NEW BACCALAUREATE SERIES

Community College Baccalaureate Degree Completion in Washington

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DATA NOTE 4 | FEBRUARY 2020

Complimenting an earlier data note on enrollment by Meza (2019), results of this data note examine the completion rates of students in Community College Baccalaureate (CCB) programs in Washington state by program area and student demographics. We find CCB degree completion rates are rising and now approach the baccalaureate completion rates for students transferring from a community college to a public four-year university in Washington state. This is notable as the CCB student population includes students who are older and more likely to be underserved by higher education than the transfer student group. Our results also show CCB degree completion rates vary by program area and student demographics, with completion rates for Latinx students of 66 percent and rivaling the completion rates of White and Asian students in the Business program area. However, equity gaps exist in degree completion in other CCB program areas that need to be addressed.

BACKGROUND

An increasing number of states authorize community colleges to confer baccalaureate degrees but relatively few students are able to access them. With the exception of Florida and Washington that have scaled baccalaureate degrees to all or nearly all community and technical colleges (CTCs), most states limit baccalaureates to only a few associates-granting institutions. Washington state has a markedly different picture of CTC baccalaureate degrees in that 29 of 34 CTCs are authorized to confer Bachelor of Applied Science (BAS) degrees, and enrollments in these programs are rising.

In all regions of Washington state, including rural areas, the number of students with baccalaureate degrees does not meet employer demand, with students of color underrepresented among baccalaureate degree completers (Myers Twitchell, Poppe, Meza, Huizar, & Zumeta, 2019). In addition, the state's large CTC system offers a number of terminal associate-degree programs that provide limited options for students enrolled in professional-technical education (PTE) (also referred to as workforce programs) to transfer to baccalaureate-degree programs offered by universities. One strategy that Washington state has chosen to address this concern is to authorize CTCs to implement BAS[1] degrees that increase access to baccalaureate degrees. According to the Washington State Board for Community and Technical Colleges (Washington SBCTC) these degrees seek to provide additional access for students of color, students who are low-income, students who are place-bound with family

[1] Washington state legislation codifies the Bachelor of Applied Science (BAS) degree as the credential conferred as the community college baccalaureate (CCB). We, therefore, use BAS and CCB interchangeably in this data note.

responsibilities, and students who are working part- or full-time (Washington SBCTC, n.d.).

Since the Washington state legislature authorized CTCs to offer BAS degrees in high-demand workforce programs nearly 15 years ago, 29 of 34 colleges have been authorized by the state to offer BAS programs, with over 100 such programs in existence or in early stages of implementation (Soler, 2019). As of spring 2019, Washington CTCs have conferred 4,796 BAS degrees, and this number is climbing as BAS program approval and enrollments continue to grow (Washington SBCTC, n.d.). BAS degree enrollments have grown in Washington CTCs even as PTE enrollments have declined (Washington SBCTC, 2018). BAS degrees now comprise about 4% of the baccalaureate degrees awarded in Washington (Washington Education Research Data Center, n.d.).

Recent analysis by Meza (2019) in Washington state shows BAS degree programs provide access to baccalaureate degrees for student groups historically underserved at the baccalaureate level, as was intended by state policy makers. The demographics of students enrolled in BAS programs reflect the PTE student population in CTCs and differ from the transfer student population. For example, BAS students are considerably older than transfer students, averaging 32 compared to 24 years of age, respectively, and they are also more racially diverse than the students enrolled in transfer programs (additional demographic information is available upon request).

The same study also shows relationships between student demographics and BAS enrollment, with some program areas enrolling more racially minoritized students than other program areas. For example, rapidly growing STEM programs enroll fewer Latinx, African American and Native American students of color than longer-standing business programs where Latinx students have much higher enrollments than STEM programs (Meza, 2019). This data note builds on the research that reported on BAS enrollments in Washington's CTCs to study baccalaureate completion by student group and program area. The research questions guiding this study are:

- How many students are completing BAS degrees by program area?
- What is the overall average completion rate of BAS programs, and how has the average completion rate changed over time?
- What are the overall and most recent three-year completion rates for program areas?
- Are there differences in the overall and most recent three-year completion rates by program area and student demographic group?[2]

DESCRIPTION OF THE STUDY

The Washington SBCTC provided data to our Community College Research Initiatives (CCRI) group for this analysis. The data represents students who enrolled in a BAS program between academic year 2007-2008 and 2014-2015. To calculate completion rates we followed those students for four-years from the time of their enrollment in the BAS program (i.e. 200% time). There are 4,162 unique students in the dataset.

Key variables include student self-reported race, ethnicity, age, CTC of enrollment and whether students received veteran's benefits and/or need-based financial aid, as well as enrollment dates, classification of instructional program (CIP) codes, and degree conferral date. The program area variable included in this analysis is derived from the CIP codes. For ease of interpretation, we classify programs into six program areas based on the first two-digits of its CIP code.[3]

[2] We use the term "student demographic group" to avoid stereotypical labeling of racialized minority groups in this data note.

[3] The Education and Training program area represents all CIP codes beginning in 13; Healthcare, Safety and Human Services represents CIP codes 43, 44, and 51; STEM CIP codes are 3, 10, 11, 15, and 26; Business, Management and Marketing are CIP code 52; Visual and Performing Arts are CIP Code 50; and Transportation, Distribution and Logistics are CIP code 47 and 49. Additional information on program CIP code classification in to program areas is available by request.

Our analysis produced results using descriptive statistics, laying the groundwork for more sophisticated statistical analysis in the future.

FINDINGS

This section presents results for each research question, beginning with BAS degree completion by program area, and then by overall completion rates compared to completion rates for the most recent three years. We then further analyze completion rates by program area and student demographics, looking at patterns of completion over time. Our analysis of completion rates is also intended to shed light on potential equity gaps within BAS program areas, with an eye toward resolving these gaps. Though this study does not to delve into implementation processes, the extent to which the results reveal possible inequities among student groups may be important to future decisions about BAS policies and practices.

BAS DEGREE COMPLETION

In Washington state, the number of BAS completers is increasing each year as more CTCs enroll students in an increasing number of BAS degree programs. As of spring 2019, the most recent year that data on BAS degree completion is available, 1,397 BAS degrees were awarded statewide (Washington SBCTC, n.d.).

Figure 1 shows that in 2018, for the first time since BAS programs were offered in Washington state, the number of degrees awarded in Science, Technology, Engineering, and Mathematics (STEM) programs (n=314) surpassed the number of degrees awarded in either Business (n=294) or Healthcare, Safety, and Human Services (n=284) program areas. This finding suggests that while Business and Healthcare, Safety and Human Services programs have more longevity, STEM BAS programs represent a growing pathway for CTC students. Given their growth, we paid special attention to the STEM pathway in this data note.

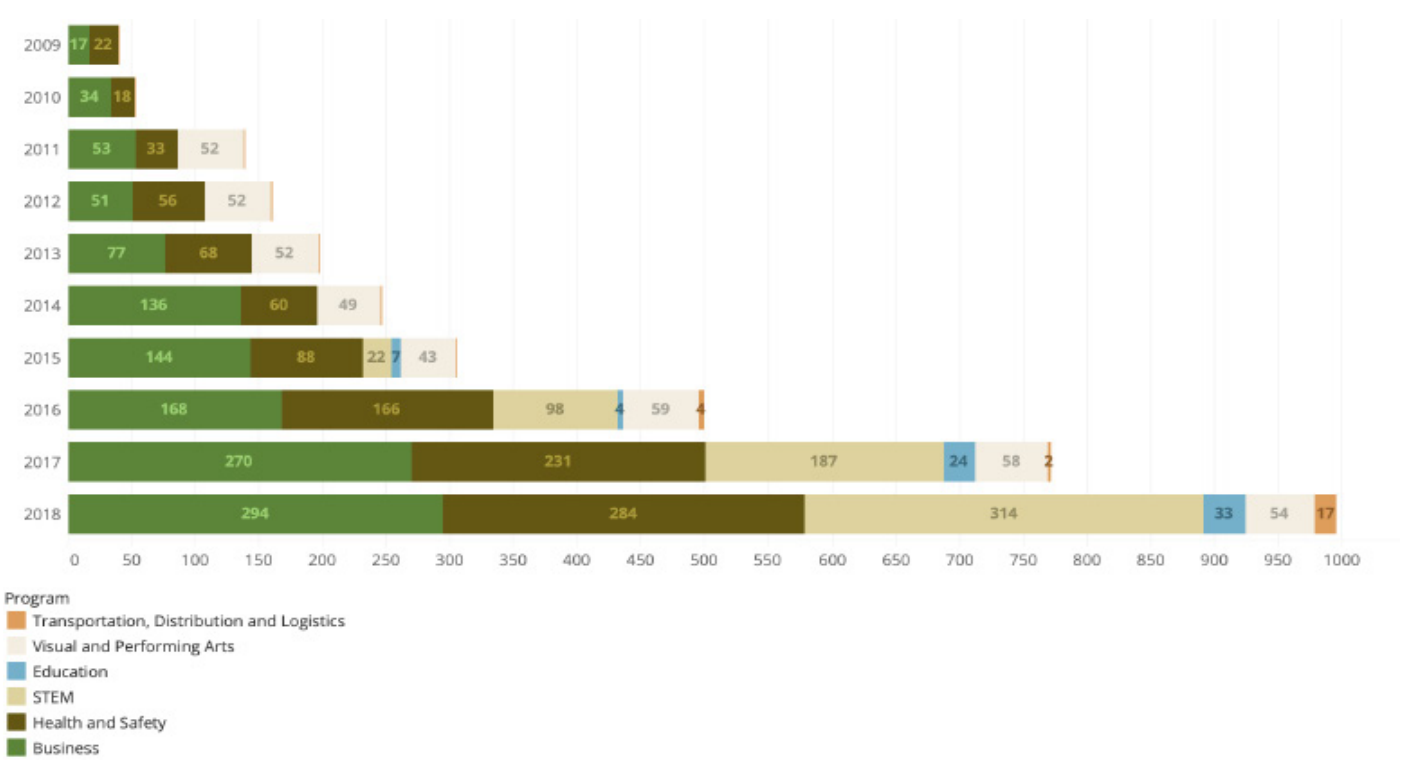

Figure 1. CCB degrees awarded per year by program area (2008-09 to 2017-18)

Of the 4,162 students in our dataset 2,679 completed a BAS, 1,483 did not, 62.4% completed a BAS degree within the 200 percent time of enrollment in a BAS program, and an additional 2.4 % completed this degree in more than 200 percent time for a total completion rate of 64.4% (see Figure 2). Looking at the average completion rate for BAS degrees across all years that data are available for this analysis, we see the average completion rate ranges from a low of 48.3 percent in 2011-2012 to a high of 72 percent in 2013-2014. Recognizing the earliest years of piloting and initial implementation of BAS degree programs, we also computed an average completion rate for BAS degrees using the last three academic years for which data are available. This computation reveals a higher average completion rate of 67.7 percent compared to the overall average completion rate of 64.4 percent.

To help interpret these BAS completion rates, we used the Washington Education Research Data Center (ERDC) statewide public four-year dashboard to compute fall-to-fall 200 percent completion rates for students who transferred into public universities. These results show a bachelor's completion rate of 70% for students who transferred in between 2011-2014, the last three years for which data are available. Relative to other states, Washington ranks second in the nation for percentage of students who start at community college and transfer to complete a bachelor's degree at a four-year institution (Shapiro et al., 2017), suggesting the most recent BAS completion rates that approach the transfer baccalaureate completion rate are particularly noteworthy. Knowing the students enrolled in BAS degrees mirror PTE program enrollments (Meza, 2019), and include an unknown number of students who never intended to get a baccalaureate degree via transfer or any other means, these results show a promising (and improving) BAS completion rate.

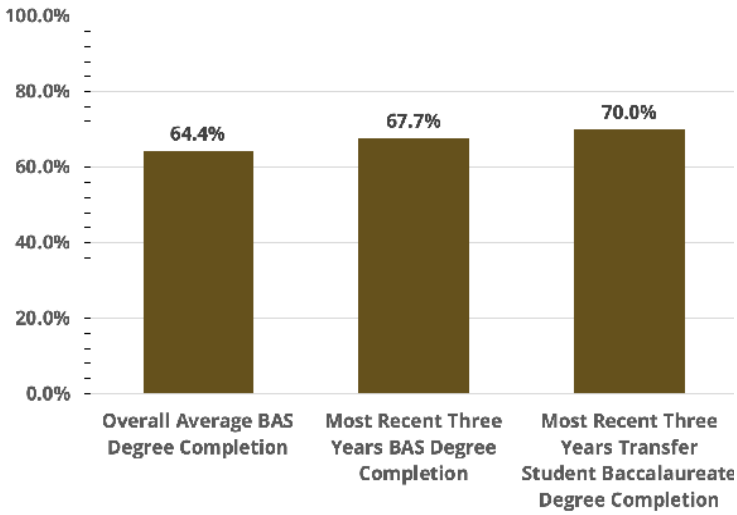

Figure 2. Comparison of BAS completion rates to the completion rates of students who transferred into a public university in Washington

BAS COMPLETION RATES BY PROGRAM AREAS

Delving more deeply into the data, we looked at overall BAS degree completion by program area. There are six program areas in our data described from highest to lowest enrollments (see Tables 1 and 2).

Looking at **Business**, the overall completion rate is approximately 65 percent over the time period we were able to study. This overall completion rate beginning in 2009 is virtually identical to the completion rate for the most recent three years, wherein the difference is only -0.3 percentage points. This program area demonstrates a consistent pattern of completion from the beginning to the most recent data collection, with approximately two-thirds of students completing BAS degree programs.

Table 1 also shows 1,279 students enrolled in the **Healthcare, Safety, and Human Services** program areas, demonstrating a lower overall completion rate than the Business program area of 61.5 percent. What is important to note about Healthcare, Safety, and Human Services is that there is a 15.1 percent difference in the overall completion rate at 61.5 percent compared to the completion rate of 76.6 percent for the last three years. The reasons for the positive difference in the completion rate are not clear from our data, but we speculate that the completion rate may be improving as programs mature and as new programs of study with high completion rates (i.e. dental hygiene) are introduced to this program area.

Table 1. BAS Degree Completion Rates by Program Area

Program Groups	Overall Completion Rate for Students Entering BAS Programs (2007-2014)			Completion Rate for Students Entering BAS Programs in Most Recent Three Years (2012-2014)			Percent Change from Overall Rate to Rate for Most Recent Three Years
	n Enrolled	n Completed	Percent Completed	n Enrolled	n Completed	Percent Completed	
Business	1578	1025	65.0	941	609	64.7	-0.3
Healthcare, Safety, and Human Services	1279	786	61.5	641	491	76.6	+15.1
Science, Technology, Engineering & Mathematics (STEM)	661	416	62.9	660	416	63.0	+0.1
Education and Training	81	51	63.0	81	51	63.0	0.0
Visual and Performing Arts	527	386	73.2	200	150	75.0	+1.8
Transportation, Distribution, & Logistics (TDL)	36	15	41.7	36	15	41.7	0.0
Total	4162	2679	64.4	2559	1732	67.7	+3.3

The program area of **Science, Technology, Engineering, and Mathematics (STEM)** had an overall completion rate of 62.9 percent compared to the completion rate for the most recent three years of 63.0 percent, only .01 percent difference. The reason these completion rates are so similar is because STEM programs are relatively new. This means there is considerable replication of students in the computation of the overall completion rate and the most recent three-year completion rate. These results suggest the completion rates for STEM are similar to Business and also similar to the **Education and Training** program area where the overall completion rate and the most recent three-year completion rate is 63.0 percent.

The completion rates for **Visual and Performing Arts** are higher than for Business and STEM, and also higher than the overall completion rate for Health, Safety and Human Services. The Visual and Performing Arts overall completion rate is 73.2 percent and its most recent completion rate is 75.0 percent (+.1.8). Programs included in this area were some of the first to be implemented by Washington CTCs.

Transportation, Distribution, and Logistics (TDL) has the lowest completion rate of all program areas, at 41.7 percent. However, this program area is newer than most others and still has relatively few enrollments (n=36), suggesting the actual completion rate may not yet be clear. Even so, attention should be paid to this program area as time passes and enrollments grow to ensure the completion rate increases.

BAS COMPLETION RATES BY STUDENT DEMOGRAPHIC GROUPS

Our analysis also examined BAS degree completion by student demographic group (Table 2). In this analysis, we found Asian students have the highest overall average completion rate at 68.5, followed by whites at 66.1 percent. The completion rate for Latinx students is slightly lower at 62.9 percent and Native American or Alaska Native at 62.1 percent, with a sizeable gap to the multi-race group at 58.1 percent, African American at 53.9 percent, and Hawaiian and Pacific Islander group at 52.2 percent. These results are similar to Washington state's associate-degree completion rates wherein Asian students enrolled in PTE and transfer programs complete degrees at higher rates than other student groups, particularly African American students (Washington SBCTC, 2014). These results also show that completion rates are improving, looking at just the three most recent cohort years completion rates are higher than the overall completion rates for all student groups except Native Americans/Alaska Natives. Looking at completion rates for Native Americans/ Alaska Natives, the completion rate was 1 percent lower for the most recent three-year completion rate at 61.1 percent compared to the overall completion rate of 62.1 percent.

BAS PROGRAM AREA COMPLETION RATE BY STUDENT DEMOGRAPHIC GROUPS

To further analyze the data we disaggregated the completion rates by student group, omitting program areas with small numbers. Small numbers also precluded us from analyzing completion rates by student group for the most recent three years that data are available. Also, most or all of the programs in the three areas of STEM, Education and Training, and TDL were implemented in the last three years of our completion data, meaning these programs have had less time to mature and establish a stable base of student enrollments. As time passes, more analysis is needed of completion rates for these programs disaggregated by student group so that the Washington CTCs remain fully aware of how students are performing and thereby able to address any inequities that emerge in completion.

Table 2. BAS Completion Rates by Student Demographic Groups

Student Group	Overall Completion Rate For Students Entering BAS Programs (2007-2014)			Completion Rate for Students Entering BAS Programs in Most Recent Three Years (2012-2014)			Percent Change from Overall Rate to Rate for Most Recent Three Years
	n Enrolled	n Completed	Percent Completed	n Enrolled	n Completed	Percent Completed	
White	2516	1664	66.1	1480	1024	69.2	+3.1
Asian	460	315	68.5	294	216	73.5	+5.0
Latinx	415	261	62.9	291	191	65.6	+2.7
Multi-race	265	154	58.1	207	130	62.8	+4.7
African American	243	131	53.9	149	83	55.7	+1.8
Other race/ Unknown race	182	106	58.2	85	56	65.9	+7.7
Native American/ Alaska Native	58	36	62.1	36	22	61.1	-1.0
Hawaiian/ Pacific Islander	23	12	52.2	17	10	58.8	+6.6
Total	4162	2679	64.4	2559	1732	67.7	+3.3

We provide two figures to show completion rates by program areas and student demographic group. Figure 3 focuses on completion rates by program area and student racial/ethnic group, and Figure 4 provides completion rates by gender. Two program areas, Education and Training and TDL, had an insufficient number of students and thus were not included in this analysis. Both of these program areas are relatively new in adopting BAS degrees, with far fewer enrollments than the other four program areas where disaggregated analysis was possible.

With respect to BAS completion, the program area of Healthcare, Safety and Human Services enrolls sizeable numbers of students identifying as African American, Asian, Latinx, Multi-race and White, and the results show small differences in completion rates, African American students have lower completion rates, reflecting a persistent systemic inequity seen throughout higher education. Notably, the Latinx group has the highest completion rate of all racial/ethnic groups. Also, the completion rates for Asian and White students in Visual and Performing Arts was among the highest of all program areas.

Latinx students also have completion rates comparable to Asian and White students in Business, a program area in which African American students have a substantially lower completion rate. African Americans in Business had a completion rate of 45.3 percent, almost 20 percentage points lower than the average completion rate for all groups in Business of 65.0 percent and the lowest completion rate for all BAS program areas.

Turning to the STEM program area, there were too few Latinx students in the dataset to calculate an overall average completion rate. Fortunately, the other racial/ethnic groups were represented with enough numbers to conduct disaggregated analysis, though the number of African American students was small. Results for STEM show sizeable differences in overall completion rates by racial/ethnic group, with Asian students having the highest rate at 73.4 percent, then multi-race students at 66.0 percent, followed by white students at 63.0 percent, and African American students at 54.8 percent. The sizeable gaps in completion rates between groups deserves greater scrutiny to better understand the experiences of these student groups in STEM programs of study.

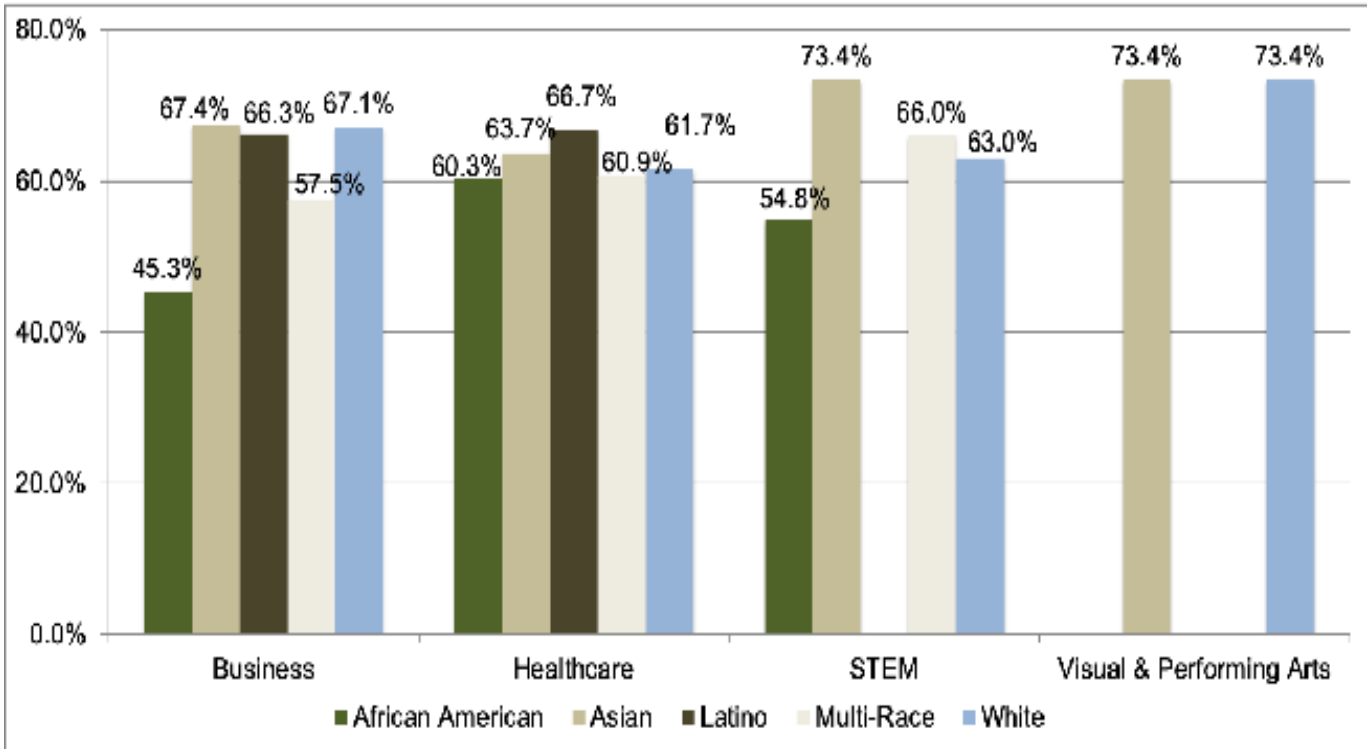

Figure 3. Overall completion rates by program areas and student demographic groups

Looking at overall completion rates by gender (Figure 4), the overall completion rates for females and males are fairly comparable for the Business and STEM program areas. Important to understand about the STEM finding, however, is that the number of females enrolled in STEM is much lower than males. Only 151 of 659 students in STEM are female, making up 23.0 percent of the overall STEM BAS student population. This percentage is substantially lower than the 31.8 percent of total STEM baccalaureate degrees awarded to females in 2015-2016 (NCES, 2017), suggesting the importance of increasing enrollment and completion of females in STEM BAS programs.

Figure 4 also shows a substantial difference in completion rates for females and males in the Healthcare, Safety and Human Services program area, with males lagging behind females by approximately 12.0 percentage points. Females complete Healthcare, Safety and Human Services programs of study at the rate of 64.4 percent compared to 51.9 percent for men, again pointing to a need to close a BAS degree completion gap. Finally, there is also a gap in completion rates for females and males in the Visual and Performing Arts, with females lagging behind males by about 12.0 percentage points. In this case, 83.2 percent of males complete the degree programs compared to 71.3 percent of females. While both groups complete BAS degrees in this program area at a high rate, the potential to close this completion gap should not be overlooked.

DISCUSSION AND NEXT STEPS

BAS degrees offer access to the baccalaureate degree for CTC students who are unlikely to have options to transfer to other baccalaureate degrees (Meza, 2019). Our results suggest that BAS degree completion has improved in recent years, possibly reflecting that BAS programs are maturing from the pilot and initial implementation phase, but also possibly as new programs of study are brought onboard that are demonstrating higher completion rates, for example, dental hygiene. It is also noteworthy that the most recent BAS completion rates are approaching the state's transfer student completion rate. Increasing completion rates are a positive development especially as the BAS student population includes student groups that are older and more likely to be underserved by

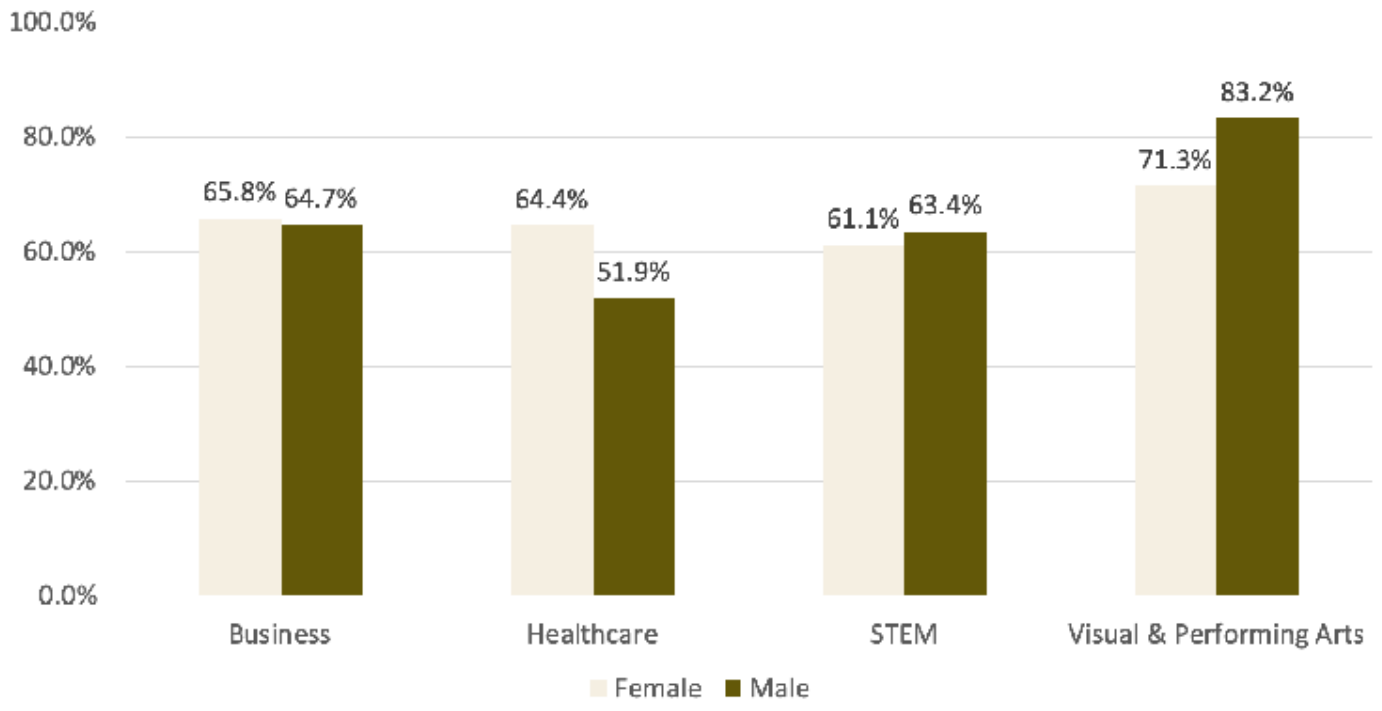

Figure 4. Overall completion rates by program areas and gender groups.

higher education than the transfer student group that is younger and more similar to the traditional college student population.

Although improving over time, our results show BAS degree completion rates vary by program and student demographics, suggesting attention should be paid to underserved students who enroll in BAS program areas to close gaps in completion rates. Especially in the high-demand and high-wage STEM program area, more work needs to be done to recruit women, Latinx students, African-American students, and other underserved groups. Given the importance of STEM to Washington state, we are planning additional analysis in the STEM program area to highlight what we know and still need to know about BAS enrollment and completion in STEM.

REFERENCES

Meza, E. A. (2019, August). *The community college baccalaureate in Washington: Who enrolls?* (New Baccalaureate Series, Data Note 2). Seattle, WA: Community College Research Initiatives, University of Washington. Retrieved from https://www.uw.edu/ccri/newba_dn2/

Myers Twitchell, J., Poppe, M., Meza, E., Huizar, D., Zumeta, W. (2019, September). *STEM by the numbers: Equity and opportunity in Washington's regions.* Seattle, WA: Washington STEM. Retrieved from https://washingtonstem.org/wpcontent/uploads/2019/10/WaSTEM_SBTN_TechnicalDocument.pdf

Shapiro, D., Dundar, A., Huie, F., Wakhungu, P.K., Yuan, X., Nathan, A. & Hwang, Y. (2017, September). *Tracking transfer: Measures of effectiveness in helping community college students to complete bachelor's degrees* (Signature Report No. 13). Herndon, VA: National Student Clearinghouse Research Center. Retrieved from https://nscresearchcenter.org/signaturereport13/

Soler, M. C. (2019, November). *Updating the national landscape: State adoption of community college baccalaureate degrees.* (New Baccalaureate Series, Data Note 3). Seattle, WA: Community College Research Initiatives, University of Washington. Retrieved from https://www.uw.edu/ccri/newba_datanote3/

National Center for Education Statistics. (2017). *Digest of Education Statistics: 2016 Tables and Figures* (2017). Table 318.45: Number and Percentage Distribution of Science, Technology, Engineering, and Mathematics (STEM) Degrees/Certificates Conferred by Postsecondary Institutions, by Race/Ethnicity, Level of Degree/Certificate, and Sex of Student: 2008-09 through 2015-16.

Washington Education and Training Research Data Center. (n.d.). Statewide public four-year dashboard. Olympia, WA: Author. https://erdc.wa.gov/data-dashboards/public-four-year-dashboard#graduation-continuation

Washington State Board for Community and Technical Colleges. (n.d.). *Applied baccalaureate degrees.* Olympia, WA: Author. Retrieved from https://www.sbctc.edu/colleges-staff/programs-services/applied-baccalaureates/

Washington State Board for Community and Technical Colleges (2018). *Annual enrollment summary 2017-2018.* Olympia, WA: Author. Retrieved from https://www.sbctc.edu/resources/documents/colleges-staff/research/enrollment-research/annual-enrollment-summary-2017-18.pdf

Washington State Board for Community and Technical Colleges (2014). *Community and technical college student access and success by race/ethnicity and socioeconomic status 2014 progress report.* Olympia, WA: Author. Retrieved from https://www.sbctc.edu/resources/documents/colleges-staff/research/students-color-research/resh-rpt-14-1-student-access-and-success-000.pdf

NEW BACCALAUREATE DATA NOTES

Bragg, D. D. (2019, January). *The evolving landscape for new baccalaureate degrees in the United States* (New Baccalaureate Series, Data Note 1). Seattle, WA: Community College Research Initiatives, University of Washington.

Meza, A. E. (2019, August). *The community college baccalaureate in Washington: Who enrolls?* (New Baccalaureate Series, Data Note 2). Seattle, WA: Community College Research Initiatives, University of Washington.

Soler, M. C. (2019, November). *Updating the national landscape: State adoption of community college baccalaureate degrees* (New Baccalaureate Series, Date Note 3). Seattle, WA: Community College Research Initiatives, University of Washington.

Meza, E. A. & Bragg, D. D. (2020, January). *Community college baccalaureate degree completion in Washington* (New Baccalaureate Series, Data Note 4). Seattle, WA: Community College Research Initiatives, University of Washington.

The Community College Research Initiatives (CCRI) group at the University of Washington is partnering with New America's Center on Education and Skills (CESNA) to study AB and CCB degrees nationally.

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Center for Education and Skills at New America (CESNA) Team: Mary Alice McCarthy, CESNA Director and Principal Investigator; Iris Palmer, Senior Policy Analyst; and Ivy Love, Policy Analyst.

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