



Tab 23

2020 Equity in Missouri Higher Education Report

Coordinating Board for Higher Education
December 9, 2020

BACKGROUND

In 2019, the Missouri Department of Higher Education and Workforce Development began the process of undertaking a multi-year research effort to identify equity gaps and disparities in postsecondary educational attainment in an effort to meet the “Big Goal” of having 60 percent of Missourians hold a high-quality postsecondary credential by 2025. The first report in the series, released last year, focused on access to and progress through public postsecondary education in Missouri. This year’s report is centered on postsecondary attainment and completion, and workforce outcomes—including wages—of recent graduates.

This research agenda aligns to goal 1.5 in *The Blueprint for Higher Education*, which commits the state to reduce inequities in higher education by race/ethnicity, socioeconomic status, gender, and disability, in addition to creating a postsecondary faculty that proportionately reflects the diversity and demographic makeup of the state.

CURRENT STATUS

This report outlines inequities and disparities among subpopulations of the state—race/ethnicity, gender, age, income, parental education, and geographic location—in terms of postsecondary attainment and completions, and workforce outcomes for recent graduates. The data analyzed reveal the most persistent equity gaps occur along racial/ethnic lines, and by parental income levels. The report was released during the Bridges to Success Equity Week Series on October 26, 2020, and DHEWD staff presented the data and research findings. The following are highlights from the *2020 Equity in Missouri Higher Education report*.

Postsecondary Attainment

To measure attainment and the state’s progress toward the Big Goal, DHEWD staff used American Community Survey (ACS) annual estimates for working-age adults between 25 and 64 to capture overall educational attainment. This calculation includes not only those who earned an associate or baccalaureate degree, but also estimates of postsecondary certificate attainment. Since 2011, Missouri’s overall postsecondary attainment has steadily increased, resulting in a 9.8 percent increase between 2011 and 2018, the most recent year available. However, when broken out by demographic category, these gains have not been equal across all populations throughout the state.

- Data indicate that overall attainment rates across all racial and ethnic categories are increasing. However, people of color, especially Black and Hispanic, have attainment rates well below the statewide average.
- Women tend to have higher education attainment levels than men, but men are more likely to earn graduate and professional degrees than women, which may, in part, help explain the gender disparities in postsecondary faculty that appeared in the *2019 Equity Report*.
- Those living in urban regions are nearly 1.5 times more likely to have a postsecondary credential as those in rural regions. Those in rural areas are more likely to have a high school diploma or equivalent as the highest level of education, while those in urban areas are more likely to have a baccalaureate degree.
- Individuals at or below 200 percent of the poverty level are over three times as likely to have not completed high school. Those from lower income levels are also over three times as likely to have started college but left before earning a certificate or credential.

Postsecondary Completions

The number of undergraduate completers at Missouri's public postsecondary institutions has increased over 28 percent between 2009 and 2018, ensuring statewide progress to the Big Goal. However, when disaggregating completions data by demographic information and other factors, these gains have not been distributed equally, and more work is needed to ensure every Missourian is empowered with the skills and education needed for success.

- Compared to their white peers, Black students were four times less likely to graduate on-time at public two-year institutions and almost 2.5 times less likely to graduate on-time at public four-year institutions. While Hispanic students had the largest increase in graduation rates at the two-year sector, they only saw slight improvements at the four-year sector.
- Black Missourians are also underrepresented when further disaggregating data by program of study and degree type; Black students were vastly underrepresented in STEM and Education programs, and comprised around seven percent of all associate and baccalaureate degree completers – half the rate of the state's demographic makeup (around 14 percent).
- Parental income is a strong predictor of postsecondary success; the lower the household income, the less likely a student is to graduate. Within both the two- and four-year sectors, low-income students completed degrees on time at half the rates of higher-income students.
- Students of color and low-income students were more likely to complete a degree at open-enrollment institutions; as selectivity levels increase, the proportion of low-income and black completers decreased.
- Parental education levels appear to be a factor in graduation rates; students with two parents who completed college were more likely to graduate than those with only one parent or first-generation students.
- Age appears to be a factor in graduation rates at four-year institutions but not at two-year institutions. Unlike adults who attended a two-year institution, those who attended a four-year institution were nearly five times less likely to complete on time as their younger peers, and these gaps persisted when looking at graduation within 150 percent of time.

Workforce Outcomes

While the employment rate for recent graduates, pre-COVID-19, remained fairly constant, with decreases coming from out-of-state students, the median earnings for graduates within the first year have climbed steadily, from around \$19,000 annually in AY2009 to just over \$26,000 annually in AY2018. These statewide trends hold up when disaggregated by key demographic characteristics, but are not even across the board.

- The median earnings for black graduates increased by 17.8 percent for AY2018 graduates, but increased 38.5 percent for white graduates. In fact, the annual median earnings for white graduates is nearly \$3,500 greater than those for black graduates.
- Students at the poverty level earned only 65 percent of the wages of their higher income peers in AY2009. For graduates in AY2018, the median wages for those from higher income levels was annually \$7,000 greater than those at the poverty level, and \$4,000 greater than those at or below 200 percent of poverty.
- Over the past ten years, females have held a more than four percent employment advantage over their male counterparts. However, the median wages for males increased by 45 percent from AY2009 and

AY2018, but only around 29 percent for females: in AY2018, the difference in annual median earnings was around \$2,500.

NEXT STEPS

As part of its equity work and in recognizing the diverse needs across the state of Missouri, the DHEWD is collaborating with the Missouri Department of Elementary and Secondary Education (DESE) and the business community to create the Missouri Equitable Access, Success, and Engagement Framework (MoEASE). Recognizing each region of the state is best able to determine its largest equity barriers and overcome inequities as a community, this initiative will engage local communities in evaluating, analyzing, and implementing strategies to close educational gaps. Additionally, DHEWD is undertaking an internal audit to uncover what policies, procedures, and practices may contribute to these opportunity gaps.

Inequities that contribute to differences in enrollment and completion rates were heightened due to the events of 2020. Missouri state government, working together as partners with higher education institutions, must do more to support students as they work to complete a quality postsecondary credential, which include: collaborating between state agencies to identify gaps in meeting student needs; identifying best practices throughout the nation to address education inequities; and conducting statewide convenings (virtually, as need be) to share information, create networks, and establish opportunities for collaboration.

RECOMMENDATION

This is an information item only.

ATTACHMENT

- Equity Report 2020



**EQUITY IN
MISSOURI
HIGHER
EDUCATION
REPORT
2020**



EQUITY
MISSOURI HIGHER EDUCATION



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

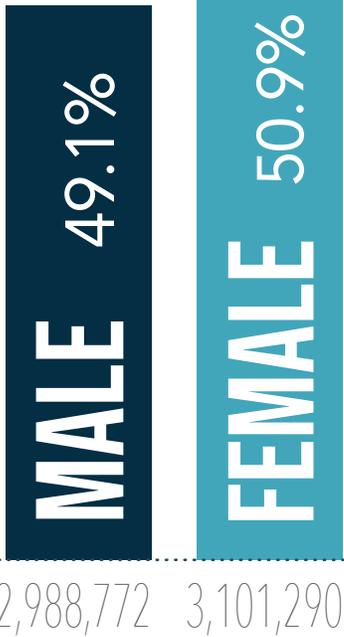
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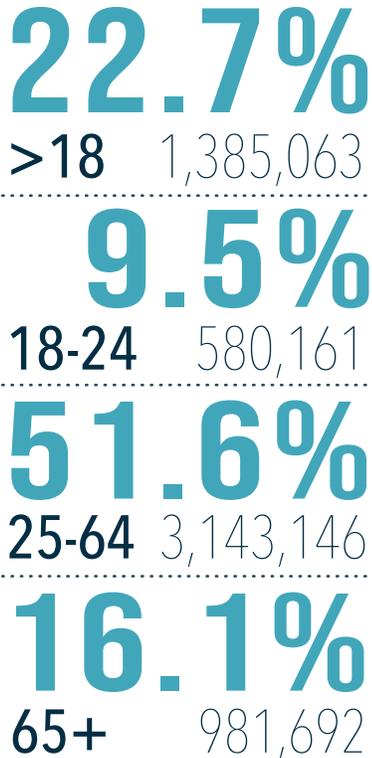
DEMOGRAPHICS OF MISSOURI

2014-2018 ACS 5-YEAR ESTIMATES

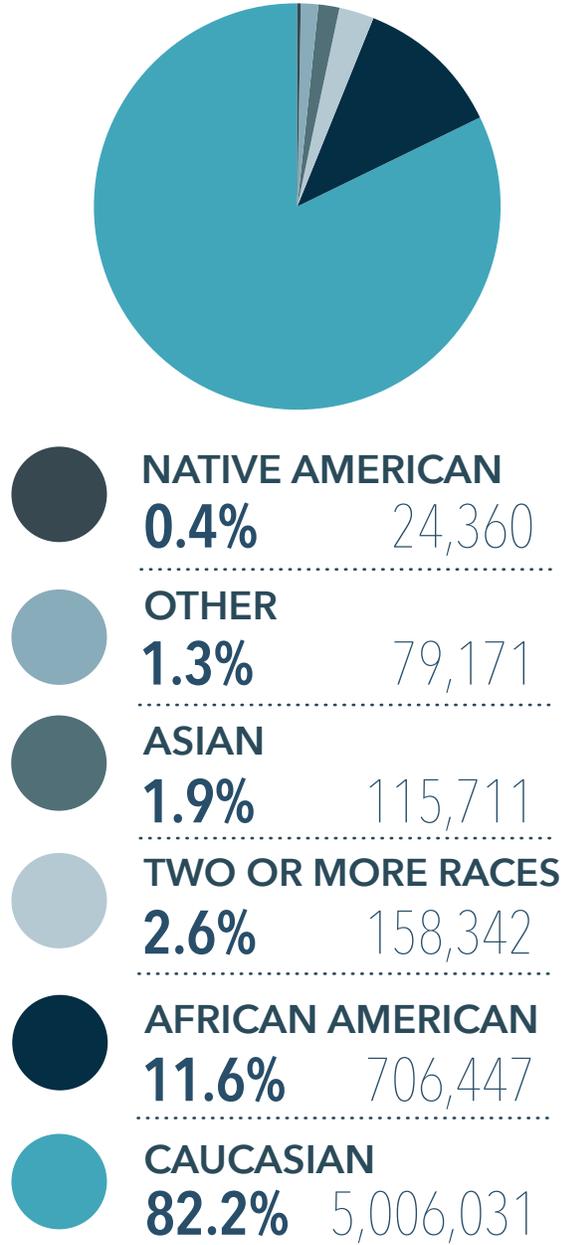
GENDER



AGE



RACE



RESIDENTIAL LOCATION



ETHNICITY





LETTER FROM KIONA SINKS

SOCIAL & CIVIC INNOVATOR

Dear Education Leaders,

Central Methodist University's Spring 2018 issue of *The Talon* included the following remarks from university president Dr. Roger Drake about a graduating student: "She didn't just make it to campus – she soaked the campus in. As if the campus was a wet cloth, she wrung every last drop of benefit from CMU. She became a campus leader, a driving force resulting in our students of color feeling supported and treasured on our campus." That student was me. My story teaches many leaders within higher education that long-term institutional success depends on representation in the community at postsecondary institutions.

College simply was not promised before my arrival to Central Methodist University in Fall 2014. I reflect back to moving from low-income housing into my first dorm, filling out my first FAFSA, picking my first semester of classes for college, and trying to work toward attaining financial stability. Not knowing how to implement those foundational college necessities was very difficult because I did not have the expected guaranteed resources. Mentors, friends, and extended family invested more time helping me overcome challenges, than time spent actually picking a college.

Luckily the odds were in my favor because failure was not an option. I knew I always wanted to attend college, experiencing the excitement of decision day or having the "big moment" of campus visits. Wanting to seek and create more opportunities, to elevate my future path in society, motivated and inspired me to choose college. Understanding the significance and importance of education seemed so small, when so many loomed large in my daily in my life; coming from a neighborhood that was located in low-income housing, I was just surviving day to day.

As a woman of color, it's been critical for my personal growth to acknowledge over the years that many mentors, the majority of them being women, have shaped my perspective; leading me to success and changing the outcomes of my life. From the time I vocalized to my counselor and mentors about wanting to attend college, they worked on my behalf to ensure it became reality.

I look back knowing I made the right decision, not just wanting more education, but allowing college to shape my life experiences and cultivate my heart, opening me up to servant leadership. In these most recent times where social injustice concerns are heightened, I find inspiration from Kansas City legends like Buck O'Neil who dedicated his life towards preserving Black baseball, and fighting for equality while overcoming so much during his time here in Kansas City. My story shows that success in part depends on equal access at postsecondary institutions.

Participating in this year's Equity Week in Missouri is more important than ever before. I am honored to share my journey of hope, and showing the work that others have done, creating more equitable opportunities, has permanently moved my success onward. We all can agree there has never been a moment more important in our country surrounding diversity, inclusion, and moving policy into practice to ensure equal accessibility towards a better future. Many of you have already used education as a tool to help spark the next generation of young people, as they transform their lives, and contribute back to society, while creating stronger foundational change. May we all know we all have something to contribute to make our communities better. This moment will illustrate less about us and more about what's good civically, socially, and morally in our respective fields. I have hope in our leaders within education to create, mobilize, and connect policy towards equity.

In Community,

Kiona Sinks

MISSOURI EQUITY REPORT 2020

INTRODUCTION

In Missouri and across the nation, individuals are struggling with complex issues surrounding questions of systemic inequities and social unrest. This nation is at a pivotal time in its history to not only confront these issues, but to also make lasting changes for future generations. Missouri's postsecondary institutions are rising to the challenge of evaluating how they serve all students, facing uncomfortable truths, and making substantial changes to advance educational equity. But even with these improvements, there is much to achieve before postsecondary education may be considered equitable for all.

Last year, the Missouri Department of Higher Education & Workforce Development (MDHEWD) released the 2019 Equity in Missouri Higher Education Report, focused on access to and progress through public postsecondary education. The report reinforces that Missouri must eliminate educational disparities for underserved and underrepresented populations to achieve its Big Goal of 60 percent of working-age adults holding a high-quality postsecondary credential by 2025. This second report in the equity series advances this work by untangling postsecondary completion barriers among the state's diverse population.

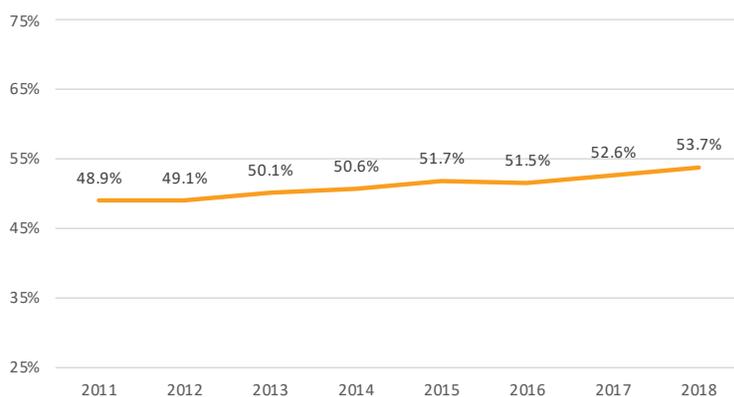
The focus of this 2020 Equity Report hinges on a central question: Is postsecondary attainment improving around the state? The answer drawn from the analysis is yes, but not for all populations. Missouri's overall postsecondary credential completion increased between 2011 and 2018 (Figure 1). However, when analyzing Missouri's diverse population and student body, the data show clear differences between populations. Not all Missourians are achieving the same postsecondary success or workforce outcomes. This report utilizes trend data to highlight attainment inequities in undergraduate programs and will focus on the major findings for each of these demographics:

- Race/ethnicity
- Geographic location
- Parental income level
- Parental Education level
- Age
- Gender

Educational inequities vary among populations; it is important to note that many individuals fall into more than one population, meaning those individuals may encounter the distinct barriers of each population they fit into. Additionally, this report highlights the largest disparities for each population, starting with the subpopulations most negatively affected by current education inequities. It is worth noting that in the analysis of each metric within this report, there are some subpopulations that consistently perform lower in relation to other groups. Opportunity gaps in terms of race/ethnicity and income levels are consistently larger, relatively speaking, than the differences in gender or for those between rural and urban students.

Analyzing data is the first step to understanding these complex issues and is critical to developing solutions to ensure every Missourian is empowered with the skills and education needed for success. The goal of this report is for postsecondary institutions, stakeholders, and policymakers to utilize these findings to analyze the disparities within campuses and address equity issues so that measurable positive results are realized.

Figure 1: Percent of Working-Age Missourians (Age 25-64) with a Certificate or Above



Source: ACS 1-year estimates

CRITICAL FINDINGS

- Missouri credential completion increased 28 percent from 2009 to 2018.
- Graduation rates of low-income students increased, regardless of sector or selectivity.
- The completion gap persisted between low- and high-income students and between students of color, particularly Black and Hispanic students, and their White peers.
- Black students were vastly underrepresented in graduates from STEM and Education programs.
- There are substantial gaps in the wage premium between students from low- and high-income backgrounds, as well as earnings of Black and Hispanic graduates in comparison to White graduates.
- Income levels and parental education levels influence student success much more than geography, regardless of whether students are from rural or urban areas.

MISSOURI EQUITY REPORT 2020

METHODOLOGY

Information on Missouri's population profile primarily comes from the U.S. Census Bureau's American Community Survey (ACS), which collects vital population and housing information. The state data include the Enhanced Missouri Student Achievement Study (EMSAS) records and the Missouri Financial Aid database (FAMOUS). EMSAS data, collected on an annual basis, includes student record level data for Missouri's public university and college fall enrollments, term completions, and credential completions.

Where possible, MDHEWD staff used methodologies and definitions similar to the ACS data, including race/ethnicity and sex, to standardize data.

Postsecondary Attainment

To measure attainment and the state's progress toward the Big Goal, MDHEWD staff used ACS annual estimates for working-age adults between the ages of 25 and 64 to capture overall **educational attainment**. This calculation included not only those who earned an associate or baccalaureate degree, but also estimates of postsecondary certificate attainment.¹

Attainment data covers the years 2011 to 2018, and estimates those living in the state with a postsecondary credential, regardless of where the degree was earned. This includes those who earned degrees from out-of-state institutions, and includes both public and private institutions.

Success and Outcomes Metrics

MDHEWD staff also utilized EMSAS and FAMOUS data to analyze annual **completions** data from public postsecondary institutions. While attainment refers to the percentage of degree holders in the state, regardless of where the degree was earned, completions focus on those earning undergraduate credentials at Missouri's public postsecondary institutions. Trend data for completions metrics covers academic years 2009 through 2018.

This report utilizes the following success and outcomes indicators to underscore distinct disparities among disaggregated populations.

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¹ While Census data does not provide the number of individuals earning a certificate, MDHEWD staff have estimated this from the population with "some college but no degree" and an income premium above the threshold of those who earned only a high school diploma.

- **Annual Completion Proportions** – The proportional demographic makeup of public postsecondary completers. In an equitable world, the demographics of completers match the state demographics. For example, if one in three Missourians are considered low-income, then one in three completers should also be low-income.
- **Selectivity** – In Missouri, there are four levels of institutional selectivity: open enrollment, moderately selective, selective, and highly selective. Institutional selectivity is determined by accepted high school percentile rank and ACT/SAT score.
- **Credit Accumulation** – The number of credits accumulated by a student at the point of degree completion. The minimum requirement for an associate degree is 60 credit hours and a baccalaureate degree is 120 credit hours. MDHEWD encourages institutions to stick as closely to these minimums as possible.
- **Programs of Study** – Majors are organized into seven broad categories, commonly referred to as metamajors: Arts and Humanities, Business and Communications, Education, Health Professions, Social Sciences & Human Services, STEM, and Trades. Metamajor categories are important for future salary implications since earnings vary by job industry.
- **Degree Type** – Undergraduate degree types are divided into three categories: certificates, associate degrees, and baccalaureate degrees.
- **Graduation Rates** – Graduation rates are cohort-based and are analyzed in two ways: on-time and 150 percent of time. For two-year institutions, on-time graduation is within two years, while 150 percent of time is within three years. At the four-year sector, on-time graduation is within four years and 150 percent of time is within six years. Unlike the metrics above, graduation rates compare subpopulations within demographic categories to each other, and not to the state demographic data.
- **Post-Completion/Workforce Outcomes** – Post-completion outcomes describe those who go on to advance their education after completion, whereas workforce outcomes focus solely on those who enter the workforce within one year of completion, including their median salaries. Like graduation rates, outcomes metrics compare subpopulations within demographic groups and not to the state population.

KEY DEFINITIONS

COMPLETER: An individual who completes a postsecondary credential.

POSTSECONDARY CREDENTIAL: Postsecondary level certificates or degrees; a formal award, which includes career and vocational training programs as well as liberal arts and science programs.

SUCCESS: Completion of a degree or certificate, irrespective of time to complete.

RACE/ETHNICITY: EMSAS records, like Census data and IPEDS, use multi-race fields for students. Additionally, MDHEWD staff have followed Census data and reports Hispanic individuals separately. Due to small sample sizes, this report is unable to adequately comment on the equity gaps affecting Missouri's students of indigenous backgrounds.

INCOME LEVEL: Using FAMOUS data, MDHEWD staff identified income levels for students from Free Application for Federal Student Aid (FAFSA) records. MDHEWD staff assumed students who needed financial aid were likely to complete a FAFSA, while students who did not require financial aid did not. Therefore, it is likely this report slightly undercounts students in lower-income levels—which has been defined at or below 200 percent of the federal poverty level. Data for poverty threshold came from the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services (<https://aspe.hhs.gov/prior-hhs-poverty-guidelines-and-federal-register-references>).

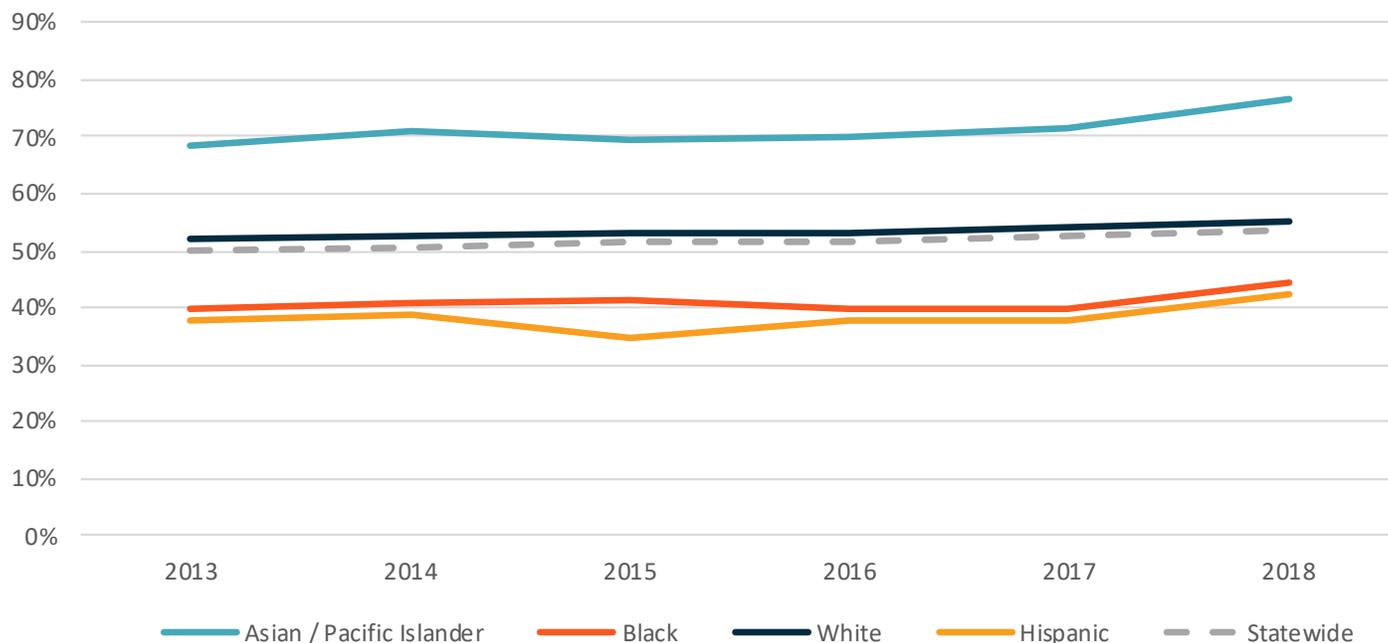
RURAL/URBAN: Because of data limitations, department staff were able to determine geographic location for Missouri residents only; urban/rural designation was then determined by county. The Missouri Economic Research and Information Center (MERIC) and the Missouri Department of Health and Senior Services have identified 14 counties considered to be urban, based upon population density. These counties are Boone, Buchanan, Cass, Clay, Cole, Greene, Jackson, Jasper, Jefferson, Newton, Platte, St. Charles, St. Louis, and St. Louis City.

“THE GOAL OF THIS REPORT IS FOR POSTSECONDARY INSTITUTIONS, STAKEHOLDERS, AND POLICYMAKERS TO UTILIZE THESE FINDINGS TO ANALYZE THE DISPARITIES WITHIN CAMPUSES AND ADDRESS EQUITY ISSUES SO THAT MEASURABLE POSITIVE RESULTS ARE REALIZED. “

MISSOURI EQUITY REPORT 2020

RACE/ETHNICITY

Figure 2: Attainment Levels by Race/Ethnicity



Source: ACS 1-year Estimates

Overall, attainment rates across all races and ethnicities have increased since 2013. However, people of color, especially Black and Hispanic students, have attainment rates well below the statewide average (Figure 2). These gaps were especially pervasive across other measures of success for Black students, leading to future inequitable employment opportunities and lost wages.

Though Black Missourians comprised 14 percent of the college-age population and 11.5 percent of postsecondary enrollments, they made up only 7.5 percent of completions; this indicates there are systemic or other barriers that prevent Black students from completing at the same rate as their peers. Further analysis found persistent equity gaps across institutional sector, regardless of the cohort graduation rate used. For example, Black students were four times less likely to graduate on-time at public two-year institutions (Figure 3a) and almost 2.5 times less likely to graduate on-time at public four-year institutions (Figure 3b) in the most recent year for which data are available. While Hispanic students had the largest increase in graduation rates at the two-year sector, they only saw slight improvements at the four-year sector.

It is important to note the role Missouri's two Historically Black Colleges and Universities (HBCUs) had in enrollment and completions across the state. Missouri's HBCUs added five percentage points to the share of Black students among all enrollments (from 7.7 percent to 11.7 percent) and one percentage point to the share of Black students among total completers (from 7 to 8 percent). While the two-year sector

BY THE NUMBERS:

- **14 OF 100:**
BLACK COLLEGE-AGE (AGE 18-24) MISSOURIANS.
- **11.5 OF 100:**
STUDENT ENROLLMENTS WHO ARE BLACK.
- **7.5 OF 100:**
GRADUATES WHO ARE BLACK.

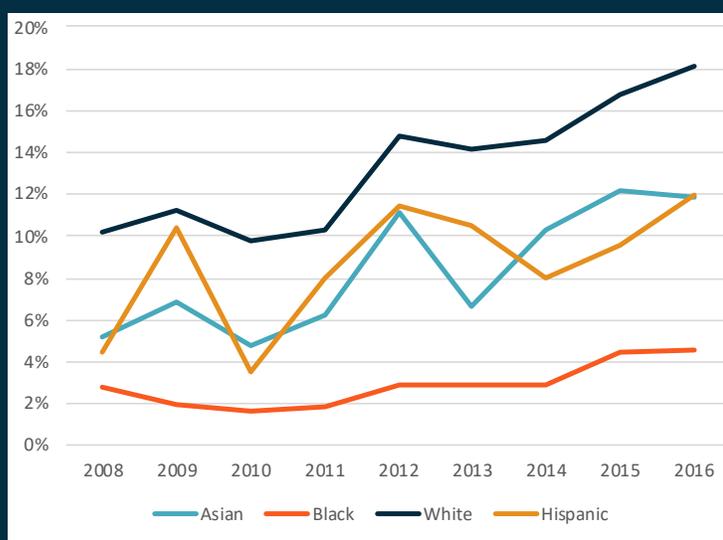
RACE/ETHNICITY

had a larger share of Black completers in the first half of the time period analyzed, removing HBCUs from the four-year sector widened the gap between the two sectors. Starting in 2016, however, this gap disappears; the share of Black students among all completers for both the two-year and four-year sector, without HBCUs, was only seven percent in 2018, less than half of what it should be to match the demographic profile of the state (Figure 4).

These gaps are indicative of systemic and other barriers impacting Black students in Missouri, regardless of sector or institution type.

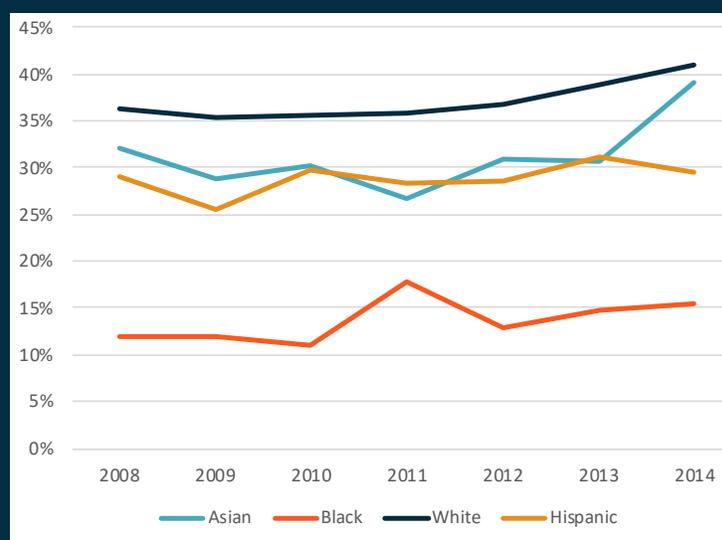
Differences in attainment for Black students also existed across categories of institutional selectivity (Table 1). At open enrollment institutions, Black student enrollments match representation within the state (around 14 percent), but only make up 8.6 percent of annual total completions.

Figure 3a: On-time Fall Cohort Graduation Rates at public two-year IHEs, by race/ethnicity



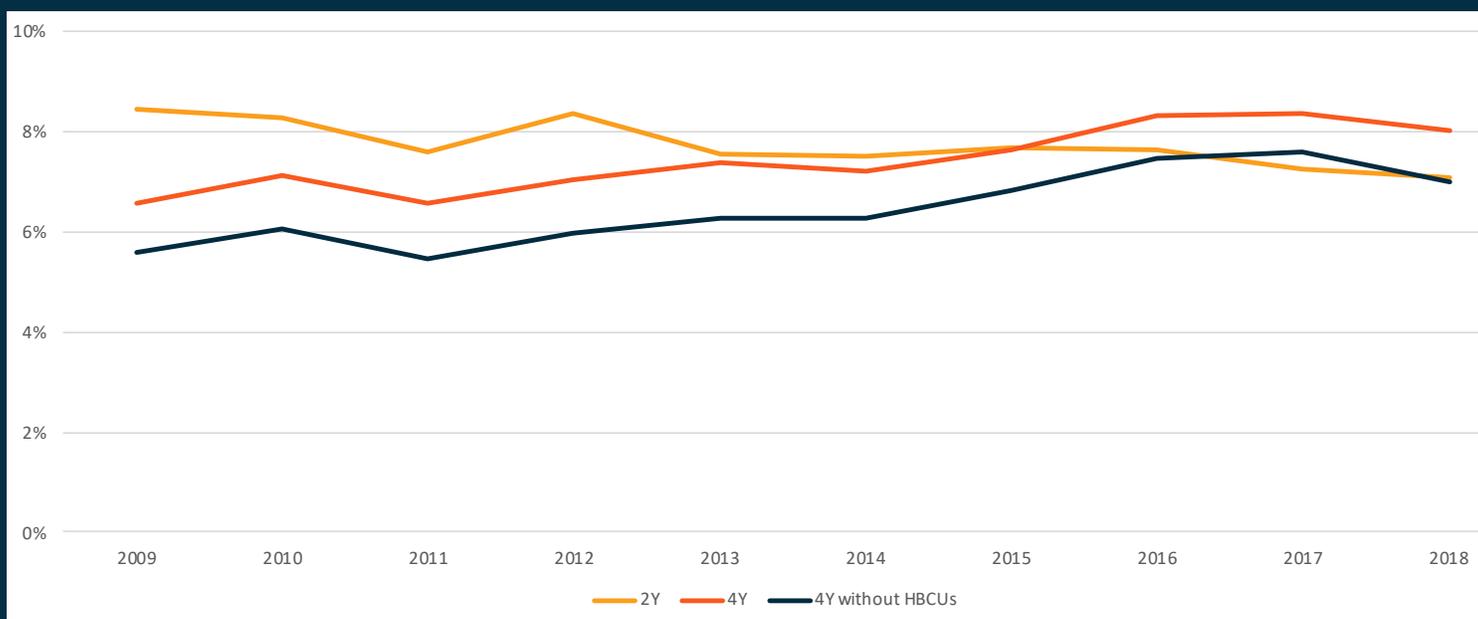
Source: EMSAS Fall Enrollment files and Completion files

Figure 3b: On-time Fall Cohort Graduation Rates at public four-year IHEs, by race/ethnicity



Source: EMSAS Fall Enrollment files and Completion files

Figure 4: Black students as a percentage of public completers, by sector



Source: EMSAS Fall Enrollment files and Completion files

RACE/ETHNICITY

Table 1: Public Enrollments vs Completions of Black Students by Selectivity Level

Selectivity	Share of Enrollments (Fall 2017)	Share of Completions (2017-2018)
Open Enrollment	15.0%	8.6%
Moderately Selective	10.1%	7.0%
Selective	7.9%	7.8%
Highly Selective	3.6%	2.7%

Source: EMSAS Enrollment and Completions files

Black Missourians are also underrepresented after further disaggregating the data by program of study and degree type. These findings include:

- The underrepresentation of Black students as a share of total graduates carried across almost every broad degree path, or metamajor², with the exception of the Social Sciences (Figure 5). The gaps were widest for Education and STEM programs, two sectors that have goals of recruiting more diverse practitioners.
- Black students comprised 13.2 percent of all certificate earners in 2009, but that share dropped to 6.3 percent in 2018. Hispanic students, however, earned certificates at a rate over five times higher than in 2009.
- Black students were the least likely to enroll in a four-year institution after completing at a two-year institution compared to all other racial and ethnic groups. This gap has persisted over time and has resulted in a 12 percent gap when compared to Hispanic students and a 15 percent gap compared to White students.
- Black students comprised around 7 percent of all associate and baccalaureate degree completers – half the rate of the state demographic profile (around 14 percent).

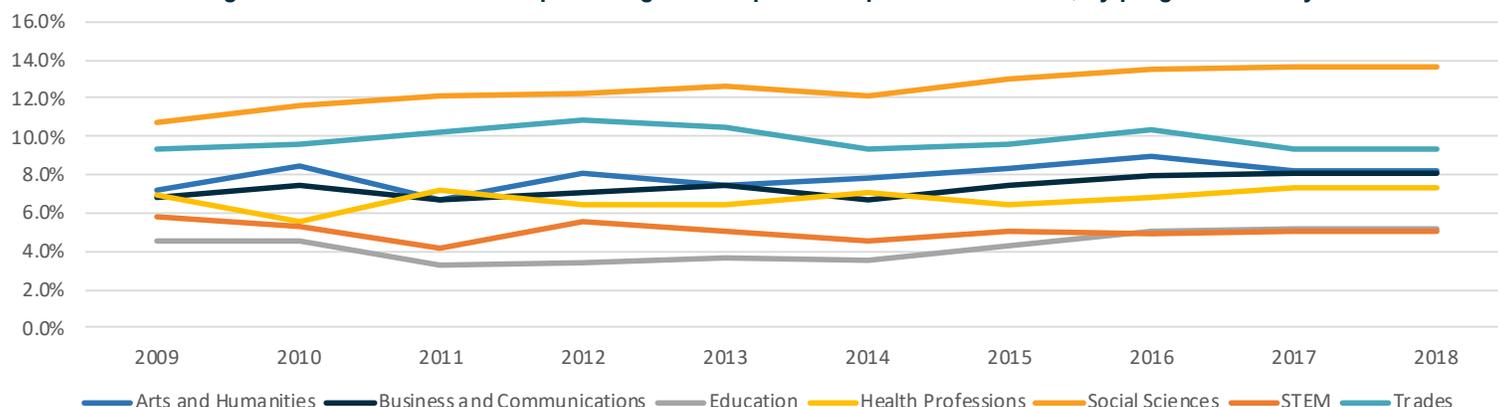
WHILE MEDIAN EARNINGS FOR BLACK GRADUATES INCREASED BY 17.8 PERCENT, THEY INCREASED 38.5 PERCENT FOR WHITE GRADUATES, A SIGNIFICANT DIFFERENCE OF \$3,500 IN 2018, AND A MARKED INCREASE IN WAGE GAPS BETWEEN THE TWO POPULATIONS SINCE 2009.

Systemic and other barriers, including persistent underrepresentation across programs, may have a chilling effect on economic prospects for Black Missourians. Over the past 10 years, median wages have increased for all racial and ethnic groups; however, the increase in earnings was uneven when disaggregated by race. While median earnings for Black graduates increased by 17.8 percent, they increased 38.5 percent for White graduates, a significant difference of \$3,500 in 2018, and a marked increase in wage gaps between the two populations since 2009.

The evidence regarding racial education disparities in the state of Missouri paint a clear picture: Black students do not complete at the same rate or have the same earnings outcomes as their peers of other races and ethnicities. Even when Black students do complete postsecondary education, the inequities continue into the future – income levels for Black graduates still remain lower than those of White graduates.

² Majors are organized into seven broad categories, commonly referred to as metamajors: Arts and Humanities, Business and Communications, Education, Health Professions, Social Sciences & Human Services, STEM, and Trades.

Figure 5: Black students as a percentage of completers at public institutions, by program of study



Source: EMSAS Completions Files

MISSOURI EQUITY REPORT 2020

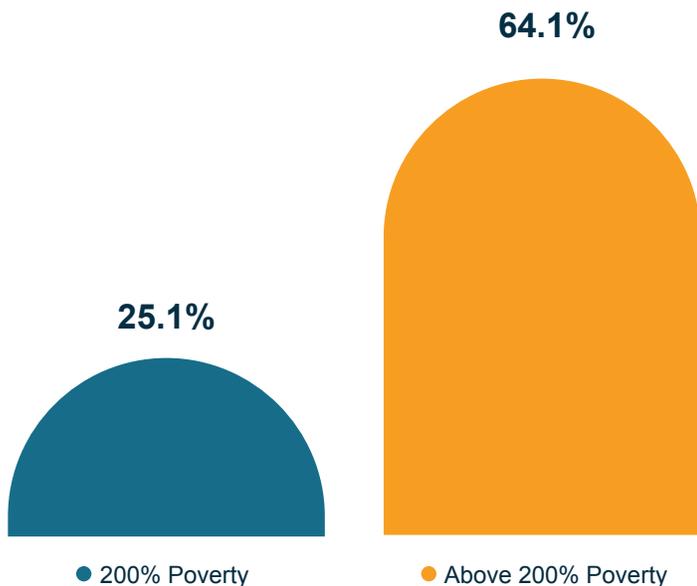
PARENTAL INCOME

Parental income is a strong predictor of postsecondary success; the lower the household income, the less likely a student is to graduate from a postsecondary program. While the data highlighted marked improvements in lower-income completion levels, there is still a clear difference in postsecondary completions between those from different socioeconomic backgrounds.

Analyzing statewide attainment data, low-income students — those at or below 200 percent of the federal poverty level, which for a family of four was \$50,200 in 2018 — were over three times more likely to leave college before earning a certificate or degree than students from a higher-income background. Attainment gaps have widened since 2013, having increased slightly for higher-income students (those above 200 percent of the federal poverty level) but remained relatively flat for low-income students (Figure 6).

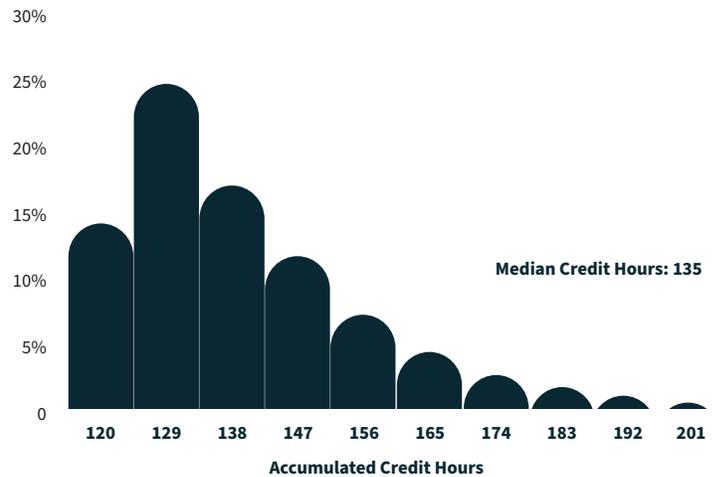
Within both the two- and four-year sectors, low-income students completed degrees on time at half the rates of higher-income students. The gap narrowed slightly, but persisted, over the 10-year period analyzed for graduation rates within 150 percent of time; low-income students are between 1.5 and 1.8 times less likely to complete within 150 percent of time than their higher-income peers, depending on the year analyzed.

Figure 6: Postsecondary Attainment by Income Levels



Source: ACS 1-year Estimates

Figure 7: Distribution of Accumulated Credit Hours for Baccalaureate Degree, AY2009-AY2019



Source: EMSAS Completion and Term Files

Despite the lack of progress in graduation rates, low-income students made up a 9.5 percent larger share of statewide completions in 2018 than 2009. However, these completions were not evenly distributed between sectors or degree levels. Low-income students made up roughly 46 percent of all two-year completers over the 10 years analyzed (compared to 44 percent of enrollments), and 34 percent at the four-year sector (compared to 22.3 percent of enrollments), indicating that most the gains in this area are occurring at the two-year sector. Further, low-income students made up 44.7 percent of certificate completers, 45.9 percent of associate degree completers, and 34.2 percent of baccalaureate completers. When earning a baccalaureate degree, however, lower-income students are at a disadvantage to their higher-income peers. A vast majority of students earn more credits than the state recommended 120-credit hour minimum (Figure 7). While this is burdensome for all students, the additional costs associated with these extra hours has disproportionate effects on low-income students as compared to high-income students.

PARENTAL INCOME

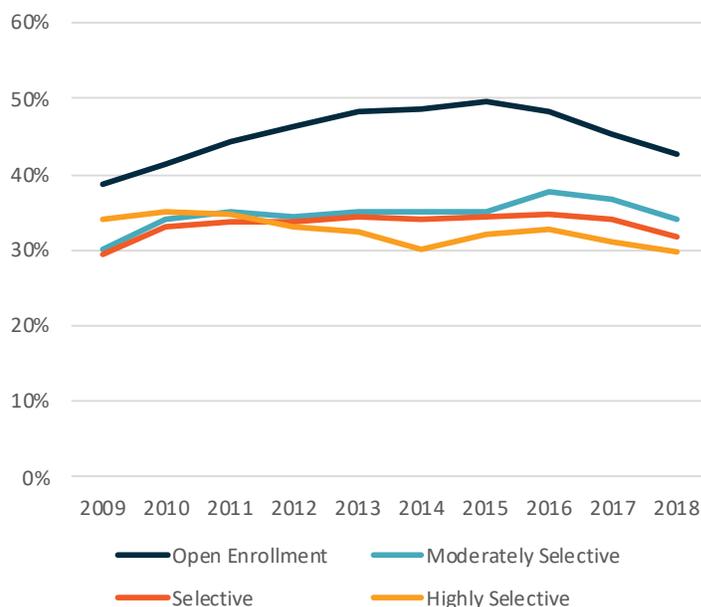
Based on the Missouri population, low-income students would comprise 34.5 percent of students across selectivity designations. Low-income students represented the largest share of completions at open enrollment institutions – a 10-year average completion proportion of 45.7 percent.

AS SELECTIVITY LEVELS INCREASED, HOWEVER, THE PROPORTION OF LOW-INCOME STUDENT COMPLETERS DECREASED.

This indicates that low-income students are overrepresented at open enrollment institutions but underrepresented at all other selectivity levels. Further, while the share of low-income students increased over the time period analyzed at open enrollment, moderately selective, and selective institutions, it decreased at highly selective institutions (Figure 8).

Despite these inequities, the employment rate for low-income students increased 3.7 percent since 2009 and decreased 7.3 percent for their higher-income peers. The wage gap between these populations is also shrinking; however, higher-income students still maintained a \$4,000 higher median salary in 2018.

Figure 8: Students at or below 200 percent poverty as a percentage of completers at public institutions, by selectivity



Source: EMSAS Completions files and FAMOUS student records

OTHER MEASURES OF INCOME

Pell Grant eligibility is often used as a proxy for income in analyzing student success metrics. However, this population is excluded from this report because the qualifications for Pell were adjusted in 2011, potentially confusing any potential findings. Additionally, ACS data from Census does not include data on Pell eligibility, but instead records data based on federal poverty guidelines.

Staff instead analyzed the outcomes of students living at or below the federal poverty level, and the findings are interesting. This population saw a 48 percent increase in completions in the 10-year period analyzed, and made up 24 percent of completions at two-year institutions and 21 percent of completions at four-year institutions, much higher than the 13.2 percent statewide poverty rate in 2018.

Despite this progress, 2018 median wages for graduates coming from households at or below the poverty level was \$7,000 less than their peers with parental incomes above 200 percent of the federal poverty level (just under \$17,000 compared to just under \$24,000). This gap is the largest disparity in the post-completion workforce outcomes across all demographic categories.

While it is difficult from the data sources utilized to know which variable influences the other – whether low completion rates contribute to lower income levels or vice-versa – the data suggest that income level is a compounding and cyclical variable, and individuals who began college in a lower income level, may be unlikely to leave that level. Further research is needed to understand why this may be.

MISSOURI EQUITY REPORT 2020

PARENTAL EDUCATION

Table 2. Public Graduation Rates, by parental education level and sector, most recent years available

	On-time Completion			Within 150 percent of time		
	First Generation	One-Parent	Both Parents	First Generation	One Parent	Both Parents
2-Year	15.4%	16.8%	18.6%	27.5%	28.7%	34.5%
4-Year	26.4%	33.4%	44.0%	48.3%	59.6%	71.3%

Source: EMSAS Completions files and FAMOUS student records

It is generally accepted that first-generation students, students for whom neither parent attended college, hold a particular disadvantage when navigating the postsecondary education space. This is typically attributed to the fact that they lack the same supports or social capital as students with college-educated parents. Between 2009 and 2018, first-generation students made up over one in four of all total undergraduate enrollments and completers.

However, there were significant differences between the two-year and four-year sectors for first-generation students. First-generation students made up 35.6 percent of completions at two-year institutions (compared to 28.9 percent of enrollments), and 20.9 percent of the share of completions at four-year institutions (compared to 18.9 percent of enrollments), over the 10-year period analyzed. The data also indicated the following:

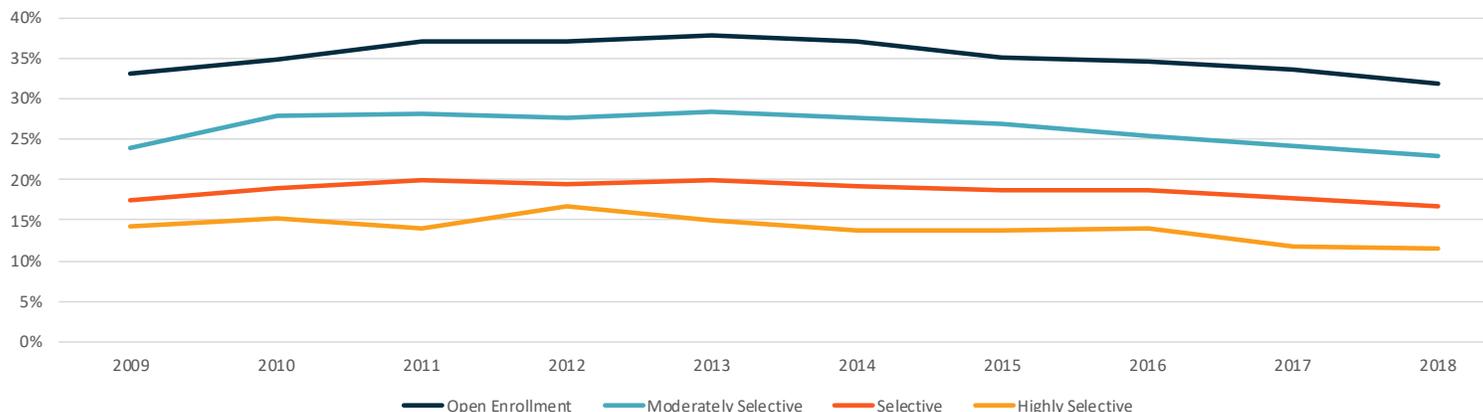
- The graduation rate of first-generation students within the two-year sector increased, but they still graduated at lower rates than their peers.
- At the four-year sector, graduation rates did not significantly change; first-generation students were 1.7 times less likely to graduate on time and 1.5 times less likely to graduate within 150 percent of time.

- Parental education levels appear to be a factor in graduation rates; students with two parents who completed college were much more likely to graduate than those with only one parent or first-generation students (Table 2).

Given the greatest share of completions fell within the two-year sector, it is unsurprising that first-generation students represented a larger proportion of completers at open enrollment institutions than other selectivity levels. Data indicate that first-generation students comprised roughly one in three total enrollments. As the selectivity level increased, the share of first-generation students decreased. This trend, highlighted in the 2019 Equity in Missouri Higher Education Report, is reflected in the completions data (Figure 9).

Analyzing first-generation completion by degree mirrors the same pattern as selectivity level completions. First-generation students consistently comprise a larger share of certificate and associate degree completions than their peers with college educated parents. Conversely, first-generation students made up a much smaller share of baccalaureate degree earners by a roughly six percentage point gap.

Figure 9: First-Generation students as a percentage of completers at public institutions, by selectivity



Source: EMSAS Completions files and FAMOUS student records

MISSOURI EQUITY REPORT 2020

AGE

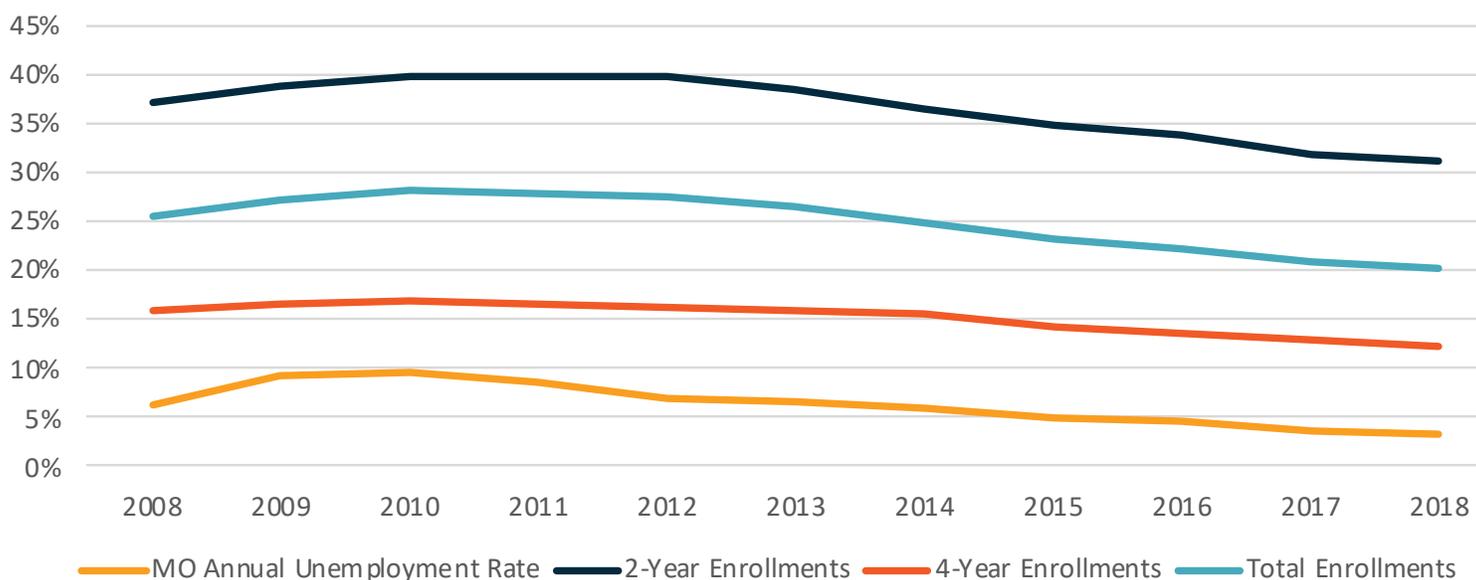
The population of adult learners – those between the ages of 25 and 64 – are referred to as a “non-traditional” population due to their unique needs. They often balance life priorities, such as full-time employment and family, along with postsecondary studies. As a result, it is important to understand this population’s completion outcomes compared to traditional-aged students to determine how postsecondary education may respond to the needs of these learners.

The number of adult learners attending Missouri institutions of higher education generally mirrors unemployment trends; as unemployment in the state goes up, so do the number of enrolled adult learners (Figure 10). As unemployment in Missouri decreased over the past 10 years, the percentage of adult learner enrollments also decreased, from 25 percent in 2008 to 20 percent in 2018. While enrollments are more responsive to economic situations, completions are delayed because of the time it takes to earn a degree. As a result, during that same time period, adult learner completions increased from 28 percent of all completions to 29 percent (Figure 11). It is still too early, however, to determine if the economic downturn related to COVID-19 will follow similar trends, and more research is needed as data become available.

The 10-year average on-time completion rate for adult learners within the two-year sector was 41.3 percent, the same as their traditional counterparts. In some years, the adult learner completion rate eclipsed that of traditional students (Figure 12a). This held true even when looking at completions within 150 percent of time. Similarly, a significant majority of all certificate earners were adult learners in the years analyzed; in some years, they comprised nearly two out of every three certificate completions. This trend held even while the raw number of certificate earners more than doubled from 2009 to 2018.

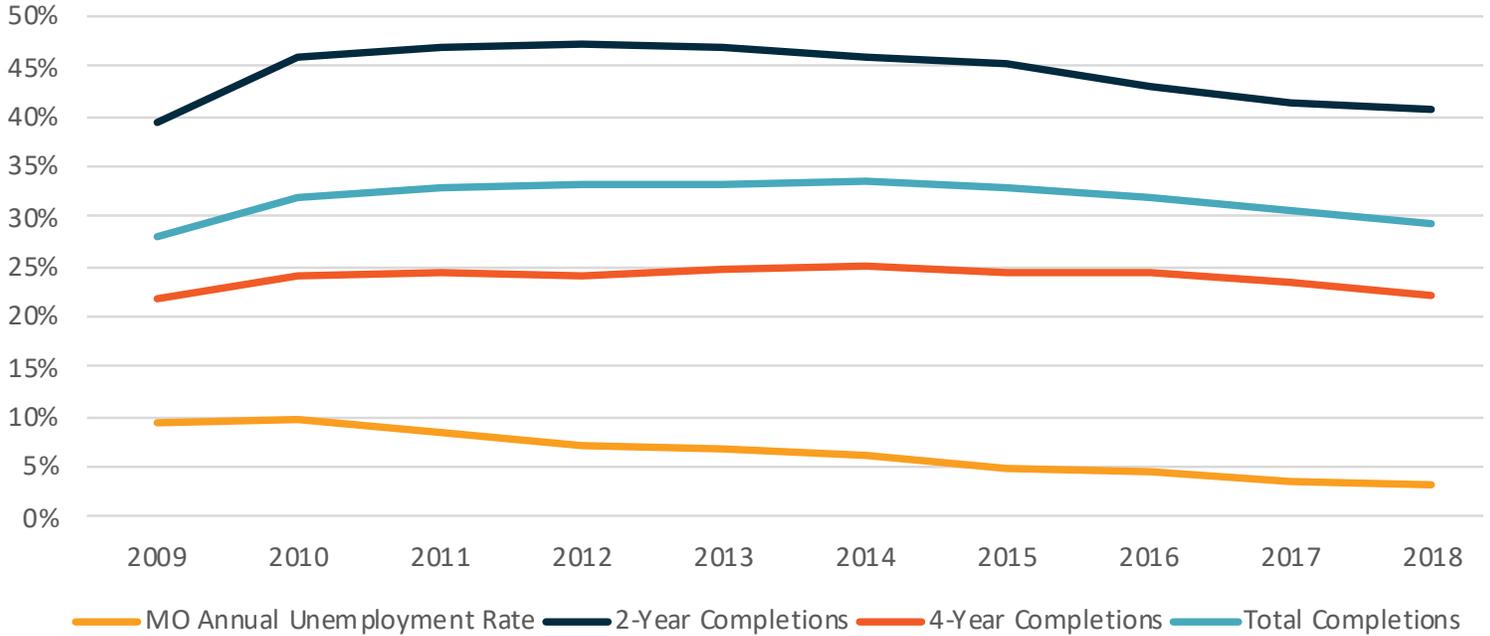
In the four-year sector, the 10-year average on-time completion rate for adult learners was 6.4 percent. Unlike adults who attended a two-year institution, those who attended a four-year institution were nearly five times less likely to complete as their younger peers (Figure 12b). That gap persisted within 150 percent of time graduation rates as well. Further, adult learners earned at least 10 more credit hours than traditional age students, increasing the overall cost of education for both associate and baccalaureate degrees.

Figure 10: Undergraduate Enrollment of Adult Learners (25-64) at public institutions



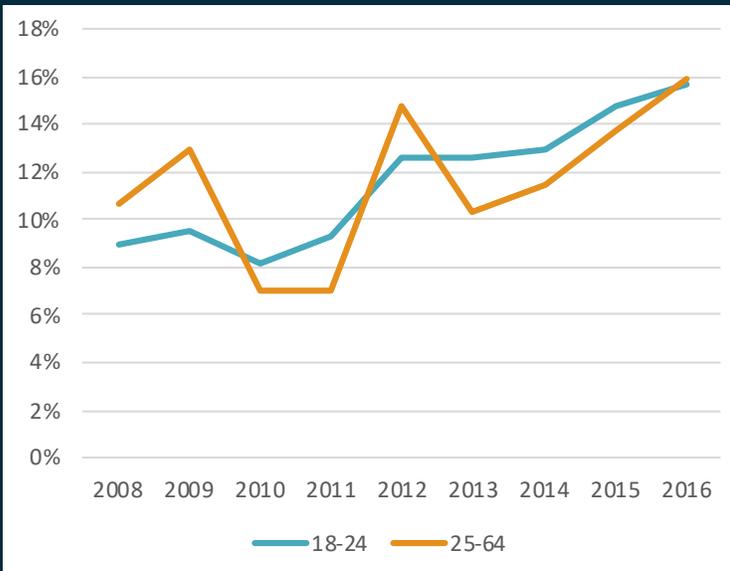
Source: EMSAS DATA, Federal Reserve Bank of St. Louis. NOTE: <https://fred.stlouisfed.org/series/MOUR#0>

Figure 11: Public Undergrad Completions of Adult Learners (25-64)



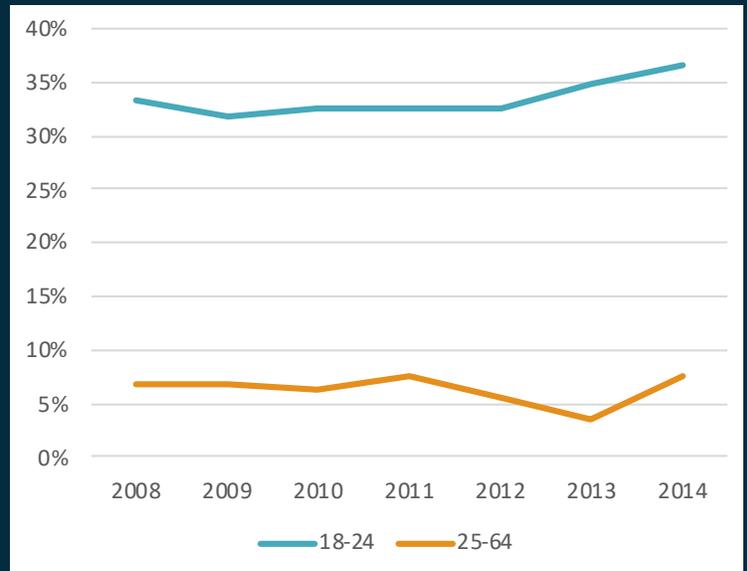
Source: EMSAS DATA, Federal Reserve Bank of St. Louis. NOTE: <https://fred.stlouisfed.org/series/MOUR#0>

Figure 12a: Cohort Graduation Rate at Public Two-year IHEs, within 100 percent of time



Source: EMSAS Fall Enrollment files and Completion files

Figure 12b: Cohort Graduation Rate at Public Four-year IHEs, within 100 percent of time

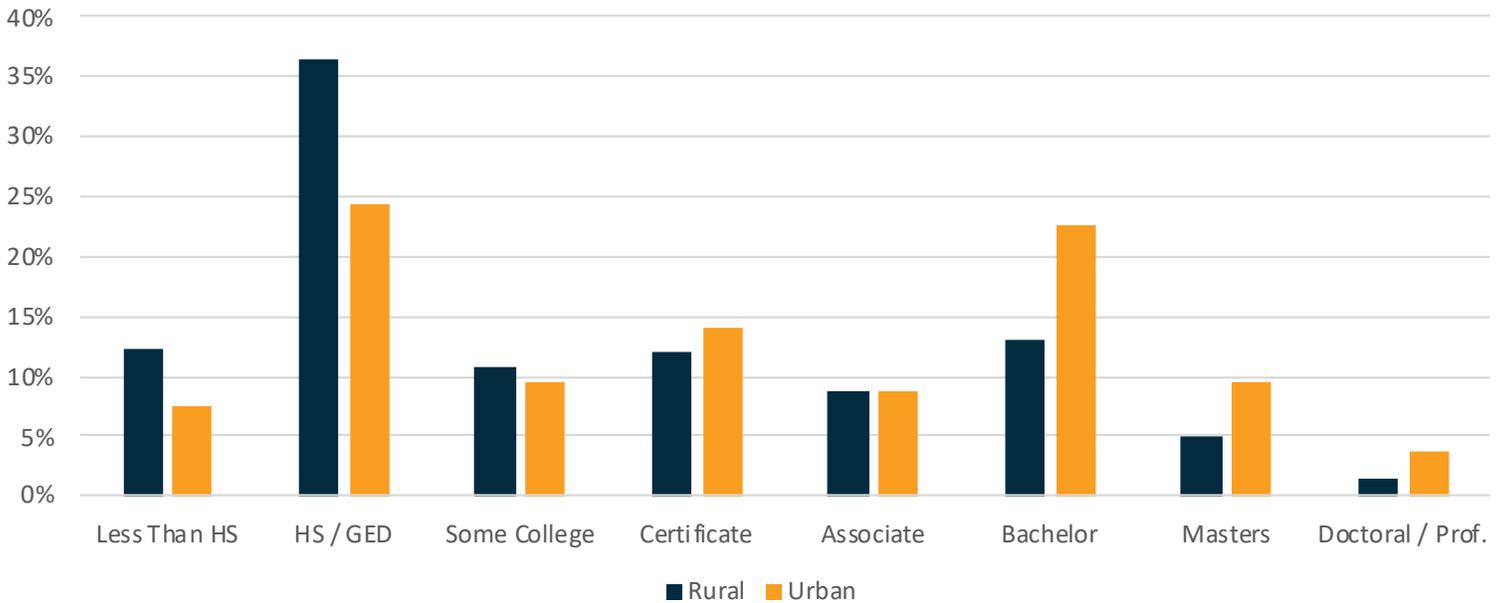


Source: EMSAS Fall Enrollment files and Completion files

MISSOURI EQUITY REPORT 2020

RURAL/URBAN

Figure 13: Attainment levels of highest degree by geographic region



Source: ACS 5-year Estimates

Missouri is a large state with extensive diversity in terms of rural and urban regions. However, in most metrics analyzed, there was little meaningful difference in completion between rural and urban students. This held true at the four-year sector for graduation both on-time and within 150 percent of time. However, at two-year institutions, rural students were nearly twice as likely to graduate on-time as urban students, though the gap narrowed to about 1.5 times more likely for graduation within 150 percent of time.

Rural students were also more likely to enroll at a four-year institution after completing at a two-year

institution than their urban counterparts (42 percent compared to 33 percent, respectively); there was virtually no difference between rural and urban students in pursuing graduate studies. In contrast, those living in urban regions were nearly 1.5 times as likely to have a postsecondary credential as those in rural regions (Figure 13).

In summary, rural students are slightly more successful in postsecondary education, completing more undergraduate degrees and seeking higher level degrees than their urban peers, but this is not reflected in education attainment rates for the rural communities from which they came.

MISSOURI EQUITY REPORT 2020

GENDER

As with geography, the data finds surprising trends in educational equity based on gender. The enrollment figures show female enrollment and completion outnumber those of males at Missouri public institutions by about 20 percent. However, programmatic completions and employment trends reveal an inverse effect in regard to recent median income.

When looking at completions among gender, many of the same gaps that exist in the enrollment data are still present, with one notable exception: Business and Communications programs. While men were overrepresented in enrollments, women slightly outnumbered men in completions. Men are vastly overrepresented in STEM and Trades programs, while women are vastly overrepresented in Education and Health Professions programs (Figure 14).

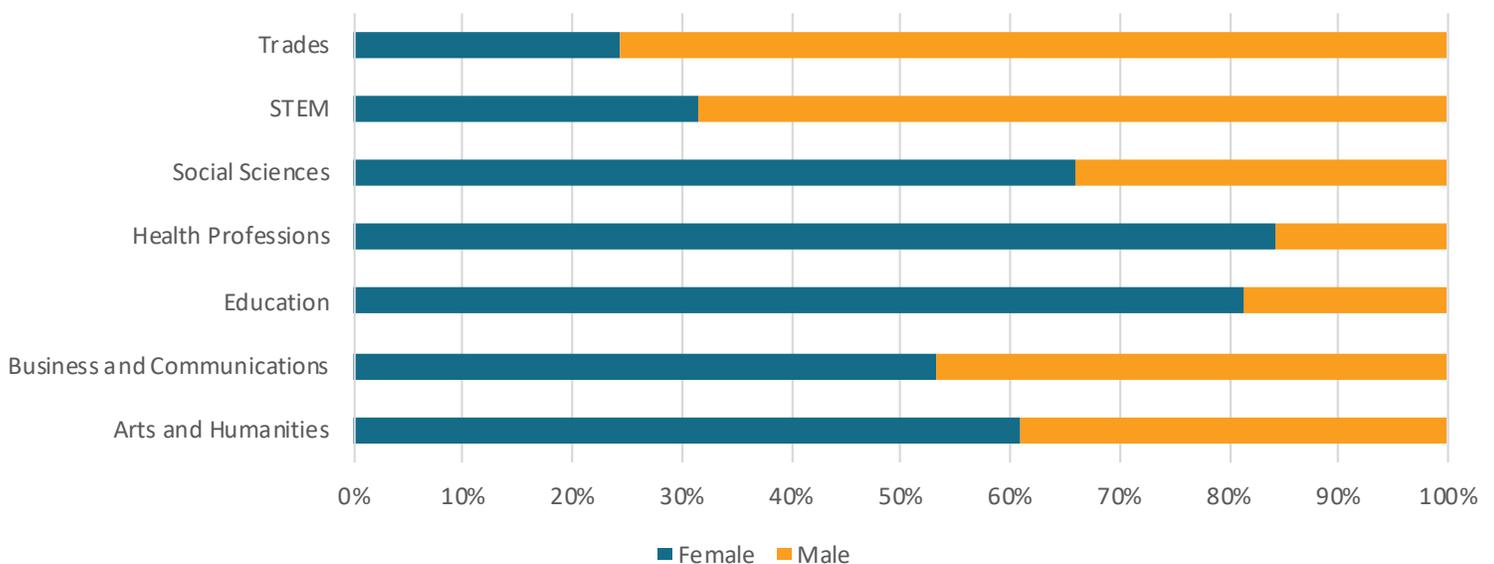
While the scope of this equity report series is on undergraduate education, it is worth noting that contrary to other trends in relation to gender, women are still underrepresented in doctoral and first professional degree attainment; 55.4 percent of doctoral or first professional degrees are held by men compared to 44.6 percent held by women.

IN 2009 AND 2010 THERE WAS GENERAL PARITY IN MEDIAN WAGES BETWEEN MALES AND FEMALES, BUT SINCE THAT TIME MALES HAVE STEADILY OUT-EARNED THEIR FEMALE COUNTERPARTS.

When reviewing workforce outcomes, the difference by gender is noteworthy. Over the past 10 years, females held an employment rate 4 percentage points higher than their male counterparts. This trend does not hold, however, in median earnings: in 2009, women earned over \$500 more than men annually. Since that time, the median wages for males increased by 45 percent and only around 29 percent for females. By 2018, this resulted in men earning \$2,500 a year more than women.

The major finding in the attainment analysis based on gender is that while women attend and complete postsecondary undergraduate education at rates above their male counterparts, women's average salaries have not kept pace with men's.

Figure 14: Completions of Metamajor (2018), by gender



Source: 2018 EMSAS Completions files

MISSOURI EQUITY REPORT 2020

CONCLUSION

By analyzing Missouri's diverse population and student body, the data in this report show clear differences between populations and demonstrate that not all Missourians are achieving the same postsecondary success. Since postsecondary degree attainment is a path many Missourians take to ready themselves for the workforce, these inequities are likely to carry over to the workforce as well. It is important to investigate trends and use this information to advise real change at the statewide level. This work is critical; identifying demographic attainment gaps and crafting policy to close these gaps leads to a more educated and productive Missouri population.

As part of its equity work and in recognizing the diverse needs across the state of Missouri, the MDHEWD is collaborating with the Missouri Department of Elementary and Secondary Education (DESE) and the business community to create the Missouri Equitable Access, Success, and Engagement (MoEASE) Framework. Recognizing each region of the state is best able to determine its largest equity barriers and overcome inequities as a community, this initiative will engage local communities in evaluating, analyzing, and implementing strategies to close educational gaps.

Inequities that contribute to differences in enrollment and completion rates were likely heightened due to the COVID-19 pandemic and racial tensions throughout 2020, and research into the impact of the pandemic is needed as data become available. Missouri state government, working together as partners with higher education institutions, must do more to support students as they work to complete a quality postsecondary credential:

- Collaborate between state agencies to identify gaps in meeting student needs and aid institutions as they address those gaps holistically.
- Identify best practices throughout the nation to address educational inequities.
- Conduct statewide convenings to share information, create networks, and establish opportunities for collaboration in equity work.
- Design support mechanisms to aid institutions in implementing equitable best practices.
- Strongly encourage all campuses to adopt an equity and inclusion framework similar to an Inclusive Excellence Model³.
- Design more professional development opportunities for students through such programs as apprenticeships, job shadowing, or mentorships, so students may arrive prepared to the workforce.

Conducting equity work throughout the state is a critical component to reaching Missouri's Big Goal of 60 percent of working-age Missourians having a high quality postsecondary credential by 2025. It is also the right thing to do. It is imperative a democratic society ensures all its communities have equal opportunities to succeed. By addressing the inequities highlighted in this report, Missouri will build a stronger state for students and residents to thrive today and in the future.

³ For more information and examples:

> <https://www.aacu.org/making-excellence-inclusive>

> <https://diversity.missouri.edu/our-work/inclusive-excellence-framework/>



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

800-473-6757 // 573-751-3940

Fax: 573-751-6635 // dhewd.mo.gov // info@dhewd.mo.gov