages above the living wage and two were within $\$ 600$ of the living wage． Median quarterly wages fell well below the living wage for only one sector for this group： \＄7，756 in Leisure \＆Hospitality．

Those with No College had three labor sectors with median quarterly wages above the living wage and another three sectors within a thousand dollars of the living wage．

One interesting pattern is for those Still in College．High school graduates in this group are still engaged in postsecondary education and would be presumed to be working at a reduced capacity to prioritize education and yet they fared better in several labor sectors than those
who would be expected to be engaged in the labor market full－time（No College and Some College）．It is possible that this reflects high school graduates who have already attained a degree（either an Associate＇s or Bachelor＇s）and are continuing to pursue an additional credential while working．

When considered from the perspective of the labor sector，two sectors，Trade， Transportation，\＆Utilities with $28 \%$ of all same－ employer high school graduates and Leisure \＆ Hospitality with $13 \%$ of all same－employer high school graduates，did not have a median quarterly wage above the living wage overall or for any educational attainment group．These two sectors account for $41 \%$ of all same－ employer high school graduates．

See Appendix 1 for additional labor sector and educational attainment data tables by race， ethnicity，gender，and economic status．

The analysis in this report, like prior reports, demonstrates that outcomes, five years after high school graduation, vary greatly by educational attainment and labor sector. Wages are higher for high school graduates who finish college than those who 1) do not pursue postsecondary education, 2 ) are still in college, or 3) 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. ${ }^{17}$

Applied to this report, this means that as many as 30,000 high school graduates from the 2017 cohort or half of the graduating class (No College + Some College) included in this report may be more likely to experience lower wages for at least early periods of their career, something that can have long term implications for lifetime earnings and career growth.

The No College group, the only group with five full years to pursue career track employment and experience wage progressions, had a median quarterly wage that was $\$ 1,300$ lower than those with a Lower Division Degrees. It is possible that some high school graduates with No College 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. While that gap between No College and Lower Division Degree may seem minor, when annualized, the $\$ 5,200$ gap is the difference between the annual cost of food $(\$ 3,926)$ or medical expenses $(\$ 3,157)$ in Maryland. ${ }^{18}$

Determining the percentage of each educational attainment group with wages above the living wage also identified patterns that were not apparent when comparing
median quarterly wages alone. When considered from this perspective, $41 \%$ of those with a Lower Division Degree had wages above the living wage, which is fourteen percentage points higher than those with No College. Further, other research completed by the MLDS Center on wage outcomes for Maryland community college Associate's degree graduates suggests this group will not have wages below the living wage for long, noting that the median quarterly wages for Associate's degree graduates, five years after college graduation are $\$ 10,967$ or close to $\$ 40,000$ per year. ${ }^{19}$

High school graduates with Some College had a lower median quarterly wage than those 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. And, only $20 \%$ of this group had wages above the living wage. Comparatively, larger shares of those with No College and those Still in College had wages above the living wage ( $27 \%$ and $23 \%$ respectively). Finding opportunities for those with Some College but no degree to complete a short-term credential like a Certificate or Associate's degree may help increase the lifelong earning potential for those with Some College.

What is also clear from this analysis is that some labor sectors, no matter the level of education, do not provide sufficient earlycareer wages to meet the cost of living in Maryland. The Leisure \& Hospitality labor sector had median quarterly wages between \$5,101 and \$7,756 for all educational attainment groups, even those with college degrees. This pattern for this labor sector exists in all prior cohorts analyzed in this reporting series. This is concerning as this labor sector continues to have one of the largest shares of
high school graduates (13\% of all with sameemployer wages) while only $17 \%$ of those in this sector, regardless of educational attainment, have wages above the living wage.
Comparatively, four of the ten sectors had between $52 \%$ and $64 \%$ of high school graduates with wages above the living wage.

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 a short period of time. The wage outcomes reported here may increase rapidly. It is difficult to predict if the wage 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.

## APPENDICES

Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022

The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | No College |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Female |  | Male |  | Female |  | Male |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 276 | \$10,112 | 1,352 | \$11,920 | 67 | \$8,995 | 669 | \$11,878 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,944 | \$6,659 | 2,485 | \$8,251 | 528 | \$7,200 | 903 | \$8,740 |
| Information Technology | 172 | \$8,945 | 77 | \$8,974 | 95 | \$8,915 | 8 | \$9,590 | 15 | \$10,177 |
| Financial and Real Estate | 675 | \$11,215 | 334 | \$10,426 | 341 | \$12,454 | 62 | \$9,623 | 61 | \$10,798 |
| Professional and Business Services | 2,848 | \$10,469 | 1,384 | \$9,698 | 1,464 | \$11,377 | 210 | \$7,954 | 356 | \$9,598 |
| Education | 720 | \$9,129 | 502 | \$9,291 | 218 | \$8,551 | 31 | \$7,607 | 26 | \$8,128 |
| Health Services | 2,288 | \$7,942 | 1,902 | \$7,966 | 386 | \$7,804 | 325 | \$7,654 | 78 | \$7,765 |
| Leisure and Hospitality | 2,089 | \$6,280 | 1,104 | \$6,296 | 985 | \$6,248 | 241 | \$6,737 | 261 | \$6,569 |
| Other Services/Unclassified | 687 | \$8,077 | 394 | \$7,180 | 293 | \$9,280 | 88 | \$7,587 | 114 | \$10,114 |
| Public Administration | 550 | \$10,550 | 199 | \$9,063 | 351 | \$11,399 | 16 | \$9,182 | 89 | \$10,867 |
| Total | 16,086 | \$8,567 | 8,116 | \$7,959 | 7,970 | \$9,397 | 1,576 | \$7,584 | 2,572 | \$9,619 |

*MLDS Center may only report aggregate, de-identified data. Data requests containing data elements subject to the Family Educational Rights and Privacy Act (FERPA) require suppressing values less than 10 to avoid unauthorized disclosure of protected information. Further, data that may be identifiable based on the size or uniqueness of the population under consideration must be suppressed. Additional values are masked to prevent calculating masked values when group totals and sub-totals are provided. The MLDS Center uses a variety of methods for suppressing, including rounding and perturbing. Suppressed cells are indicated with an *.

Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Some College |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Female |  | Male |  | Female |  | Male |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 276 | \$10,112 | 1,352 | \$11,920 | 85 | \$10,382 | 369 | \$10,780 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,944 | \$6,659 | 2,485 | \$8,251 | 832 | \$6,506 | 1,020 | \$7,844 |
| Information Technology | 172 | \$8,945 | 77 | \$8,974 | 95 | \$8,915 | 29 | \$8,910 | 33 | \$8,028 |
| Financial and Real Estate | 675 | \$11,215 | 334 | \$10,426 | 341 | \$12,454 | 116 | \$9,544 | 81 | \$9,886 |
| Professional and Business Services | 2,848 | \$10,469 | 1,384 | \$9,698 | 1,464 | \$11,377 | 382 | \$8,347 | 364 | \$9,142 |
| Education | 720 | \$9,129 | 502 | \$9,291 | 218 | \$8,551 | 84 | \$6,048 | 52 | \$7,001 |
| Health Services | 2,288 | \$7,942 | 1,902 | \$7,966 | 386 | \$7,804 | 649 | \$7,658 | 128 | \$7,836 |
| Leisure and Hospitality | 2,089 | \$6,280 | 1,104 | \$6,296 | 985 | \$6,248 | 439 | \$6,068 | 452 | \$6,304 |
| Other Services/Unclassified | 687 | \$8,077 | 394 | \$7,180 | 293 | \$9,280 | 152 | \$6,892 | 103 | \$7,728 |
| Public Administration | 550 | \$10,550 | 199 | \$9,063 | 351 | \$11,399 | 51 | \$8,948 | 101 | \$9,820 |
| Total | 16,086 | \$8,567 | 8,116 | \$7,959 | 7,970 | \$9,397 | 2,819 | \$7,380 | 2,703 | \$8,274 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Still Enrolled |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Female |  | Male |  | Female |  | Male |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 276 | \$10,112 | 1,352 | \$11,920 | 44 | \$7,970 | 147 | \$12,243 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,944 | \$6,659 | 2,485 | \$8,251 | 326 | \$5,242 | 300 | \$6,444 |
| Information Technology | 172 | \$8,945 | 77 | \$8,974 | 95 | \$8,915 | 13 | \$6,181 | 18 | \$5,477 |
| Financial and Real Estate | 675 | \$11,215 | 334 | \$10,426 | 341 | \$12,454 | 41 | \$9,744 | 62 | \$10,959 |
| Professional and Business Services | 2,848 | \$10,469 | 1,384 | \$9,698 | 1,464 | \$11,377 | 266 | \$9,564 | 263 | \$10,623 |
| Education | 720 | \$9,129 | 502 | \$9,291 | 218 | \$8,551 | 146 | \$8,434 | 58 | \$8,423 |
| Health Services | 2,288 | \$7,942 | 1,902 | \$7,966 | 386 | \$7,804 | 478 | \$7,403 | 89 | \$6,534 |
| Leisure and Hospitality | 2,089 | \$6,280 | 1,104 | \$6,296 | 985 | \$6,248 | 245 | \$5,051 | 160 | \$5,167 |
| Other Services/Unclassified | 687 | \$8,077 | 394 | \$7,180 | 293 | \$9,280 | 75 | \$5,811 | 43 | \$7,510 |
| Public Administration | 550 | \$10,550 | 199 | \$9,063 | 351 | \$11,399 | 52 | \$7,074 | 55 | \$9,505 |
| Total | 16,086 | \$8,567 | 8,116 | \$7,959 | 7,970 | \$9,397 | 1,686 | \$6,866 | 1,195 | \$8,321 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Lower Division Degree |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Female |  | Male |  | Female |  | Male |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 276 | \$10,112 | 1,352 | \$11,920 | 16 | \$9,135 | 37 | \$10,809 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,944 | \$6,659 | 2,485 | \$8,251 | 68 | \$7,251 | 100 | \$8,661 |
| Information Technology | 172 | \$8,945 | 77 | \$8,974 | 95 | \$8,915 | 6 | ** | 4 | ** |
| Financial and Real Estate | 675 | \$11,215 | 334 | \$10,426 | 341 | \$12,454 | 14 | \$10,865 | 7 | ** |
| Professional and Business Services | 2,848 | \$10,469 | 1,384 | \$9,698 | 1,464 | \$11,377 | 45 | \$9,419 | 50 | \$13,131 |
| Education | 720 | \$9,129 | 502 | \$9,291 | 218 | \$8,551 | 23 | \$8,862 | 13 | \$8,400 |
| Health Services | 2,288 | \$7,942 | 1,902 | \$7,966 | 386 | \$7,804 | 94 | \$10,445 | 18 | \$10,961 |
| Leisure and Hospitality | 2,089 | \$6,280 | 1,104 | \$6,296 | 985 | \$6,248 | 47 | \$7,200 | 39 | \$6,425 |
| Other Services/Unclassified | 687 | \$8,077 | 394 | \$7,180 | 293 | \$9,280 | 20 | \$6,902 | 12 | \$10,151 |
| Public Administration | 550 | \$10,550 | 199 | \$9,063 | 351 | \$11,399 | 22 | \$10,609 | 53 | \$16,957 |
| Total | 16,086 | \$8,567 | 8,116 | \$7,959 | 7,970 | \$9,397 | 355 | \$8,890 | 333 | \$10,630 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Bachelor's Degree or Higher |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Female |  | Male |  | Female |  | Male |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 276 | \$10,112 | 1,352 | \$11,920 | 64 | \$12,881 | 130 | \$16,237 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,944 | \$6,659 | 2,485 | \$8,251 | 190 | \$8,207 | 162 | \$11,204 |
| Information Technology | 172 | \$8,945 | 77 | \$8,974 | 95 | \$8,915 | 21 | \$9,486 | 25 | \$13,230 |
| Financial and Real Estate | 675 | \$11,215 | 334 | \$10,426 | 341 | \$12,454 | 101 | \$13,867 | 130 | \$15,000 |
| Professional and Business Services | 2,848 | \$10,469 | 1,384 | \$9,698 | 1,464 | \$11,377 | 481 | \$12,793 | 431 | \$15,499 |
| Education | 720 | \$9,129 | 502 | \$9,291 | 218 | \$8,551 | 218 | \$11,778 | 69 | \$10,671 |
| Health Services | 2,288 | \$7,942 | 1,902 | \$7,966 | 386 | \$7,804 | 356 | \$10,118 | 73 | \$8,517 |
| Leisure and Hospitality | 2,089 | \$6,280 | 1,104 | \$6,296 | 985 | \$6,248 | 132 | \$8,397 | 73 | \$6,814 |
| Other Services/Unclassified | 687 | \$8,077 | 394 | \$7,180 | 293 | \$9,280 | 59 | \$10,770 | 21 | \$11,430 |
| Public Administration | 550 | \$10,550 | 199 | \$9,063 | 351 | \$11,399 | 58 | \$10,287 | 53 | \$10,551 |
| Total | 16,086 | \$8,567 | 8,116 | \$7,959 | 7,970 | \$9,397 | 1,680 | \$11,177 | 1,167 | \$13,671 |

*MLDS Center may only report aggregate, de-identified data. Data requests containing data elements subject to the Family Educational Rights and Privacy Act (FERPA) require suppressing values less than 10 to avoid unauthorized disclosure of protected information. Further, data that may be identifiable based on the size or uniqueness of the population under consideration must be suppressed. Additional values are masked to prevent calculating masked values when group totals and sub-totals are provided. The MLDS Center uses a variety of methods for suppressing, including rounding and perturbing. Suppressed cells are indicated with an *.

## Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School

 Graduation, Fiscal Quarter 2 of 2022The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix 2 for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  | No College |  | Some College |  | Still in College |  | Lower Division Degree |  | Bachelor's Degree or Higher |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Hispanic, Any Race |  | Hispanic, Any Race |  | Hispanic, Any Race |  | Hispanic, Any Race |  | Hispanic, Any Race |  | Hispanic, <br> Any Race |  |
|  | n | \$ | n | \$ | n | \$ | \$ | n | n | \$ | $n$ | \$ | $n$ | \$ |
| Goods Production | 1,628 | \$11,638 | 245 | \$12,249 | 118 | \$11,918 | 85 | \$12,480 | 23 | \$13,137 | 11 | \$11,662 | 8 | ** |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 585 | \$8,392 | 210 | \$8,770 | 262 | \$8,286 | 61 | \$5,200 | 27 | \$8,955 | 25 | \$9,522 |
| Information Technology | 172 | \$8,945 | 24 | \$8,885 | 5 | ** | 11 | \$8,716 | 4 | ** | * | * | * | * |
| Financial and Real Estate | 675 | \$11,215 | 94 | \$10,797 | 25 | \$11,660 | 39 | \$10,470 | 12 | \$8,338 | 4 | ** | 14 | \$14,159 |
| Professional and Business Services | 2,848 | \$10,469 | 343 | \$9,499 | 95 | \$9,848 | 123 | \$8,705 | 57 | \$8,055 | 5 | ** | 63 | \$12,291 |
| Education | 720 | \$9,129 | 60 | \$6,975 | 8 | ** | 21 | \$5,635 | 15 | \$6,765 | * | * | * | * |
| Health Services | 2,288 | \$7,942 | 338 | \$8,307 | 91 | \$8,254 | 133 | \$8,502 | 71 | \$6,911 | 17 | \$9,089 | 26 | \$9,222 |
| Leisure and Hospitality | 2,089 | \$6,280 | 268 | \$6,501 | 90 | \$7,302 | 107 | \$6,395 | 51 | \$4,312 | * | * | * | * |
| Other Services/Unclassified | 687 | \$8,077 | 91 | \$8,132 | 32 | \$9,804 | 32 | \$7,726 | 16 | \$4,524 | 5 | ** | 6 | \$10,033 |
| Public Administration | 550 | \$10,550 | 38 | \$9,478 | 6 | ** | 9 | ** | 7 | ** | 10 | \$12,284 | 6 | \$8,769 |
| Total | 16,086 | \$8,567 | 2,086 | \$8,795 | 680 | \$9,225 | 822 | \$8,524 | 317 | \$6,765 | 85 | \$9,570 | 182 | \$10,680 |

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## Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School

 Graduation, Fiscal Quarter 2 of 2022The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix 2 for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  |  |  | No College |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | African-American / Black Alone |  | Asian Alone |  | White Alone |  | AfricanAmerican / Black Alone |  | Asian Alone |  | White Alone |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 257 | \$10,420 | 42 | \$15,493 | 1,180 | \$11,877 | 115 | \$10,479 | * | * | 545 | \$11,821 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,782 | \$7,036 | 194 | \$6,154 | 1,977 | \$8,030 | 590 | \$7,653 | 24 | \$7,464 | 661 | \$8,714 |
| Information Technology | 172 | \$8,945 | 58 | \$9,096 | 13 | \$11,322 | 86 | \$8,754 | 8 | ** | $\wedge$ | $\wedge$ | 12 | \$10,517 |
| Financial and Real Estate | 675 | \$11,215 | 209 | \$10,243 | 50 | \$13,748 | 342 | \$12,152 | 41 | \$10,059 | * | * | 65 | \$10,719 |
| Professional and Business Services | 2,848 | \$10,469 | 798 | \$8,823 | 234 | \$14,031 | 1,528 | \$11,426 | 208 | \$7,893 | 6 | ** | 277 | \$9,464 |
| Education | 720 | \$9,129 | 174 | \$8,134 | 52 | \$7,780 | 441 | \$9,969 | 26 | \$8,303 | 4 | ** | 20 | \$6,683 |
| Health Services | 2,288 | \$7,942 | 806 | \$7,648 | 161 | \$8,191 | 1,046 | \$8,055 | 171 | \$7,399 | 4 | ** | 162 | \$7,768 |
| Leisure and Hospitality | 2,089 | \$6,280 | 593 | \$6,058 | 125 | \$5,376 | 1,170 | \$6,366 | 182 | \$6,098 | 12 | \$7,988 | 252 | \$6,881 |
| Other <br> Services/Unclassified | 687 | \$8,077 | 173 | \$7,338 | 31 | \$8,092 | 405 | \$8,222 | 41 | \$7,255 | * | * | 139 | \$9,475 |
| Public Administration | 550 | \$10,550 | 131 | \$7,728 | 13 | \$10,933 | 365 | \$11,614 | 20 | \$9,182 | $\wedge$ | $\wedge$ | 77 | \$10,978 |
| Total | 16,086 | \$8,567 | 4,981 | \$7,732 | 915 | \$8,745 | 8,540 | \$9,288 | 1,402 | \$7,704 | 54 | \$8,079 | 2,210 | \$9,495 |

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## Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School

 Graduation, Fiscal Quarter 2 of 2022The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix 2 for information on group assignment and same-employer wages.

| Sector | All Same-Employer High School Graduates |  | Overall |  |  |  |  |  | Some College |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | AfricanAmerican / Black Alone |  | Asian Alone |  | White Alone |  | African- <br> American / <br> Black Alone |  | Asian Alone |  | White Alone |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 257 | \$10,420 | 42 | \$15,493 | 1,180 | \$11,877 | 92 | \$10,406 | 12 | \$10,619 | 297 | \$10,788 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,782 | \$7,036 | 194 | \$6,154 | 1,977 | \$8,030 | 831 | \$6,801 | 86 | \$6,176 | 732 | \$7,713 |
| Information Technology | 172 | \$8,945 | 58 | \$9,096 | 13 | \$11,322 | 86 | \$8,754 | 29 | \$9,090 | $*$ | * | 24 | \$7,088 |
| Financial and Real Estate | 675 | \$11,215 | 209 | \$10,243 | 50 | \$13,748 | 342 | \$12,152 | 89 | \$9,288 | 11 | \$10,074 | 69 | \$9,424 |
| Professional and Business <br> Services | 2,848 | \$10,469 | 798 | \$8,823 | 234 | \$14,031 | 1,528 | \$11,426 | 293 | \$7,985 | 22 | \$10,116 | 322 | \$9,493 |
| Education | 720 | \$9,129 | 174 | \$8,134 | 52 | \$7,780 | 441 | \$9,969 | 48 | \$7,270 | 7 | \$4,418 | 61 | \$6,665 |
| Health Services | 2,288 | \$7,942 | 806 | \$7,648 | 161 | \$8,191 | 1,046 | \$8,055 | 336 | \$7,656 | 33 | \$5,500 | 308 | \$7,607 |
| Leisure and Hospitality | 2,089 | \$6,280 | 593 | \$6,058 | 125 | \$5,376 | 1,170 | \$6,366 | 293 | \$5,992 | 62 | \$5,767 | 449 | \$6,289 |
| Other Services/ Unclassified | 687 | \$8,077 | 173 | \$7,338 | 31 | \$8,092 | 405 | \$8,222 | 78 | \$6,818 | 14 | \$7,618 | 133 | \$7,295 |
| Public Administration | 550 | \$10,550 | 131 | \$7,728 | 13 | \$10,933 | 365 | \$11,614 | 49 | \$6,129 | * | * | 89 | \$11,414 |
| Total | 16,086 | \$8,567 | 4,981 | \$7,732 | 915 | \$8,745 | 8,540 | \$9,288 | 2,138 | \$7,367 | 253 | \$6,806 | 2,484 | \$8,115 |

*MLDS Center may only report aggregate, de-identified data. Data requests containing data elements subject to the Family Educational Rights and Privacy Act (FERPA) require suppressing values less than 10 to avoid unauthorized disclosure of protected information. Further, data that may be identifiable based on the size or uniqueness of the population under consideration must be suppressed. Additional values are masked to prevent calculating masked values when group totals and sub-totals are provided. The MLDS Center uses a variety of methods for suppressing, including rounding and perturbing. Suppressed cells are indicated with an *. **Median wages are only provided when calculated on cell sizes of 10 or more. Note: Race is reported independent of Ethnicity, and some racial groups are omitted due to small population sizes therefore values do not sum to the total.

## Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School

 Graduation, Fiscal Quarter 2 of 2022The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix 2 for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  |  |  | Still in College |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | African-American / Black Alone |  | Asian Alone |  | White Alone |  | African-American <br> / Black Alone |  | Asian Alone |  | White Alone |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 257 | \$10,420 | 42 | \$15,493 | 1,180 | \$11,877 | 36 | \$10,224 | 8 | ** | 135 | \$11,840 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,782 | \$7,036 | 194 | \$6,154 | 1,977 | \$8,030 | 235 | \$6,203 | 45 | \$3,948 | 284 | \$5,834 |
| Information Technology | 172 | \$8,945 | 58 | \$9,096 | 13 | \$11,322 | 86 | \$8,754 | 9 | ** | * | * | 17 | \$5,134 |
| Financial and Real Estate | 675 | \$11,215 | 209 | \$10,243 | 50 | \$13,748 | 342 | \$12,152 | 25 | \$10,255 | 8 | ** | 58 | \$10,959 |
| Professional and Business Services | 2,848 | \$10,469 | 798 | \$8,823 | 234 | \$14,031 | 1,528 | \$11,426 | 122 | \$9,862 | 65 | \$11,919 | 298 | \$10,116 |
| Education | 720 | \$9,129 | 174 | \$8,134 | 52 | \$7,780 | 441 | \$9,969 | 51 | \$7,668 | 16 | \$5,830 | 128 | \$9,384 |
| Health Services | 2,288 | \$7,942 | 806 | \$7,648 | 161 | \$8,191 | 1,046 | \$8,055 | 172 | \$7,380 | 62 | \$5,308 | 270 | \$7,388 |
| Leisure and Hospitality | 2,089 | \$6,280 | 593 | \$6,058 | 125 | \$5,376 | 1,170 | \$6,366 | 79 | \$5,495 | 36 | \$3,231 | 252 | \$4,933 |
| Other Services/ Unclassified | 687 | \$8,077 | 173 | \$7,338 | 31 | \$8,092 | 405 | \$8,222 | 29 | \$7,510 | * | * | 73 | \$5,892 |
| Public Administration | 550 | \$10,550 | 131 | \$7,728 | 13 | \$10,933 | 365 | \$11,614 | 32 | \$4,864 | * | * | 64 | \$9,820 |
| Total | 16,086 | \$8,567 | 4,981 | \$7,732 | 915 | \$8,745 | 8,540 | \$9,288 | 790 | \$7,371 | 252 | \$6,264 | 1,579 | \$7,507 |

*MLDS Center may only report aggregate, de-identified data. Data requests containing data elements subject to the Family Educational Rights and Privacy Act (FERPA) require suppressing values less than 10 to avoid unauthorized disclosure of protected information. Further, data that may be identifiable based on the size or uniqueness of the population under consideration must be suppressed. Additional values are masked to prevent calculating masked values when group totals and sub-totals are provided. The MLDS Center uses a variety of methods for suppressing, including rounding and perturbing. Suppressed cells are indicated with an *. **Median wages are only provided when calculated on cell sizes of 10 or more. Note: Race is reported independent of Ethnicity, and some racial groups are omitted due to small population sizes therefore values do not sum to the total.

## Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School

 Graduation, Fiscal Quarter 2 of 2022The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix 2 for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  |  |  | Lower Division Degree |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | African-American / Black Alone |  | Asian Alone |  | White Alone |  | African-American / Black Alone |  | Asian Alone |  | White Alone |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 257 | \$10,420 | 42 | \$15,493 | 1,180 | \$11,877 | * | * | * | * | 41 | \$10,383 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,782 | \$7,036 | 194 | \$6,154 | 1,977 | \$8,030 | 30 | \$6,768 | 13 | \$8,034 | 101 | \$8,562 |
| Information Technology | 172 | \$8,945 | 58 | \$9,096 | 13 | \$11,322 | 86 | \$8,754 | * | * | $\wedge$ | $\wedge$ | 8 | ** |
| Financial and Real Estate | 675 | \$11,215 | 209 | \$10,243 | 50 | \$13,748 | 342 | \$12,152 | 5 | ** | $\wedge$ | $\wedge$ | 13 | \$11,102 |
| Professional and Business Services | 2,848 | \$10,469 | 798 | \$8,823 | 234 | \$14,031 | 1,528 | \$11,426 | 14 | \$10,086 | 10 | \$7,617 | 67 | \$13,109 |
| Education | 720 | \$9,129 | 174 | \$8,134 | 52 | \$7,780 | 441 | \$9,969 | 4 | ** | * | * | 26 | \$8,912 |
| Health Services | 2,288 | \$7,942 | 806 | \$7,648 | 161 | \$8,191 | 1,046 | \$8,055 | 17 | \$8,629 | 7 | ** | 73 | \$10,778 |
| Leisure and Hospitality | 2,089 | \$6,280 | 593 | \$6,058 | 125 | \$5,376 | 1,170 | \$6,366 | 9 | ** | 5 | ** | 65 | \$6,595 |
| Other Services/ Unclassified | 687 | \$8,077 | 173 | \$7,338 | 31 | \$8,092 | 405 | \$8,222 | * | * | * | * | 22 | \$9,036 |
| Public Administration | 550 | \$10,550 | 131 | \$7,728 | 13 | \$10,933 | 365 | \$11,614 | 8 | ** | * | * | 57 | \$16,417 |
| Total | 16,086 | \$8,567 | 4,981 | \$7,732 | 915 | \$8,745 | 8,540 | \$9,288 | 94 | \$8,303 | 43 | \$9,582 | 473 | \$10,237 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  |  |  | Bachelor's Degree or Higher |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | AfricanAmerican / Black Alone |  | Asian Alone |  | White Alone |  | African-American / Black Alone |  | Asian Alone |  | White Alone |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 257 | \$10,420 | 42 | \$15,493 | 1,180 | \$11,877 | 11 | \$10,897 | 17 | \$20,909 | 162 | \$15,115 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,782 | \$7,036 | 194 | \$6,154 | 1,977 | \$8,030 | 96 | \$8,019 | 26 | \$9,281 | 199 | \$10,024 |
| Information Technology | 172 | \$8,945 | 58 | \$9,096 | 13 | \$11,322 | 86 | \$8,754 | 11 | \$10,230 | 8 | ** | 25 | \$9,486 |
| Financial and Real Estate | 675 | \$11,215 | 209 | \$10,243 | 50 | \$13,748 | 342 | \$12,152 | 49 | \$14,058 | 30 | \$17,250 | 137 | \$14,653 |
| Professional and Business Services | 2,848 | \$10,469 | 798 | \$8,823 | 234 | \$14,031 | 1,528 | \$11,426 | 161 | \$13,000 | 131 | \$16,012 | 564 | \$13,961 |
| Education | 720 | \$9,129 | 174 | \$8,134 | 52 | \$7,780 | 441 | \$9,969 | 45 | \$10,847 | 22 | \$9,111 | 206 | \$12,424 |
| Health Services | 2,288 | \$7,942 | 806 | \$7,648 | 161 | \$8,191 | 1,046 | \$8,055 | 110 | \$9,232 | 55 | \$9,120 | 233 | \$10,325 |
| Leisure and Hospitality | 2,089 | \$6,280 | 593 | \$6,058 | 125 | \$5,376 | 1,170 | \$6,366 | 30 | \$6,802 | 10 | \$5,966 | 152 | \$8,001 |
| Other Services/ Unclassified | 687 | \$8,077 | 173 | \$7,338 | 31 | \$8,092 | 405 | \$8,222 | 22 | \$10,039 | 8 | ** | 38 | \$11,146 |
| Public Administration | 550 | \$10,550 | 131 | \$7,728 | 13 | \$10,933 | 365 | \$11,614 | 22 | \$9,098 | 6 | ** | 78 | \$10,504 |
| Total | 16,086 | \$8,567 | 4,981 | \$7,732 | 915 | \$8,745 | 8,540 | \$9,288 | 557 | \$10,675 | 313 | \$13,964 | 1,794 | \$12,601 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | No College |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | FARMS |  | Non-FARMS |  | FARMS |  | Non-FARMS |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 476 | \$11,107 | 1,152 | \$11,805 | 270 | \$11,105 | 466 | \$11,852 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,663 | \$7,497 | 2,766 | \$7,716 | 670 | \$7,857 | 761 | \$8,415 |
| Information Technology | 172 | \$8,945 | 47 | \$9,090 | 125 | \$8,915 | 8 | ** | 15 | \$10,078 |
| Financial and Real Estate | 675 | \$11,215 | 181 | \$10,259 | 494 | \$11,680 | 52 | \$10,420 | 71 | \$10,213 |
| Professional and Business Services | 2,848 | \$10,469 | 719 | \$8,826 | 2,129 | \$11,235 | 265 | \$8,225 | 301 | \$9,244 |
| Education | 720 | \$9,129 | 146 | \$7,813 | 574 | \$9,420 | 28 | \$7,769 | 29 | \$7,572 |
| Health Services | 2,288 | \$7,942 | 787 | \$7,676 | 1,501 | \$8,077 | 211 | \$7,424 | 192 | \$7,956 |
| Leisure and Hospitality | 2,089 | \$6,280 | 716 | \$6,493 | 1,373 | \$6,173 | 280 | \$6,730 | 222 | \$6,482 |
| Other Services/Unclassified | 687 | \$8,077 | 189 | \$8,312 | 498 | \$7,908 | 64 | \$9,649 | 138 | \$8,355 |
| Public Administration | 550 | \$10,550 | 105 | \$9,986 | 445 | \$10,691 | 33 | \$9,848 | 72 | \$11,562 |
| Total | 16,086 | \$8,567 | 5,029 | \$8,087 | 11,057 | \$8,889 | 1,881 | \$8,169 | 2,267 | \$9,097 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Some College |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | FARMS |  | Non-FARMS |  | FARMS |  | Non-FARMS |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 476 | \$11,107 | 1,152 | \$11,805 | 140 | \$11,251 | 314 | \$10,559 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,663 | \$7,497 | 2,766 | \$7,716 | 687 | \$7,247 | 1,165 | \$7,166 |
| Information Technology | 172 | \$8,945 | 47 | \$9,090 | 125 | \$8,915 | 22 | \$9,383 | 40 | \$7,358 |
| Financial and Real Estate | 675 | \$11,215 | 181 | \$10,259 | 494 | \$11,680 | 76 | \$9,968 | 121 | \$9,343 |
| Professional and Business Services | 2,848 | \$10,469 | 719 | \$8,826 | 2,129 | \$11,235 | 245 | \$8,189 | 501 | \$8,964 |
| Education | 720 | \$9,129 | 146 | \$7,813 | 574 | \$9,420 | 45 | \$7,000 | 91 | \$6,075 |
| Health Services | 2,288 | \$7,942 | 787 | \$7,676 | 1,501 | \$8,077 | 320 | \$7,596 | 457 | \$7,818 |
| Leisure and Hospitality | 2,089 | \$6,280 | 716 | \$6,493 | 1,373 | \$6,173 | 300 | \$6,261 | 591 | \$6,147 |
| Other Services/Unclassified | 687 | \$8,077 | 189 | \$8,312 | 498 | \$7,908 | 79 | \$7,635 | 176 | \$7,010 |
| Public Administration | 550 | \$10,550 | 105 | \$9,986 | 445 | \$10,691 | 27 | \$9,386 | 125 | \$9,425 |
| Total | 16,086 | \$8,567 | 5,029 | \$8,087 | 11,057 | \$8,889 | 1,941 | \$7,751 | 3,581 | \$7,827 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Still in College |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | FARMS |  | Non-FARMS |  | FARMS |  | Non-FARMS |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 476 | \$11,107 | 1,152 | \$11,805 | 41 | \$10,314 | 150 | \$11,396 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,663 | \$7,497 | 2,766 | \$7,716 | 193 | \$5,881 | 433 | \$5,805 |
| Information Technology | 172 | \$8,945 | 47 | \$9,090 | 125 | \$8,915 | 8 | ** | 23 | \$6,005 |
| Financial and Real Estate | 675 | \$11,215 | 181 | \$10,259 | 494 | \$11,680 | 18 | \$9,083 | 85 | \$10,507 |
| Professional and Business Services | 2,848 | \$10,469 | 719 | \$8,826 | 2,129 | \$11,235 | 105 | \$9,687 | 424 | \$10,194 |
| Education | 720 | \$9,129 | 146 | \$7,813 | 574 | \$9,420 | 36 | \$7,425 | 168 | \$8,919 |
| Health Services | 2,288 | \$7,942 | 787 | \$7,676 | 1,501 | \$8,077 | 154 | \$7,603 | 413 | \$7,059 |
| Leisure and Hospitality | 2,089 | \$6,280 | 716 | \$6,493 | 1,373 | \$6,173 | 92 | \$6,054 | 313 | \$4,933 |
| Other Services/Unclassified | 687 | \$8,077 | 189 | \$8,312 | 498 | \$7,908 | 25 | \$6,388 | 93 | \$6,113 |
| Public Administration | 550 | \$10,550 | 105 | \$9,986 | 445 | \$10,691 | 19 | \$8,932 | 88 | \$7,878 |
| Total | 16,086 | \$8,567 | 5,029 | \$8,087 | 11,057 | \$8,889 | 691 | \$7,395 | 2,190 | \$7,369 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Lower Division Degree |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | FARMS |  | Non-FARMS |  | FARMS |  | Non-FARMS |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 476 | \$11,107 | 1,152 | \$11,805 | 11 | \$10,321 | 42 | \$11,236 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,663 | \$7,497 | 2,766 | \$7,716 | 46 | \$7,691 | 122 | \$8,298 |
| Information Technology | 172 | \$8,945 | 47 | \$9,090 | 125 | \$8,915 | * | * | 8 | ** |
| Financial and Real Estate | 675 | \$11,215 | 181 | \$10,259 | 494 | \$11,680 | 8 | ** | 13 | \$10,795 |
| Professional and Business Services | 2,848 | \$10,469 | 719 | \$8,826 | 2,129 | \$11,235 | 13 | \$9,333 | 82 | \$12,593 |
| Education | 720 | \$9,129 | 146 | \$7,813 | 574 | \$9,420 | 7 | ** | 29 | \$8,862 |
| Health Services | 2,288 | \$7,942 | 787 | \$7,676 | 1,501 | \$8,077 | 31 | \$10,452 | 81 | \$10,599 |
| Leisure and Hospitality | 2,089 | \$6,280 | 716 | \$6,493 | 1,373 | \$6,173 | 18 | \$5,838 | 68 | \$6,810 |
| Other Services/Unclassified | 687 | \$8,077 | 189 | \$8,312 | 498 | \$7,908 | * | * | 24 | \$8,657 |
| Public Administration | 550 | \$10,550 | 105 | \$9,986 | 445 | \$10,691 | 14 | \$16,982 | 61 | \$15,541 |
| Total | 16,086 | \$8,567 | 5,029 | \$8,087 | 11,057 | \$8,889 | 158 | \$9,306 | 530 | \$9,969 |

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Appendix 1: High School Graduates, State of Maryland, 2017, Median Quarterly Wages Five Years after High School Graduation, Fiscal Quarter 2 of 2022
The table below provides the distributions of high school graduates by select characteristics and the median quarterly wage for those graduates with same-employer wages. See the Technical Documentation in Appendix $\mathbf{2}$ for information on group assignment and same-employer wages.

| Sector | All SameEmployer High School Graduates |  | Overall |  |  |  | Bachelor's Degree or Higher |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | FARMS |  | Non-FARMS |  | FARMS |  | Non-FARMS |  |
|  | n | \$ | n | \$ | n | \$ | n | \$ | n | \$ |
| Goods Production | 1,628 | \$11,638 | 476 | \$11,107 | 1,152 | \$11,805 | 14 | \$17,292 | 180 | \$15,225 |
| Trade, Transportation and Utilities | 4,429 | \$7,641 | 1,663 | \$7,497 | 2,766 | \$7,716 | 67 | \$8,115 | 285 | \$9,939 |
| Information Technology | 172 | \$8,945 | 47 | \$9,090 | 125 | \$8,915 | 7 | ** | 39 | \$12,162 |
| Financial and Real Estate | 675 | \$11,215 | 181 | \$10,259 | 494 | \$11,680 | 27 | \$13,916 | 204 | \$14,759 |
| Professional and Business Services | 2,848 | \$10,469 | 719 | \$8,826 | 2,129 | \$11,235 | 91 | \$12,241 | 821 | \$14,018 |
| Education | 720 | \$9,129 | 146 | \$7,813 | 574 | \$9,420 | 30 | \$11,563 | 257 | \$11,674 |
| Health Services | 2,288 | \$7,942 | 787 | \$7,676 | 1,501 | \$8,077 | 71 | \$9,520 | 358 | \$9,920 |
| Leisure and Hospitality | 2,089 | \$6,280 | 716 | \$6,493 | 1,373 | \$6,173 | 26 | \$7,378 | 179 | \$7,805 |
| Other Services/Unclassified | 687 | \$8,077 | 189 | \$8,312 | 498 | \$7,908 | 13 | \$10,142 | 67 | \$10,995 |
| Public Administration | 550 | \$10,550 | 105 | \$9,986 | 445 | \$10,691 | 12 | \$9,895 | 99 | \$10,457 |
| Total | 16,086 | \$8,567 | 5,029 | \$8,087 | 11,057 | \$8,889 | 358 | \$10,760 | 2,489 | \$12,399 |

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## Appendix 2: Technical Documentation

## Introduction

This technical documentation contains information on the primary data and methods used to prepare The Career Preparation Expansion Act (CPEA) report as well as overviews of the two state agencies who produce the report.

The annual CPEA 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).

Report Requirements:
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.

## State Agencies

The Maryland Longitudinal Data System Center (MLDS Center) is the State of Maryland's central repository for student and workforce data. The MLDS Center develops and maintains the MLDS 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 (GWDB) helps plan, coordinate, and monitor the State of Maryland's 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 the CPEA report focuses on the employment of individuals as they transition into the workforce after receiving their high school diploma, including whether any of the graduates enrolled in college or earned a college degree after high school graduation. Below is an overview of the available data within the System to support this analysis:

## Education Data

The MLDS contains education data on all students from Maryland public high schools, students attending Maryland public, state-aided independent and private institutions of higher education, and adults completing GED ${ }^{\circledR}$ Testing or the National External Diploma Program ${ }^{\circledR}$ (NEDP ${ }^{\circledR}$ ). Education data begin with the 2007-2008 academic year. The MLDS does not contain education data on students in private high schools or private institutions of higher education. Nor does the MLDS contain data on postsecondary students in continuing education or noncredit programs. Further, data on unsuccessful attempts at fulfilling the GED ${ }^{\circledR}$ or NEDP ${ }^{\oplus}$ requirements are not included in the System. The MLDS contains limited information on out-of-state college enrollment and graduation for Maryland public high school graduates.

## Wage Data

The MLDS System contains workforce data from quarterly Unemployment Insurance (UI) filings beginning with the first fiscal quarter of 2008 for individuals 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 and/or corrections) are completed within one fiscal quarter. The CPEA report includes three fiscal quarters of UI wage data. Two of the fiscal quarters have had at least one fiscal quarter of subsequent UI data reported, including the fiscal quarter used to derive median quarterly wages; therefore, errors in wage amounts due to corrections and late filings have been minimized. One of the fiscal quarters has not yet had a subsequent quarter of UI wage data filed. This fiscal quarter is used as part of the wage full-quarter wage methodology (see below); therefore, the reported wage visibility may be either overstated or understated.

Wage data in the MLDS 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 (MIT) provides data on the cost of living in various geographic areas across the United States. The living wage calculator considers 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 is required annual income before taxes for one adult with no dependent children ("Living Wage"). This annual income is converted to a quarterly income to align to the MLDS quarterly wage data. The Living Wage Calculator is reviewed each year in preparation for producing the CPEA report and the income reported is inflation adjusted (if necessary) using the CPI Inflation Calculator provided by the U. S. Department of Labor, Bureau of Labor Statistics to align to the wage period of the CPEA report. In 2020, the Living Wage Calculator was modified to include new categories of living expenses which, in turn, increase the living wage in Maryland by approximately $\$ 1,000$ per quarter over the prior formula.

## American Community Survey 5 Year Estimates

The second source of contextual data was American Community Survey (ACS) 1-Year Estimates, 2022. 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 is median earnings for workers ("ACS Wage"). This annual income measure is converted to quarterly earnings to align to the MLDS quarterly wage data. This value is adjusted each year using the CPI inflation calculator provided by the U. S. Department of Labor, Bureau of Labor Statistics to align to the wage period of the CPEA report.

## Minimum Wage in Maryland

The minimum wage in Maryland from July 2018 to December 2019 was $\$ 10.10$ per hour. Maryland raised the minimum wage to $\$ 15.00$ per hour with an annual phased-in increase of $\$ 0.60$ to $\$ 0.75$ per hour between January 1, 2020 and January 1, 2026 contingent upon the number of employees. The quarterly minimum wage is calculated based upon employment for 30 hours per week for 52 weeks per year. 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.

## Full-Quarter Wage Methodology

The high school graduates included in the wage analysis are selected by using the U. S. Census Bureau Stable or Full-Quarter Employment Methodology (referenced as Full-Quarter throughout the report) ${ }^{20}$. 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. The period of interest for CPEA is five years or
the $20^{\text {th }}$ fiscal quarter after high school graduation; accordingly, individuals were included in the median wage calculation if, in addition to having wages in quarter 20, they also had wages in quarters 19 and 21. For each high school cohort, the $20^{\text {th }}$ quarter after graduation is fiscal quarter 2 in a calendar year. For the 2023 report on the 2017 cohort of high school graduates, the $20^{\text {th }}$ quarter was fiscal quarter 2 of 2022. Accordingly, individuals were included in the median wage calculation ${ }^{21}$ if, in addition to having wages in quarter 2 of 2022, they also had wages in fiscal quarter 1 of 2022 and fiscal quarter 3 of 2022.

The Full-Quarter Methodology 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 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.

## Same-Employer Wage Methodology

The U.S. Census Bureau Stable or Full-Quarter Employment Methodology ${ }^{22}$ was used as a basis for selecting high school graduates to include in the industry-level wage analysis with the added requirement that the high school graduate must have been employed by the same employer for the nine-month period (Q19, Q20, and Q21) before deriving median wage calculations using Q20 wages. ${ }^{23}$

## Wage Bands

Wage bands were constructed to align to the contextual indicators selected for this report. The wages earned in the $20^{\text {th }}$ quarter for those with full-quarter employment were used to assign each high school graduate to one of four wage groups. The wage band values are updated each year to align to that year's wages.

| Income Band | $20^{\text {th }}$ Fiscal Quarter Wage |
| ---: | :---: |
| Less than Minimum Wage | \$1 to <Minimum Wage |
| Between Minimum Wage and Living Wage | >=Minimum Wage to Living Wage |
| Between the Living Wage and ACS Wage | $>=$ Living Wage to ACS Wage |
| Greater than or equal to the ACS Wage | $>=$ ACS Wage |

## NAICS Groupings

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. ${ }^{24}$

| Sector Category | Sector Sub-Category | NAICS |
| :--- | :--- | :--- |
| Goods Producing | Natural Resources \& Mining | Agriculture (11) |
| Goods Producing | Natural Resources \& Mining | Mining (21) |
| Goods Producing | Goods Production | Construction (23) |
| Goods Producing | Goods Production | Manufacturing (31-33) |
| Service Providing | Trade, Transportation, \& Utilities | Utilities (22) |
| Service Providing | Trade, Transportation, \& Utilities | Wholesale \& Retail (42-45) |
| Service Providing | Trade, Transportation, \& Utilities | Transportation \& Warehousing (48-49) |
| Service Providing | Information | Information Technology (51) |
| Service Providing | Financial \& Real Estate | Finance \& Insurance (52) |
| Service Providing | Financial \& Real Estate | Real Estate (53) |
| Service Providing | Professional \& Business Services | Professional, Scientific, Technical Services (54) |
| Service Providing | Professional \& Business Services | Management (55) |
| Service Providing | Professional \& Business Services | Administrative, Support \& Waste Management (56) |
| Service Providing | Education \& Health Services | Educational Services (61) |
| Service Providing | Education \& Health Services | Health Care \& Social Assistance (62) |
| Service Providing | Leisure \& Hospitality | Arts, Entertainment \& Recreation (71) |
| Service Providing | Leisure \& Hospitality | Accommodation \& Food Services (72) |
| Service Providing | Other Services | Other Services (81) |
| Service Providing | Public Administration | Public Administration (92) |

## Educational Attainment Methodology

Educational attainment has important implications for workforce outcomes:

- First, research suggests that employment outcomes and wages may vary by level of educational attainment. ${ }^{25}$
- 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 careertrack employment.
- Finally, the time to degree widely varies based upon the type of postsecondary degree. Certificate, 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 wage 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.

Educational attainment was frozen 6 months prior to the end of the five-year period 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. The $20^{\text {th }}$ quarter after high school graduation aligns with the postsecondary Spring term which would end in May or June of a given year; however, assignment to an educational attainment category is made as of each student's status in Fall (for example, December 2020 or Quarter 18 post-high school graduation for the 2016 cohort).

Seven educational attainment groups were created using the definitions below. The dates referenced below are for the 2017 cohort of high school graduates.

1. No College: High school graduates without an in-state or out-of-state college enrollment record by the end of Spring term 2022.
2. Some College: High school graduates enrolled for at least one term between Fall 2017 and Fall 2021 but who are not actively enrolled in college in the Spring 2022 or Fall 2022 terms and did not earn any level of postsecondary degree.
3. Still in College: High school graduates enrolled in college in-state or out-of-state in the Spring 2022 and/or Fall 2022 terms. These graduates may have earned a postsecondary degree by the end of the Fall 2021 term; however, they are still actively pursuing additional postsecondary education.
4. Certificate Graduates: High school graduates who earned a postsecondary Certificate by the end of the Fall term 2020 and are not enrolled in college in the Spring 2022 or Fall 2022 terms. These graduates may have continued their postsecondary education beyond the Certificate; however, they had disengaged from postsecondary education without earning an additional degree by Fall term 2021.
5. Associate's Graduates: High school graduates who earned an Associate's degree by the end of the Fall term 2021 and are not enrolled in college in the Spring 2022 and/or Fall 2022 terms. These graduates may have continued their postsecondary education beyond the Associate's; however, they had disengaged from postsecondary education without earning an additional degree by Fall term 2021.
6. Bachelor's Graduates: High school graduates who earned a Bachelor's degree by the end of the Fall term 2021 and are not enrolled in college in the Spring 2022 and/or Fall 2022 terms. These graduates may have continued their postsecondary education beyond the Bachelor's; however, they had disengaged from postsecondary education without earning an additional degree by Fall term 2021.
7. Other Degree Attainment: High school graduates who earned a post-baccalaureate degree or a graduate degree by the end of Fall 2021 term and are not enrolled in college in the Spring 2022 or Fall 2022 terms. These graduates may have continued their postsecondary education; however, they had disengaged from postsecondary education without earning an additional degree by Fall term 2021.

Educational attainment should not be interpreted as college graduation rates as the CPEA 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.

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. No high school graduates in the Some College category earned any level of postsecondary degree.

## Demographic and Economic Groups

All high school graduates were assigned to one racial category, one ethnic category, one gender category, and one economic category. ${ }^{26}$

Assignment to racial and ethnic categories 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 categories included in CPEA align to standard reporting practices employed by the U.S. Bureau of Labor Statistics (BLS). BLS reports labor data for three racial categories: White alone, Black or African-American alone, and Asian alone. Each racial category consists of individuals that identify with a single race but may be of any ethnicity. All other racial categories, including individuals identifying with two or more races, are omitted from BLS reports due to the small population size. ${ }^{27}$ Small populations limit the conclusions that can be drawn from the data and may compromise the quality of any research.

This report uses student-level data on free or reduced-price meals (FARMS) eligibility for assignment to an economic category. 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. The CPEA report evaluates FARMS status during $12^{\text {th }}$ grade. As such, it likely underrepresents the number of students experiencing poverty in each cohort, 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.


## End Notes

${ }^{1}$ 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).
${ }^{2}$ See Technical Appendix. Demographic and Economic Groups section. 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.
${ }^{3}$ See Technical Appendix. Educational Attainment Methodology section. 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.
${ }^{4}$ See Technical Appendix. Wage Data. 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.
${ }^{5}$ Wages are actual for Q2 2022 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.
${ }^{6}$ See Technical Appendix. Wage Data.
${ }^{7}$ The full reporting series can be found at https://mldscenter.maryland.gov/CenterReports.html under the section:
Annual Report on the Workforce Outcomes of Maryland Public High School Graduates.
${ }^{8}$ Glasmeier, A. (2023). Living Wage Calculator. Massachusetts Institute of Technology. https://livingwage.mit.edu/states/24/locations
${ }^{9}$ United States Census Bureau. (2022). U.S. Census Bureau, 2016-2020 American Community Survey 1-Year Estimates Subject Tables. https://data.census.gov/table/ACSST1Y2022.S2001?g=040XX00US24 040xx00us24.
${ }^{10}$ Projected lifetime earnings are based on the sum of median quarterly wages for individuals through the age of 65 for each education level.
${ }^{11}$ For example, Baum, S, Ma, J. \& Payea, K. (2013). Education Pays 2013: The benefits of higher education for individuals and society. College Board.
${ }^{12}$ The full reporting series can be found at https://mldscenter.maryland.gov/CenterReports.html under the section: Annual Report on the Workforce Outcomes of Maryland Public High School Graduates.
${ }^{13}$ See Technical Appendix. Wage Data.
${ }^{14}$ See Technical Appendix. NAICS Groupings.
${ }^{15}$ Maryland Department of Labor. (2022). Maryland - Second Quarter 2022 - Industry Series - Maryland's Quarterly Census of Employment and Wages (QCEW) - OWIP. https://www.dllr.state.md.us/Imi/emppay/tab1md22022.shtml
${ }^{16}$ U.S. Bureau of Economic Analysis. (n.d.). SAGDP2N Gross Domestic Product (GDP) by State. https://apps.bea.gov
${ }^{17}$ Baum, S., Pender, M. \& Welch, M. (2019). Education Pays 2019: The benefits of higher education for individuals and society. College Board.
${ }^{18}$ Glasmeier, A. (2021). Living Wage Calculator. Massachusetts Institute of Technology. https://livingwage.mit.edu/states/24/locations
${ }^{19}$ MLDS Center. (2020). Educational and Workforce Outcomes for Associate's Degree Graduates from Maryland's Community Colleges. Baltimore, MD: Maryland Longitudinal Data System Center. https://mldscenter.maryland.gov/egov/publications/CenterReports/AssociatesDegreeGraduates/Associat esDegreeReport April2020.pdf
${ }^{20}$ 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.
${ }^{21}$ 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.
${ }^{22}$ 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.
${ }^{23}$ 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.
${ }^{24}$ 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.
${ }^{25}$ 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.
${ }^{26}$ 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 2 for a discussion on FARMS.
${ }^{27}$ 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

