



Office of Institutional Research & Effectiveness

AA Degree Recipients in the Maryland Economy:

Employment Sectors, Wages, and Matters of Equity

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Source: Maryland Longitudinal Data System Center (MLDSC)

Primary Authors

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Introduction and Context

Three transformational focus areas guide the current work of refreshing the strategic plan: access, completion, and post-completion success. The post-completion success of our graduates serves as the context for this research exploration. Heretofore, data on post-completion success as it pertains to the employment of our graduates has been elusive and unsatisfactory. We have had MHEC surveys three years from graduation that have garnered low response rates. EMSI data, while very useful, is more inferential than empirically precise about finding actual MC graduates working in real jobs in the Maryland economy. Given this, the OIRE identified another source: the Maryland Longitudinal Data System Center (MLDSC). The MLDSC was created as a state agency about 8-9 years ago. It was designed to help the state answer research questions of a longitudinal nature concerning the public educational pipeline in the state, from pre-K through higher education, and subsequent translation into employment in the Maryland economy. The MLDSC has been getting yearly data feeds from MSDE, MHEC, and DLLR and accessing some other pockets of data, e.g., MVA registration information. In sum, MHEC provides the MLDSC with all our fiscal year MC graduate data. The MLDSC can then link graduate data to wage record data provided by the DLLR. The MLDSC is becoming an essential source for this kind of information and has become a data source for several MHEC Performance Accountability Report (PAR) indicators in the last few years.

MLDSC Data Limits

No database is entirely flawless. While the MLDSC links graduates to actual wage records in the Maryland economy, there are also weaknesses or “holes” from our vantage point. First, these wage records are only for Maryland, and given MC’s proximity to Washington D.C. and Virginia, no doubt many of our graduates work in these other jurisdictions. Second, federal and military employment is also missing at present. The MLDSC says they are very close to being able to incorporate data from these areas, but certainly not for our data request. Finally, the MLDSC can only use HEGIS program codes for our graduates, although using CIP program codes is right around the corner. CIP codes are indeed the coin of the realm in higher education these days.

OIRE Data Request

To start this research exploration, OIRE asked the MLDSC to use AA graduates from the top 10 producing HEGIS programs from FY2015 through FY2019. The decision was made to look at graduates pre-pandemic before educational and occupational environments were significantly disrupted. There

were 10,792 AA recipients in the top 10 HEGIS programs in this period, representing just about 75% of all AA recipients. It is an excellent cross-section of our degree production and provides enough cases for the MLDSC to parse by race/ethnicity and gender (they have data suppression protocols). We asked the MLDSC to tell us where our graduates were found in the Maryland economy one, three, and five years after graduation and what they earned. We also asked if they could tell us the Maryland county where our graduates worked. Unfortunately, they did not have the employer's county but could use the MVA registration address of our graduates as a proxy. They further noted that given their access to MVA data, they would only be able to use MC graduates from FY2017 through FY2019 for this part of the request. Dr. Ann Kellogg, our MLDSC liaison housed within MHEC, sent us the data we requested in a spreadsheet with notable caveats related to the data. This document serves as a summary of that data.

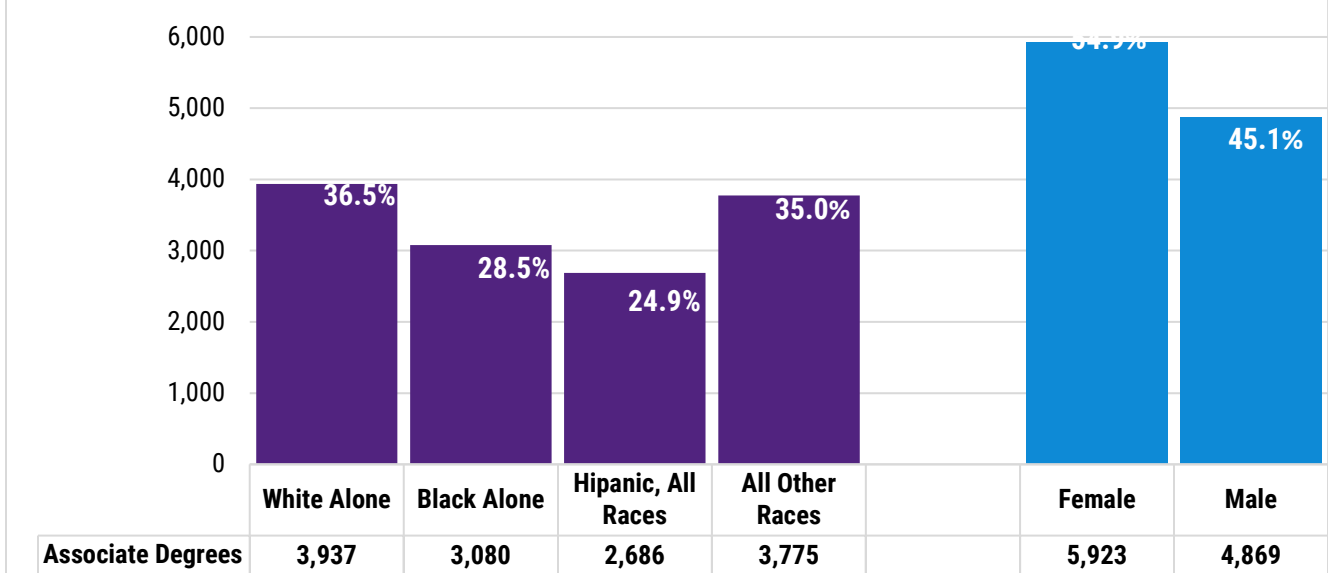
Composition of Associate Degree Recipients FY2015-FY2019

Over five years, between August 2014 and May 2019, Montgomery College awarded 10,792 associate degrees to its graduates, with some earning more than one award. As such, the number of associate degrees is higher than the number of unique or unduplicated graduates. Hence, 9,565 individual students earned 10,792 associate degrees in this time frame.

Data on race is reported independent of ethnicity, therefore values summed across race groups do not equal the total. All graduates were assigned to one racial group and one ethnic group. Assignment to racial and ethnic groups were made based upon the methodology used by the U. S. Census for its Current Population Survey (CPS) and the U.S. Bureau of Labor Statistics (BLS) which report race independent of ethnicity for individuals who identify with a single race but may be of any ethnicity. Individuals identifying with two or more races of any ethnicity are reported in the category *Other Races*. For the purpose of this report, data by race are in three general categories: black alone, white alone, and all other races which includes Hispanic. In addition, there is a separate data set for Hispanics graduates regardless of race.

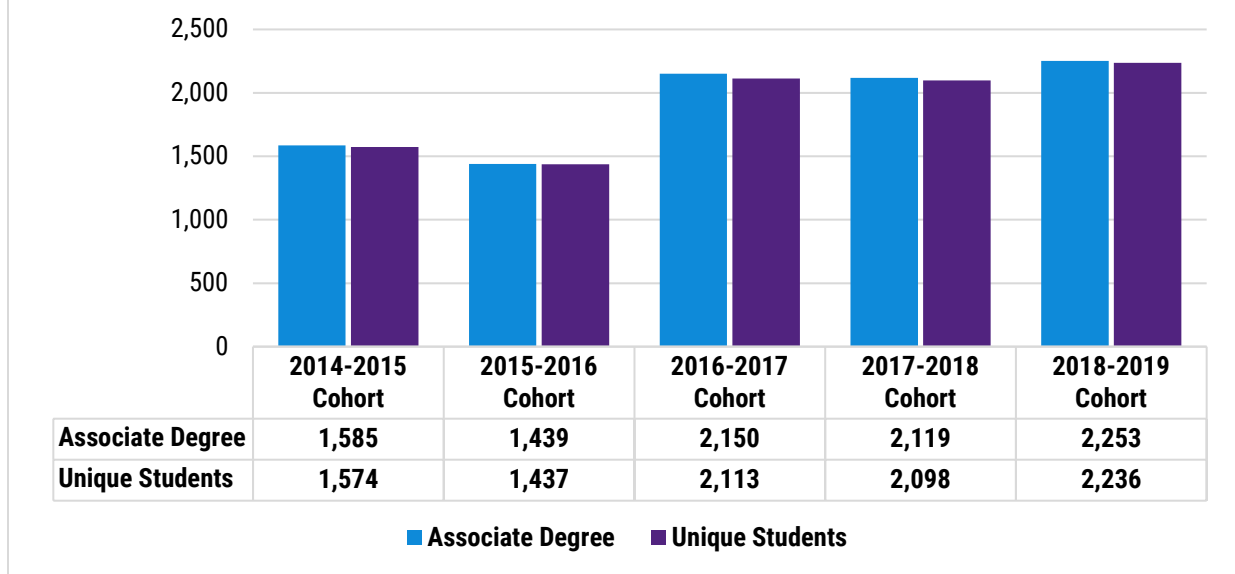
Of the 10,792 associate degrees that were awarded from FY2015 to FY2019, (Figure 1) more than 3,937 or 36.5% were awarded to graduates self-identified as white; 3,080 or 28.5%, were awarded to graduates self-identified as black; 3,775 or 35.0% were awarded to graduates in all other combined race groups. Hispanic graduates of all races were awarded 2,686 or 24.9% of the associate degrees. In addition, a notably larger number and percentage of associate degrees were awarded to female graduates (5,923 or 54.9%) compared to their male counterparts (4,869 or 45.1%).

Figure 1. Number of Associate's Degrees Conferred to Montgomery College Graduates over a 5-Year Period: August 2014 to May 2019



The number of conferred associate degrees by the fiscal year cohort increased from 1,585 for the 2014-2015 cohort to 2,253 for the 2018-2019 cohort – an increase of 42.1%. As can be noted in Figure 2, the number of associate degrees is higher than the number of graduates, which indicates that some graduates earned more than one award.

Figure 2. Number of Associates Degree Conferred and Number of Graduates from August 2014 to May 2019



The award data Montgomery College requested from MLDS is comprised of the top 10 producing AA programs based on HEGIS codes as defined by the Maryland Higher Education Commission. The program descriptions are listed in Table 1 and Table 2. The highest number and percentage of awards over the five years were in General Studies Transfer (5,066 or 46.9%) and Business (2,116 or 19.6%) and this was consistent across race groups. These two programs accounted for over two-thirds or 66.5% of the awards within these designated HEGIS areas.

A much larger number of female graduates earned associate degrees in general studies, while male graduates slightly outnumbered females in associate degrees in business. Another observation: there were more differences in conferred awards between female and male graduates than between graduates' race (e.g., Computer Science and Technology, Cybersecurity, and Nursing). Male and female degree recipients were drawn to different program areas of interest.

**Table 1: Associate Degrees Conferred by HEGIS
August 2014 to May 2019
Montgomery College**

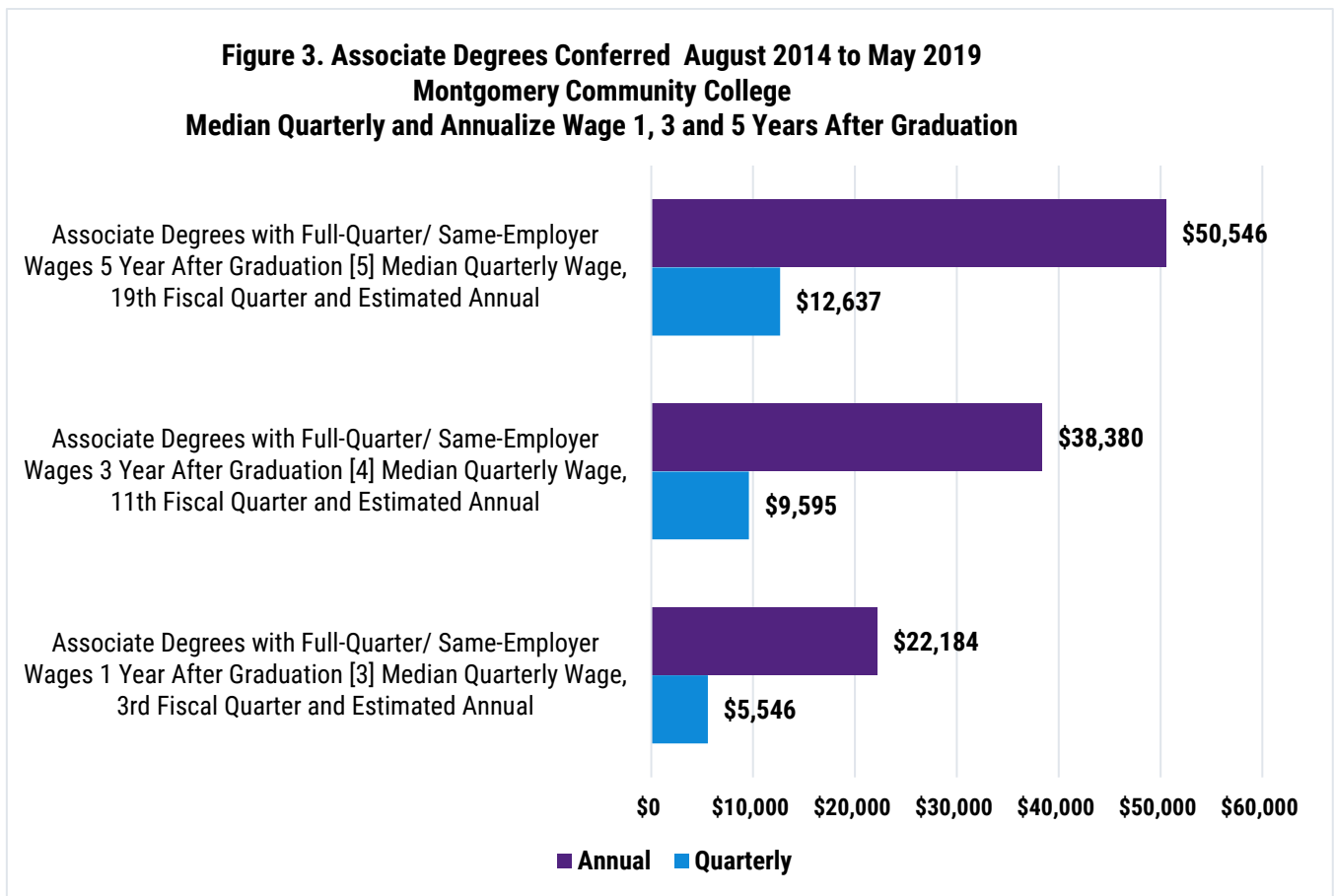
| Description | Associate Degrees | White Alone | Black Alone | All Other Races | Hispanic All Races | Female | Male |
|---|-------------------|--------------|--------------|-----------------|--------------------|--------------|--------------|
| Arts and Science Transfer (491001) | 470 | 192 | 104 | 174 | 148 | 264 | 206 |
| Science (491004) | 733 | 225 | 242 | 266 | 151 | 434 | 299 |
| Engineering Science (494001) | 508 | 150 | 171 | 187 | 91 | 109 | 399 |
| General Studies Transfer (495001) | 5,066 | 1,985 | 1,458 | 1,623 | 1,311 | 3119 | 1947 |
| Elem Educ/Elementary Special Educ(AAT) (496011) | 178 | 108 | 18 | 52 | 53 | 146 | 32 |
| Business (497001) | 2,116 | 695 | 540 | 881 | 620 | 1029 | 1087 |
| Computer Sciences and Technology (498001) | 573 | 141 | 181 | 251 | 83 | 140 | 433 |
| Cybersecurity (510101) | 274 | 79 | 89 | 106 | 50 | 54 | 220 |
| Nursing (520801) | 682 | 280 | 240 | 162 | 107 | 574 | 108 |
| Management of Construction/ Architectural/ Construction Technology (530401) | 192 | 82 | 37 | 73 | 72 | 54 | 138 |
| Total | 10,792 | 3,937 | 3,080 | 3,775 | 2,686 | 5,923 | 4,869 |

**Table 2: Associate Degrees Conferred by HEGIS
August 2014 to May 2019
Montgomery College**

| Description | Associate Degrees | White Alone | Black Alone | All Other Races | Hispanic All Races | Female | Male |
|---|-------------------|---------------|---------------|-----------------|--------------------|---------------|---------------|
| Arts and Science Transfer (491001) | 4.4% | 4.9% | 3.4% | 4.6% | 5.5% | 4.5% | 4.2% |
| Science (491004) | 6.8% | 5.7% | 7.9% | 7.0% | 5.6% | 7.3% | 6.1% |
| Engineering Science (494001) | 4.7% | 3.8% | 5.6% | 5.0% | 3.4% | 1.8% | 8.2% |
| General Studies Transfer (495001) | 46.9% | 50.4% | 47.3% | 43.0% | 48.8% | 52.7% | 40.0% |
| Elem Educ/Elementary Special Educ(AAT) (496011) | 1.6% | 2.7% | 0.6% | 1.4% | 2.0% | 2.5% | 0.7% |
| Business (497001) | 19.6% | 17.7% | 17.5% | 23.3% | 23.1% | 17.4% | 22.3% |
| Computer Sciences and Technology (498001) | 5.3% | 3.6% | 5.9% | 6.6% | 3.1% | 2.4% | 8.9% |
| Cybersecurity (510101) | 2.5% | 2.0% | 2.9% | 2.8% | 1.9% | 0.9% | 4.5% |
| Nursing (520801) | 6.3% | 7.1% | 7.8% | 4.3% | 4.0% | 9.7% | 2.2% |
| Management of Construction/ Architectural/ Construction Technology (530401) | 1.8% | 2.1% | 1.2% | 1.9% | 2.7% | 0.9% | 2.8% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

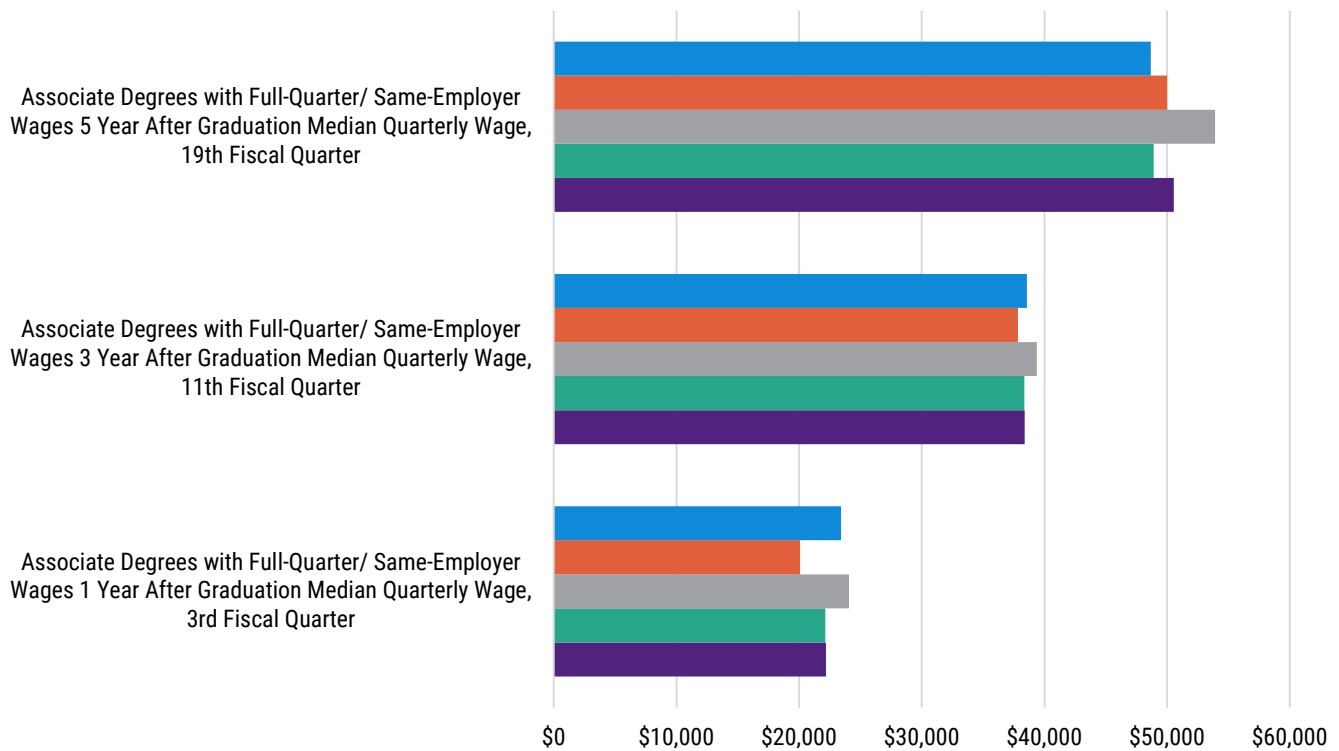
MLDSC Wage Data

Figure 3 provides median quarterly and annualized wages (quarterly wages x 4) for associate degree recipients with stable employment, i.e., employed with the same employer one year, three years, and five years after graduation. The data show considerable growth in annualized median wages for associate degree recipients from the top 10 HEGIS programs within five years of graduation. Overall, the median annualized wage for all graduates in the first year after graduation was \$22,184. Three years after graduation, the median annualized wage increased to \$38,380, an increase of 73%. Five years after graduation, the median annualized wage increased to \$50,546, an increase of 128%. The wage data reflect the median pay in the distribution of salaries, which indicates that there were higher and lower wages at either end of the continuum.



Graduates identified as black show the highest annualized median income in all three snapshots (Figure 4), while graduates identified as white show the lowest median income in all three snapshots. The differential in median wage ranges from \$1,912 one year after graduation to \$5,008 five years after graduation. Differences in wages could be a function of job industry.

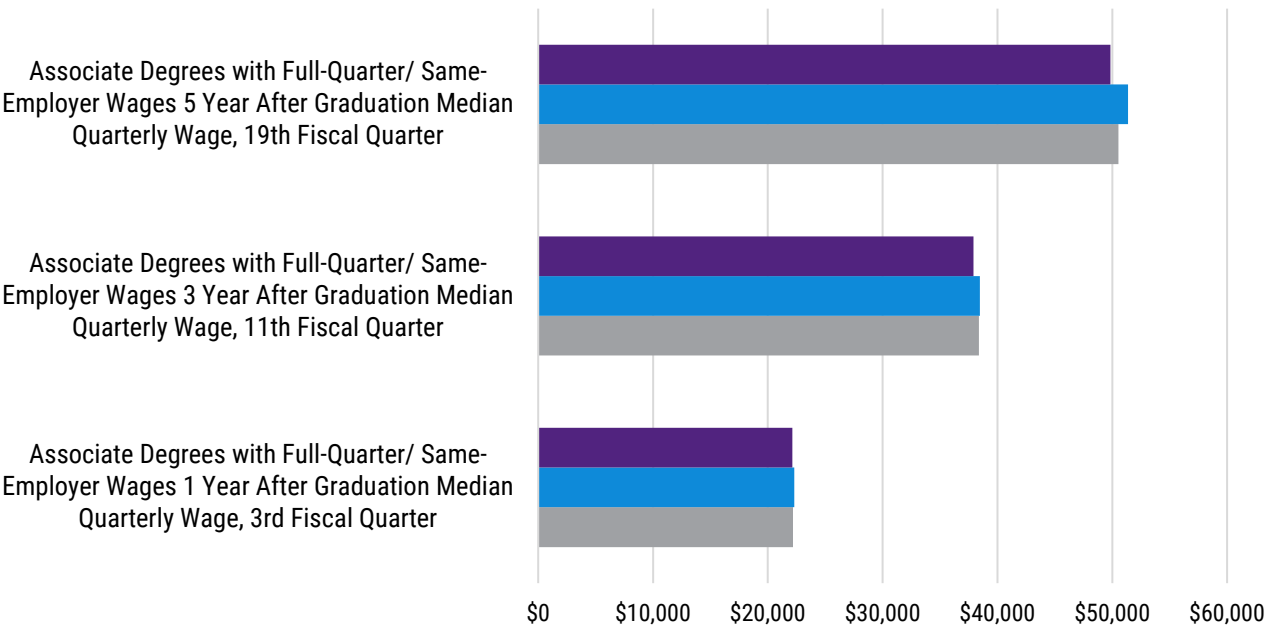
**Figure 4. Associate Degrees Conferred August 2014 to May 2019
Montgomery Community College by Race
Estimated Annual (Median Quarterly Wage x 4)**



| | Associate Degrees with Full-Quarter/ Same-Employer Wages 1 Year After Graduation Median Quarterly Wage, 3rd Fiscal Quarter | Associate Degrees with Full-Quarter/ Same-Employer Wages 3 Year After Graduation Median Quarterly Wage, 11th Fiscal Quarter | Associate Degrees with Full-Quarter/ Same-Employer Wages 5 Year After Graduation Median Quarterly Wage, 19th Fiscal Quarter |
|---------------------|---|--|--|
| Hispanic, All Races | \$23,412 | \$38,572 | \$48,658 |
| All Other Races | \$20,072 | \$37,848 | \$50,006 |
| Black Alone | \$24,060 | \$39,388 | \$53,916 |
| White Alone | \$22,140 | \$38,370 | \$48,908 |
| Overall | \$22,184 | \$38,380 | \$50,546 |

Considerable growth is also noted in annualized wages by gender (Figure 5). Female graduates had a slightly higher median income in all three snapshots than their male counterparts. The differential in wages range from \$174 one year after graduation to \$1,524 five years after graduation. The differential between genders is much smaller than the differential between race groups.

**Figure 5. Associate Degrees Conferred August 2014 to May 2019
Montgomery Community College by Gender
Estimated Annual (Median Quarterly Wage x 4)**

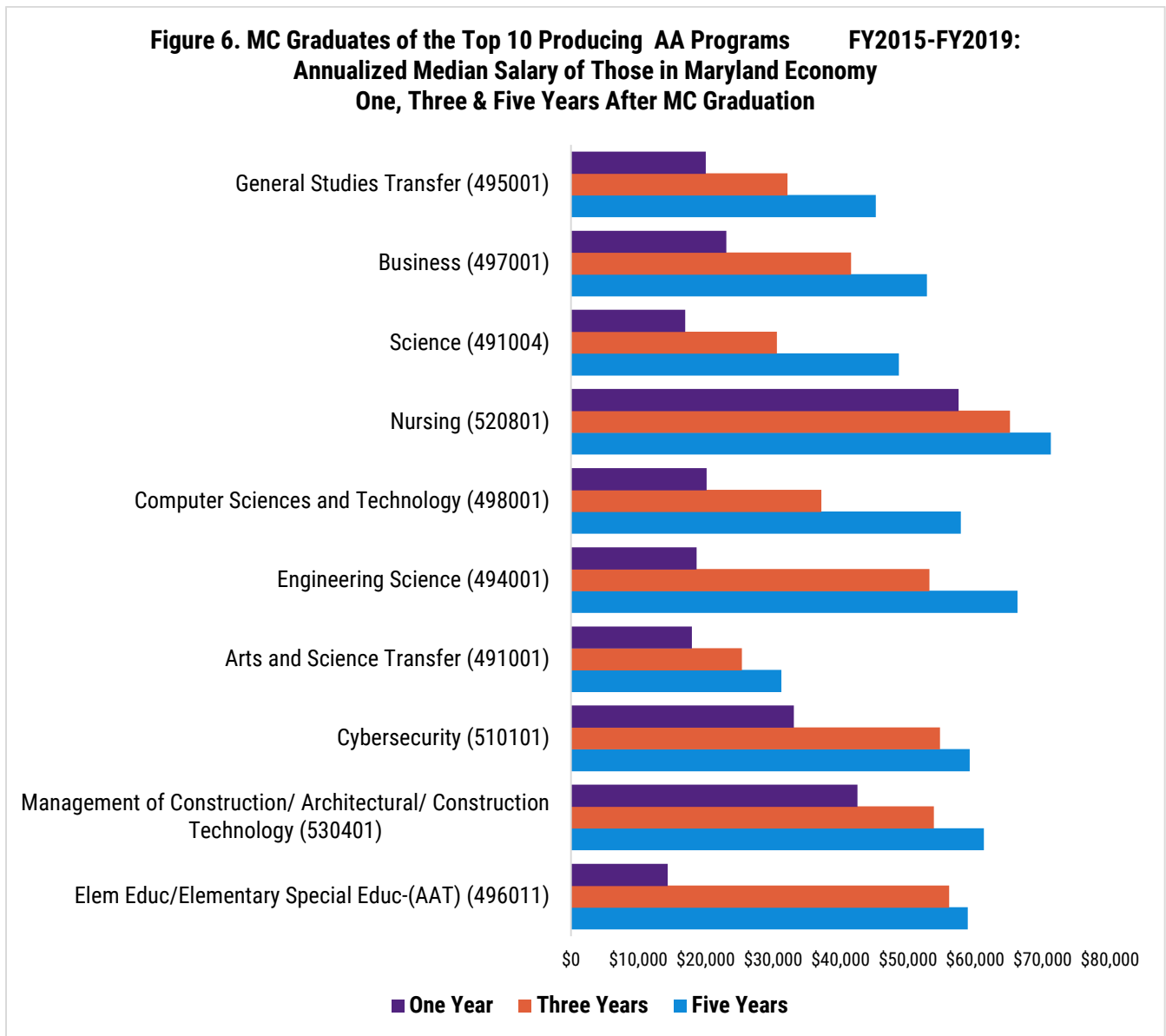


| | Associate Degrees with Full-Quarter/ Same-Employer Wages 1 Year After Graduation Median Quarterly Wage, 3rd Fiscal Quarter | Associate Degrees with Full-Quarter/ Same-Employer Wages 3 Year After Graduation Median Quarterly Wage, 11th Fiscal Quarter | Associate Degrees with Full-Quarter/ Same-Employer Wages 5 Year After Graduation Median Quarterly Wage, 19th Fiscal Quarter |
|-----------|--|---|---|
| ■ Male | \$22,140 | \$37,902 | \$49,842 |
| ■ Female | \$22,314 | \$38,456 | \$51,366 |
| ■ Overall | \$22,184 | \$38,380 | \$50,546 |

■ Male ■ Female ■ Overall

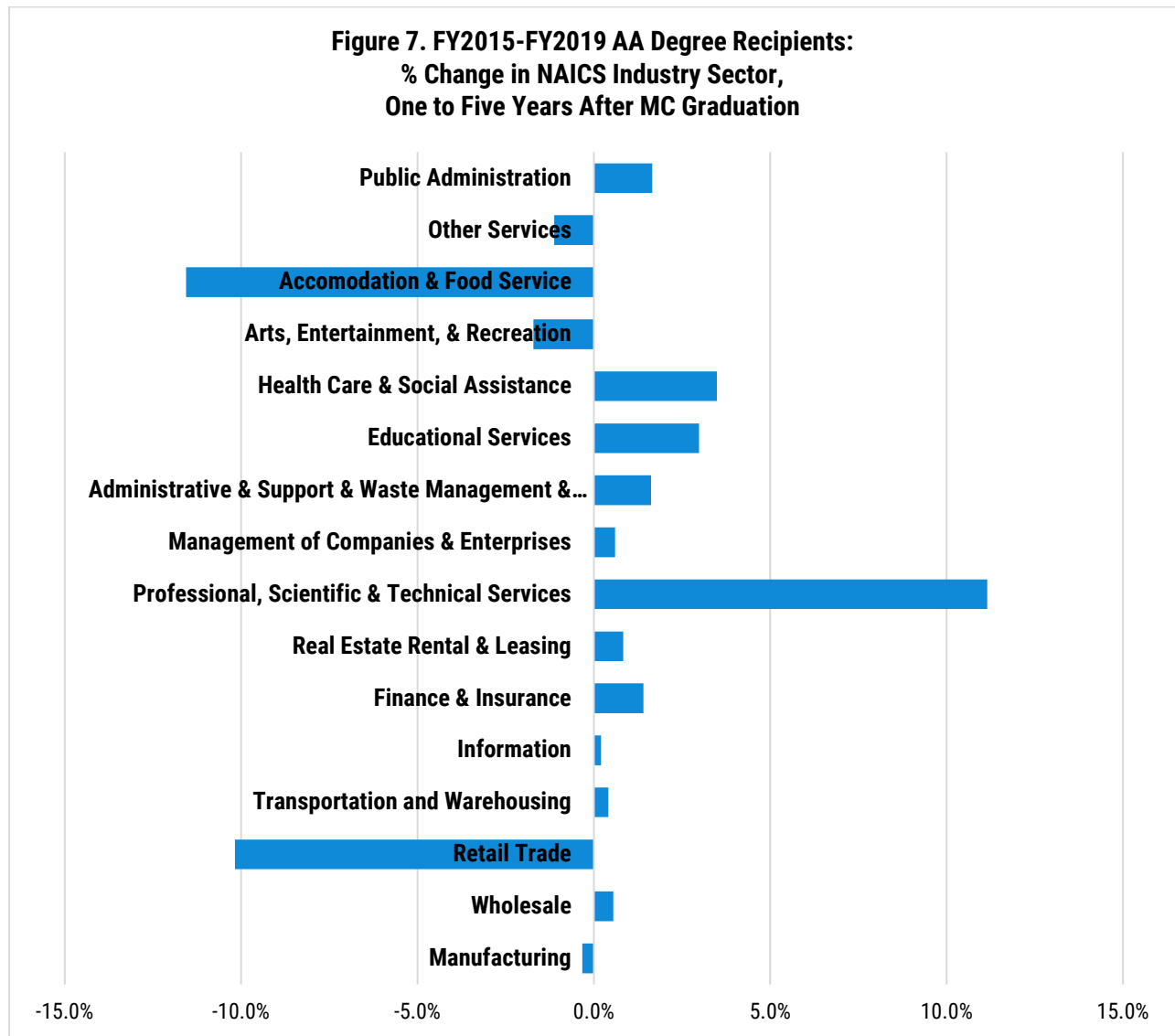
Annualized Median Salary by HEGIS Program

As you would hope, AA graduates from each top 10 program demonstrate appreciable salary growth from one to five years after graduation from MC (Figure 6). Not surprisingly nursing and construction graduates can enter immediate employment in their chosen fields. By year 5, nursing, engineering science, construction management, and computer sciences and technology graduates have the highest salaries.



Location in Maryland Economy

The MLDSC uses Maryland employment data from the Maryland Department of Labor & Licensing. The NAICS national industry classification scheme categorizes employment sectors. From one to five years after graduation, our graduates find gainful employment in their chosen majors, leaving jobs in the food service and retail trade behind (Figure 7). More than likely, these were part-time as they continued their schooling. Most notable is the significant growth in “professional, scientific, & technical services”, followed by “health care & social assistance” and “educational services.” MC alums are contributing appreciably to the most critical sectors of the Maryland economy.

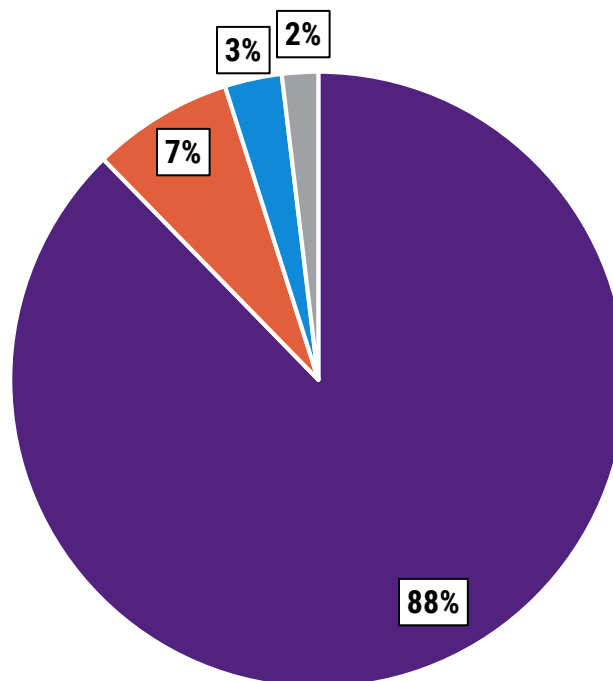


Living & Working One Year Out

Using MVA registration data, for the FY2017-FY2019 graduates one year after graduation, **nearly 9 in 10** AA recipients lived and worked in Montgomery County (Figure 8). As a result, they are essential to the county and state economies. Contributing to the county's tax base, they are citizen role models for other county residents.

**Figure 8. MC AA Degree Recipients 2017-2019, One Year Out and Working In the Maryland Economy (N=6,447):
Residence Location Using MVA Registration Data**

■ Montgomery County ■ Prince George's County ■ Frederick County ■ All Other Counties



Pertinent Takeaways

1. MLDSC data show that MC AA graduates are doing well in the Maryland economy, working in economic sectors of great importance to the county and state.
2. One year out, most are living and contributing to Montgomery County in many ways. Most are working part-time and attending school.
3. After leaving us, they continue to make progress with the education and experience needed in their fields to earn higher wages, as shown in the considerable increase in income in five years.

4. In terms of equity, in spite of some noted differences in income, primarily by program areas, all of our graduates do better, regardless of race, ethnicity, and gender. It goes without saying that some industries, e.g., computer technology, engineering, and nursing pay higher wages than others.
5. It is plausible that data such as these can be used as a marketing tool, as well as be informative to our Board of Trustees and the County Council.