

Native American Persistence and Graduation Gaps

The purpose of this report is to explore student success differences between Native American first-time, full-time (FTFT) undergraduates and FTFT undergraduates not of color. The purpose of this report is to help CSU's Native American Cultural Center better serve students by understanding the timing and majors (by college) where gaps for Native American students are largest.

Executive Summary

Gaps in freshman retention between Native American students and students not of color are sizable. Gap sizes for third fall persistence and graduation are only slightly larger than the freshman retention gap, indicating that Native American students who do successfully retain to second fall are nearly equally likely to subsequently persist and graduate as students not of color who successfully retain to second fall. Given that Native American undergraduate attrition is relatively high in the first academic year, it appears that efforts aimed toward reducing Native American student success gaps will be most fruitful if implemented during a student's first year of enrollment.

Highlights of this report's findings are as follows:

- Overall, gaps in persistence and graduation for Native American students are present in second fall and remain about the same size thereafter. This is particularly true for Native American/Multi-Racial students.
- Barriers to persistence and graduation are more prevalent across the entire undergraduate career for Native American only students, compared to students not of color and Native American/Multi-Racial.
- Gaps in third fall persistence are larger for more recent cohorts, which indicates that the persistence and graduation of Native American students relative to students not of color is declining. This trend is in opposition to other studied ethnicities, each of which has shrunk persistence gaps in recent cohorts.
- Intra-University, Natural Sciences, and Liberal Arts are the most popular cohort major colleges for Native American students. Persistence and graduation gaps are large for each of these three colleges, with Intra-University having both the largest enrollment totals and the largest persistence and graduation gaps.

Population and Student Success Outcomes

A student's ethnicity is identified by their undergraduate application materials. Except where indicated, the student counts by ethnicity used in this report are "duplicated" because multi-racial students are included in all applicable groups. For example, students who indicate they are Native American as well as Hispanic/Latino are included in both groups. About 75% of FA05-FA14 Native American freshmen report membership in more than one ethnicity. The comparison group (students not of color) includes international students, white students, and students who did not identify their ethnicity. This comparison group matches the federal and state definition for non-minority students (i.e. students not of color) and is consistently applied in all IRP&E gap analyses.

Freshman retention is measured at the start of the second fall, third fall persistence is measured at the third fall, and graduation gaps are measured at the end of six full academic years. The most recent five applicable cohorts are used for each of these outcomes. For instance, second fall retention includes FTFT students from FA10-FA14 cohorts and six year graduation includes FTFT students from FA05-FA09 cohorts. Each gap in persistence and graduation is calculated by subtracting the Native American rate from the rate for students not of color. These gaps are discussed in terms of the percentage point (PP) difference. A larger magnitude in the PP difference indicates that the Native American rate differs

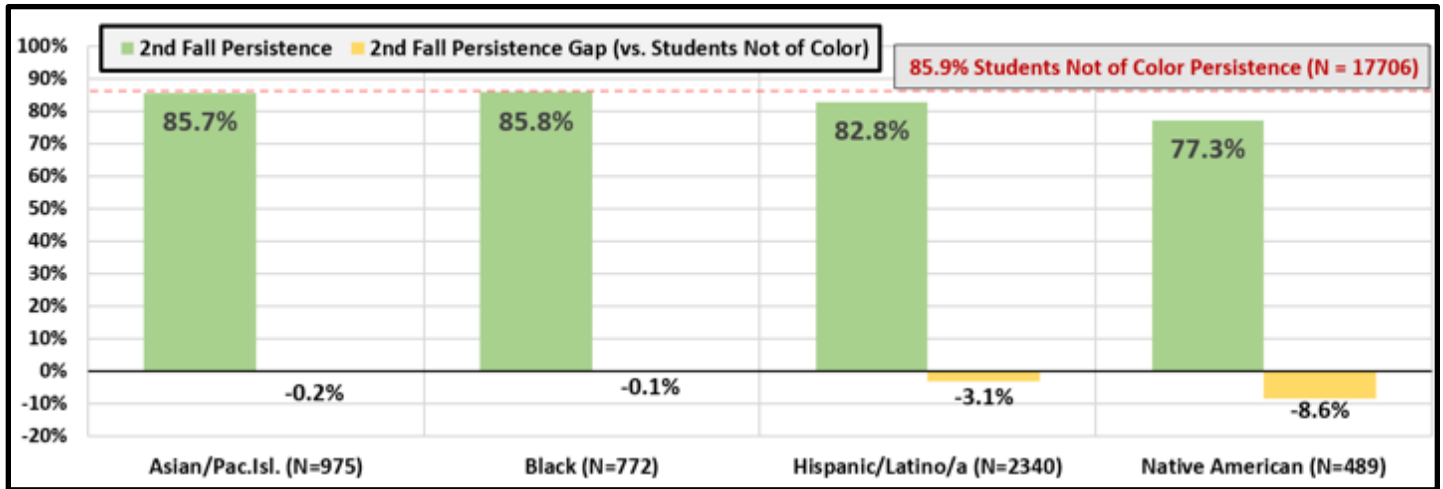
greatly from the comparison group and a small magnitude in the PP difference indicates that the Native American rate is similar to the comparison group. It is an institutional goal for all ethnicity groups to have negligible gaps in six year graduation rates.

PP Differences in Persistence and Graduation

This section explores gaps in student success (measured by PP difference) for students of color versus students not of color. This analysis does not account for any other demographic or academic differences between groups.

Figure 2 displays freshman retention rates among FTFT students in the FA09-FA13 cohorts, by duplicated ethnicity group. The green bars show retention by ethnicity group and the red line shows the comparison group rate. The yellow bars display the gaps between each group’s observed second fall persistence and the rate for students not of color.

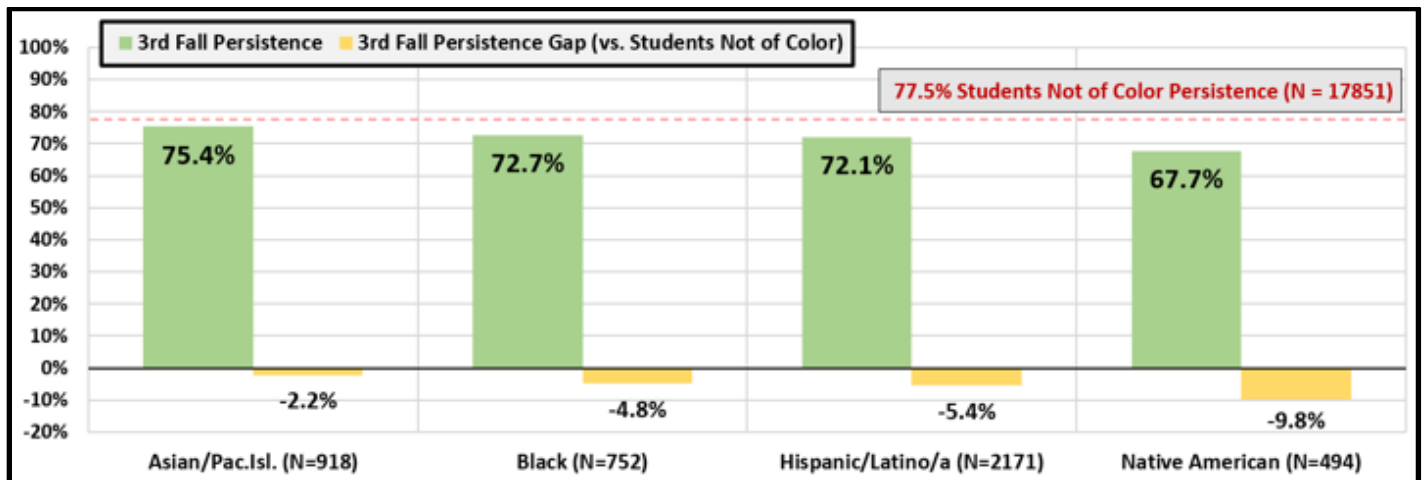
Figure 1. Freshman Retention by Duplicated Ethnicity, FA10-FA14 Freshman Cohorts



Assessing FTFT freshman retention (persistence to the second fall), we observe that Native American students in recent FA10-FA14 cohorts have an overall retention rate that is 8.6 PP lower than students not of color, 77.3% to 85.9%. This gap is much larger than the gaps observed for the other three duplicated ethnicities.

Figure 2 shows a similar chart displaying FTFT persistence to the third fall.

Figure 2. 3rd Fall Persistence by Duplicated Ethnicity, FA09-FA13 Freshman Cohorts

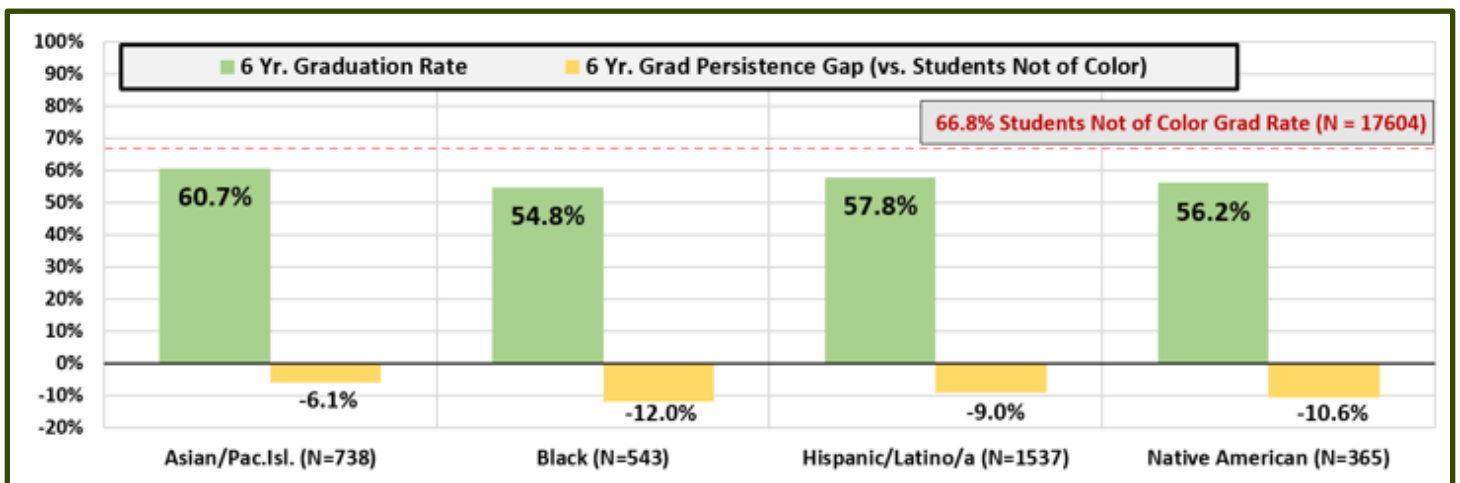


Native Americans in the studied cohorts persist to the third fall at a rate of 67.7%, which is 9.8 PP lower than the student not of color rate of 77.5%. Comparing third fall persistence gaps to the second fall gaps shown in Figure 1, we observe increases in gap size for each ethnicity group compared with students not of color. For Native Americans, the gap size between freshman retention and third fall persistence is -9.8 PP versus -8.6 PP, an increase of just 1.2 PP. The increases between third fall and second fall persistence gap size are larger for each of the other three duplicated ethnicities. This data suggests that Native American students are particularly sensitive to factors detrimental to persistence in the first year of undergraduate enrollment, yet Native American students who successfully persist to second fall are less likely to attrite during the second year of enrollment compared to other students of color.

6 Year Graduation Rates

Figure 4 is similar to Figures 2 and 3, but shows six year graduation rate gaps.

Figure 3. 6 Year Graduation Rate by Duplicated Ethnicity, FA05-FA09 Freshman Cohorts

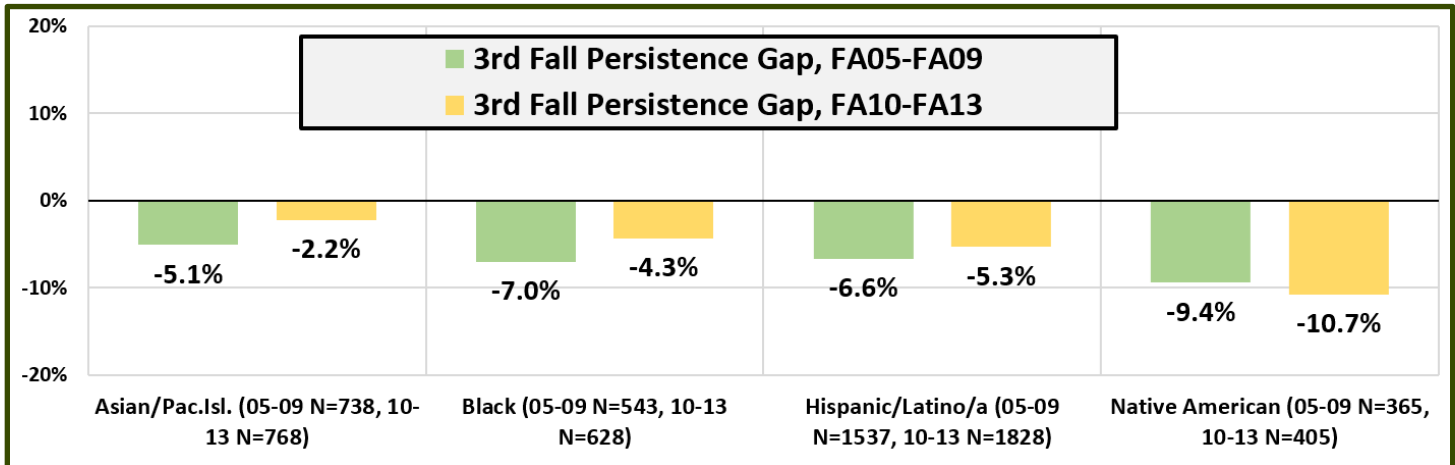


We observe that FA05-FA09 Native American students graduate within six years at a rate of 56.2%, 10.6 PP lower than the student not of color graduation rate of 66.8%. Achievement gaps increase substantially compared to the third fall persistence gaps shown in Figure 3 for all studied ethnicity groups. Among Native American students, the six year graduation gap of -10.6 PP is only 0.8 PP greater than the third fall persistence gap of -9.8 PP. Native American gaps increase only slightly over time compared to other studied ethnicities, which observe much larger graduation gaps than third fall persistence gaps. This finding supports the hypothesis that the first academic year is a critical period that presents barriers to Native American student success, while Native American freshmen who successfully complete their first academic year tend to continue persisting and graduating at rates similar to students not of color.

One potential issue with comparing the graduation gaps in Figure 3 to the third fall persistence gaps in Figure 2 is that the cohort frame is very different for the two measures, and more recent CSU freshman cohorts are more likely to persist overall compared to earlier freshman cohorts.

Figure 4 assesses changes in third fall persistence over time by comparing gaps for older cohorts (FA05-FA09) versus newer (FA10-FA13) cohorts. The difference in third fall persistence between Native American students and students not of color for older cohorts (FA05-FA09) is displayed by the green bars and the difference for newer cohorts (FA10-FA13) is displayed by the yellow bars.

Figure 4. 3rd Fall Persistence Gap vs Students Not of Color, FA095-FA09 vs. FA10-FA13



We observe that third fall persistence gaps have closed in recent cohorts for all other studied ethnicities, but have increased slightly (+1.3 PP) for Native American students. Given the strong overall relationship between third fall persistence and eventual degree completion, this trend may be troubling in light of CSU’s institutional goal to eliminate six year graduation gaps. We should expect that Native American freshmen in FA10 and more recent cohorts will display six year graduation gaps that are slightly larger than the FA05-FA09 cohorts studied in Figure 3.

PP Differences: Native American only vs. Native American Multi-Racial

This section of the report replicates the duplicated student data used above, with Native American students split into two ethnicity subgroups: Native American only, and Native American Multi-Racial. Throughout this section, students classified as Native American match the federal definition for that ethnicity group. Multi-Racial students include all students who self-classify as Native American plus one or more additional ethnicities; this group includes students federally categorized as Multi-Racial students, plus part-Hispanic/Latino students who are federally classified as Hispanic/Latino students. The same three outcome measures used in the previous section are explored, and recent cohort performance is contrasted with historical cohort performance to identify changes in student success over time.

Figure 5. Freshman Retention by Ethnicity Subgroup, FA10-FA14 Native American Cohorts

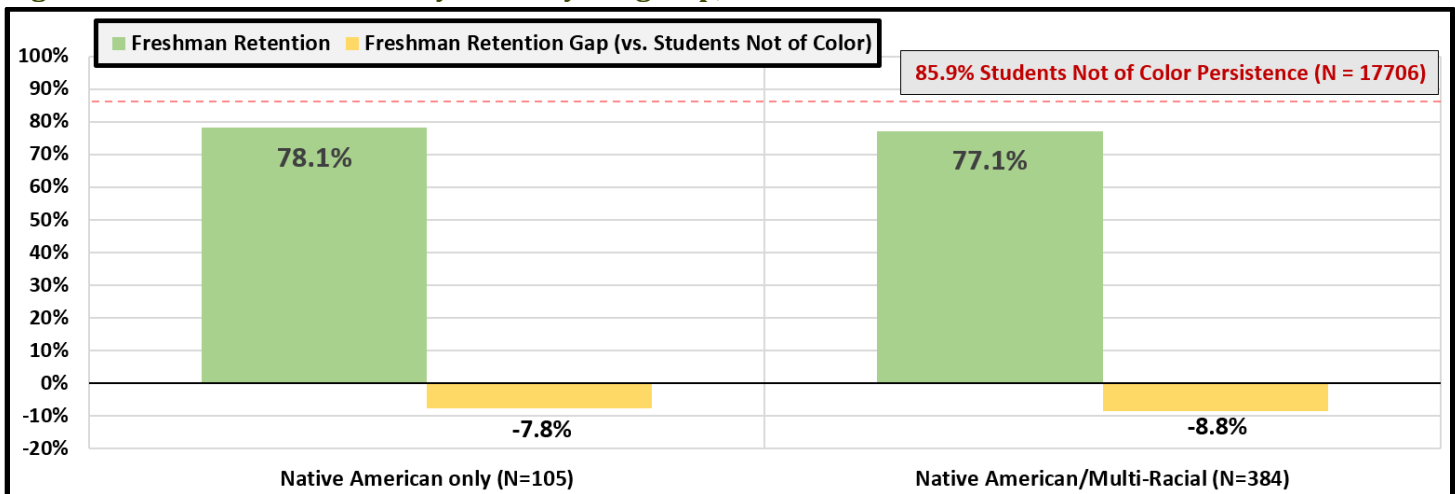
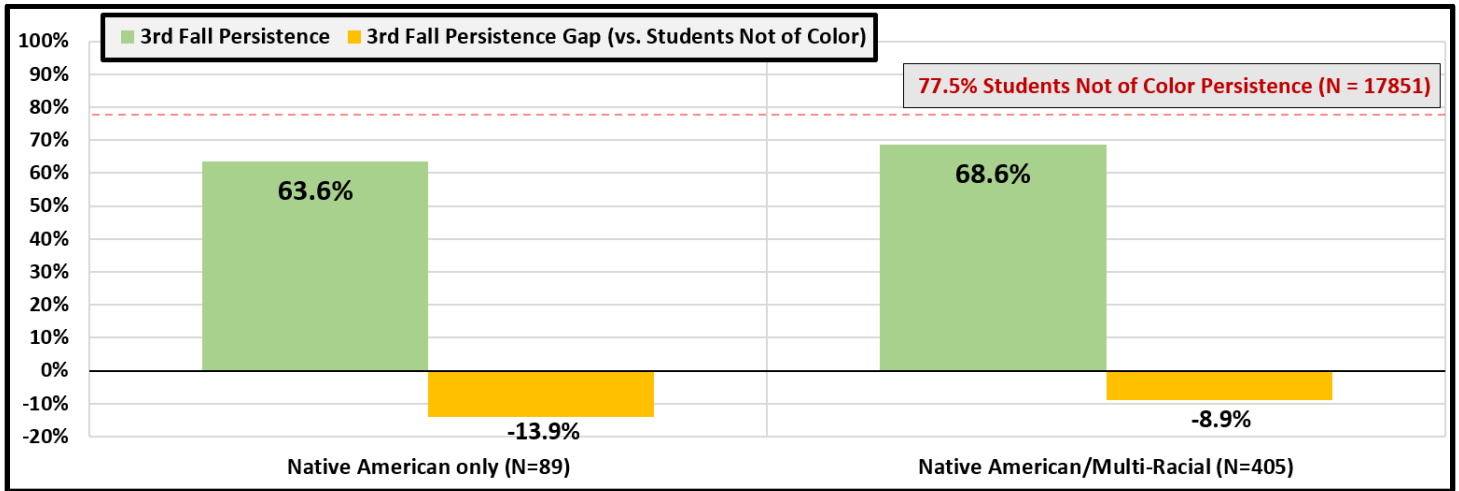


Figure 5 shows freshmen retention rate and gaps for Native American only and Native American/Multi-Racial students. Both Native American only (-7.8 PP) and Multi-Racial (-8.8 PP) students persist to the second fall at rates substantially lower than students not of color. Among these recent cohorts FA10-FA14 about 21.5% of Native American freshmen classify themselves as Native American only, while the remaining 78.5% are Native American Multi-racial.

Figure 6 separately displays third fall persistence and third fall persistence gaps for Native American only and Native American/Multi-Racial students.

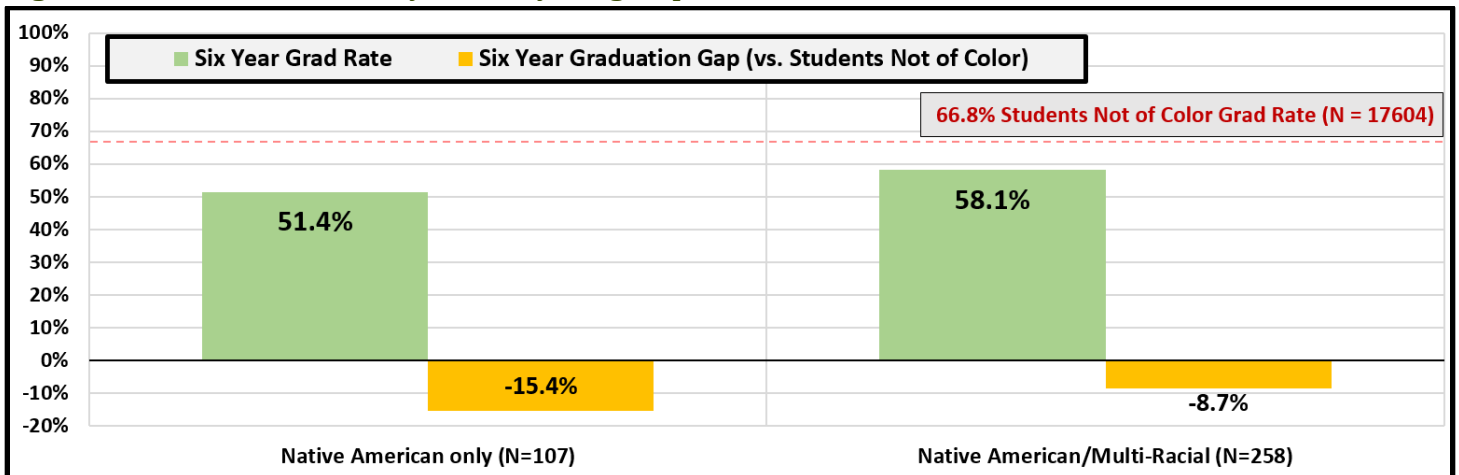
Figure 6. Third Fall Persistence by Ethnicity Subgroup, FA09-FA13 Native American Cohorts



At third fall, we observe that the Native American only persistence gap has increased to -13.9 PP compared to students not of color, an increase of 6.1 PP over the freshmen retention gap of -7.8 PP. This large increase in gap size suggests that Native American only students experience barriers to persistence during their second academic year. Among Native American/Multi-Racial students, the persistence gap size increases negligibly from second fall to third fall (-8.8 PP to -8.9 PP). Although this subgroup shows a large second fall persistence gap, attrition rates during the second academic year are thus similar to students not of color.

Figure 7 displays similarly broken-out data measuring six year graduation rates and achievement gaps among the FA05-FA09 Native American freshman cohorts.

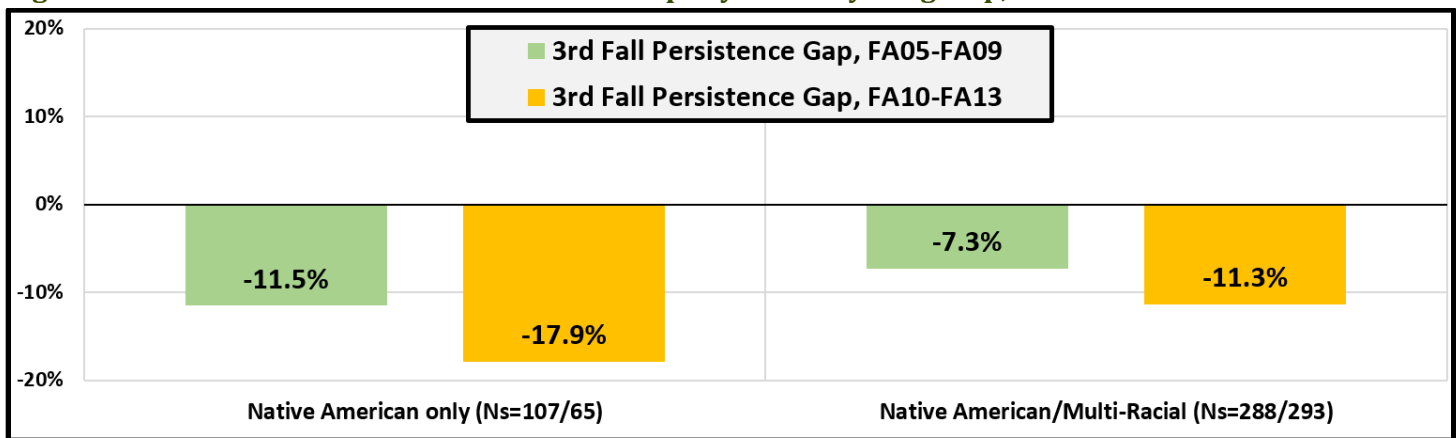
Figure 7. Six Year Grad Rate by Ethnicity Subgroup, FA05-FA09 Native American Cohorts



The six year graduation results presented in Figure 6 dovetail with the results displayed in Figures 4 and 5. For Native American/Multi-Racial students we observe a six year graduation gap (-8.7 PP) that is almost identical to the previously-observed persistence gaps (-8.8 PP and -8.9 PP). Again, this suggests that Native American/Multi-Racial students retain to second fall at lower rates than students not of color, but that successfully retained students subsequently persist and graduate at similar rates to students not of color. Among Native American only students, we observe that the six year graduation gap is larger than the third fall persistence gap. It appears that barriers to persistence and graduation are relatively more prevalent across the entire undergraduate career for Native American only students, compared to students not of color or Native American/Multi-Racial students.

Figure 8 investigates whether there have been substantial changes in third fall persistence gaps between the FA05-FA09 graduation study cohort and more recent cohorts, sliced across ethnicity subgroup.

Figure 8. Native American 3rd Fall Persistence Gaps by Ethnicity Subgroup, FA05-FA09 vs FA10-FA13



Contrasting third fall persistence gaps among the FA05-FA09 cohorts versus the FA10-FA13 cohorts reveals that gap size has increased in more recent cohorts for students in both ethnicity subgroups. Gap size has increased by 4.0 PP for FA10 and newer Native/American Multi-Racial cohorts, and has increased by 6.4 PP for FA10 and newer Native American only cohorts. These increases in gap size suggest that FA10-FA13 freshmen in both ethnicity subgroups are likely to display larger six year graduation gaps than the gaps shown in Figure 7 for the FA05-FA09 cohorts.

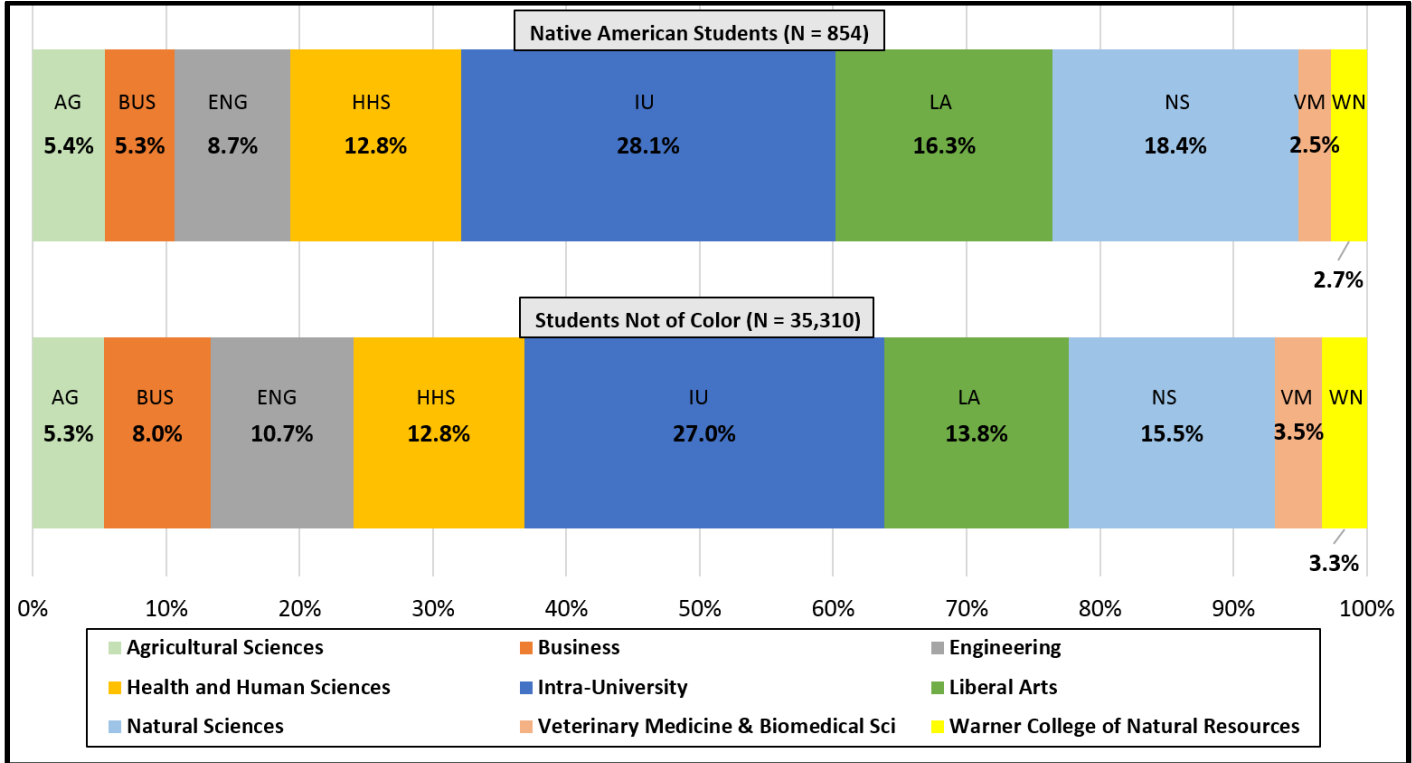
Native American Enrollment and Success by College

This section focuses on the enrollment and success of Native American students by cohort major college. In this section any student who reports partial or full Native American ethnicity is counted once as a Native American student.

Distribution of First Fall Majors, by College

Figure 9 displays the cohort major distribution of FTFT Native American students across all studied cohorts FA05-FA14. The distribution of majors among students not of color is included for comparison.

Figure 9. % Cohort Major College, Native American & Students Not of Color FA05-FA14

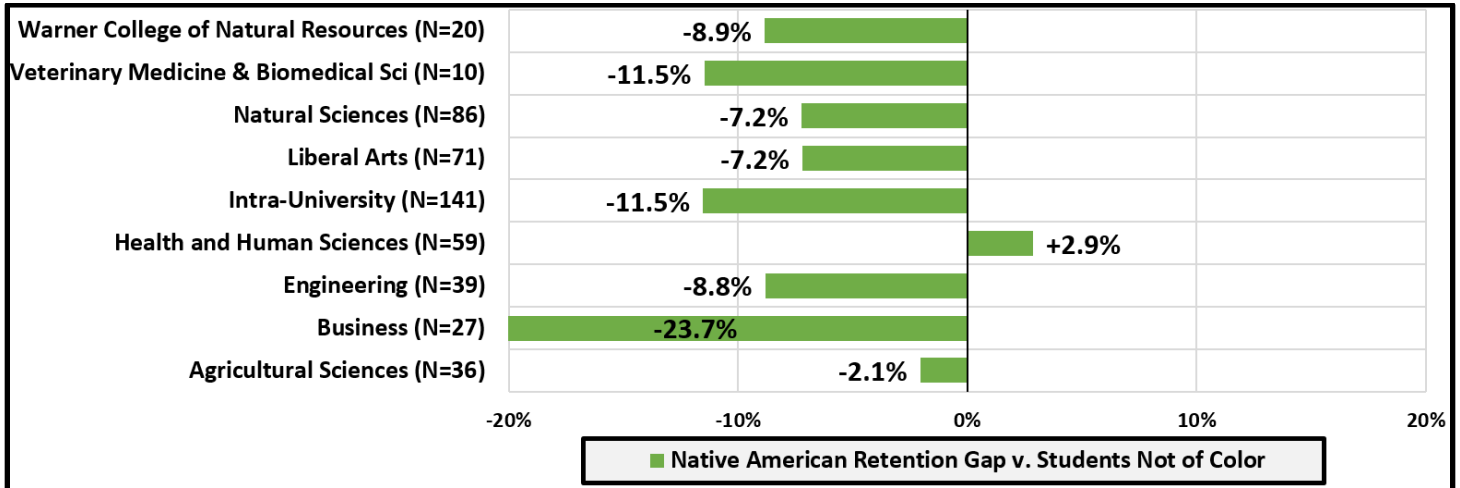


Across the FA05 through FA14 FTFT cohorts there are 854 freshmen who self-classified as partially or only Native American, compared to 35,310 freshmen students not of color. The distribution of cohort major college is largely similar for Native American students and students not of color, though enrollment proportions differ by 2 or more PP for a few colleges. Native American students are over-represented compared to students not of color in the Liberal Arts (16.3% vs. 13.8%) and Natural Sciences (18.4% vs. 15.5%), but are under-represented in Business (5.3% vs. 8.0%) and Engineering (8.7% vs. 10.7%). Native American students are also slightly under-represented in Veterinary Medicine and Biological Sciences (2.5% vs. 3.5%). Intra-University undeclared is the most common cohort major college for both Native American students (28.1%) and students not of color (27.0%).

Percentage Point Differences in Native American Student Success, by College

Figure 10 displays the PP gaps in second fall persistence for FA10-FA14 Native American students by cohort major college.

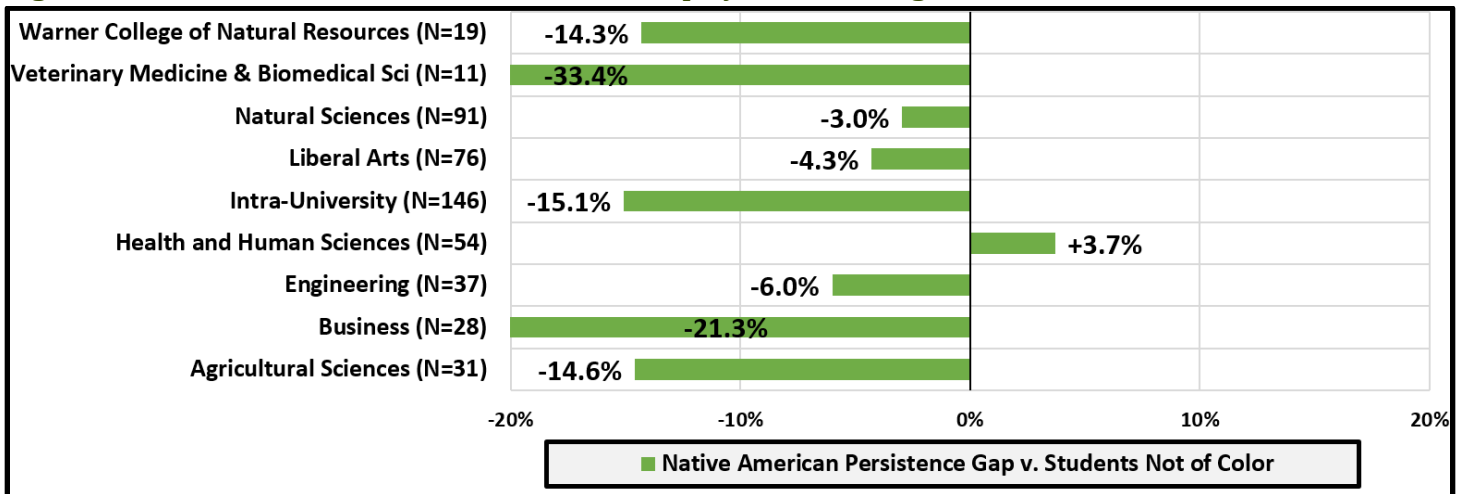
Figure 10. Native American Freshman Retention Gap by Cohort College, FA10-FA14 Cohorts



Given the low number of Native American students in any given five-year cohort range, it is important to interpret findings in this section cautiously as many by-college sample sizes are very small. Among FA10-FA14 cohorts, Native American students with a cohort major in Health and Human Sciences retain to the second fall at rates higher (+2.9 PP) than students not of color with a cohort major in that college. Across all other cohort colleges Native American freshmen retain to the second fall at rates that are substantially lower than students not of color. The observed retention gaps are of particular concern for colleges with the greatest Native American enrollments including Intra-University (N=141), Natural Sciences (N=86), and Liberal Arts (N=71).

Figure 11 is a similar chart showing Native American third fall persistence gaps by College among the FA09-FA13 cohorts.

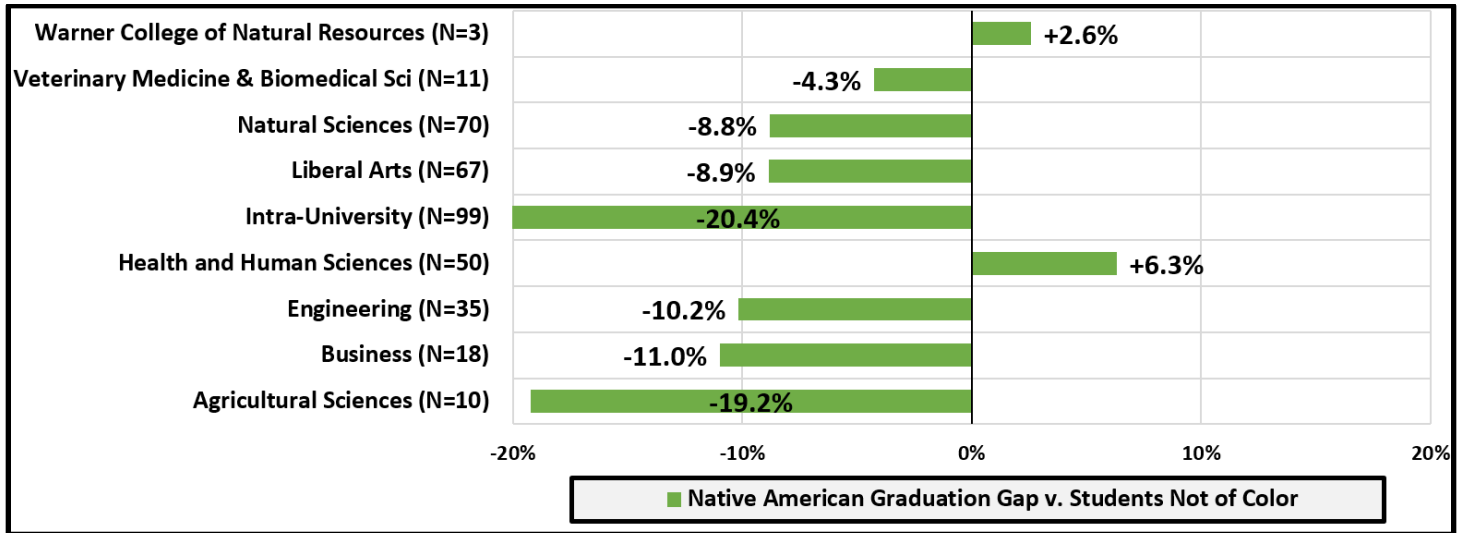
Figure 11. Native American 3rd Fall Persistence Gap by Cohort College, FA09-FA13 Cohorts



Similar to the freshman retention findings presented in Figure 10, we observe that Native American freshmen with a cohort major in Health & Human Sciences persist to third fall at higher rates than students not of color from that college. For all other colleges substantial gaps exist, although the third fall persistence gaps for Liberal Arts and Natural Sciences are both smaller than the corresponding Figure 10 freshman retention gaps. Persistence gaps are large in the colleges with lowest Native American enrollments (VMBS, Warner College, Business, Agricultural Sciences). The third fall gap for Intra-University is also large (-15.1 PP) and may be of particular interest given the relatively sizable sample (N=146).

Figure 12 displays Native American six year graduation gaps compared to students not of color, by college.

Figure 12. Native American Six Year Graduation Gap by Cohort College, FA05-FA09 Cohorts



Consistent with the findings of Figures 10 and 11, we observe that Native American freshmen with a cohort major in Health and Human Sciences graduate at rates that are above the freshman not of color rate for that college. The sample of 3 for Warner College is too small for meaningful interpretation, despite the positive gap direction. For all other colleges there is evidence of a six year graduation gap. Once again, the graduation gap is highest for cohort Intra-University undeclared students, reinforcing the observation that Native American freshmen who matriculate with Intra-University undeclared status are at particular risk of non-success compared to Intra-University students not of color.

Conclusions

Comparing all FTFT Native American freshmen to freshmen students not of color we observe a sizable freshman retention gap but little evidence that the gap grows larger on measures of third fall persistence or six year graduation. Overall it appears that Native American freshmen experience substantial barriers to second fall persistence during their first academic year. These gaps persist consistently over time, although they do not grow larger. This is different from other studied ethnicity groups, where gaps are smaller at second fall but continue to grow larger when measured at third fall and six year graduation. Given the lack of gap size increase over time for Native American students, efforts focused on improving overall Native American student success may be most fruitful if implemented during the first year of enrollment at CSU.

Separate analysis of Native American only and Native American/Multi-Racial students reveals that persistence gaps exist across both subgroups but are generally larger for Native American only students than Native American/Multi-Racial students. Native American/Multi-Racial students, who comprise over 80% of Native American students overall, show little evidence of increased gaps over time while Native American only students show strong evidence that gaps increase over time. This finding suggests that Native American only students are more susceptible to factors impeding student success after the second fall semester than either Native American/Multi-Racial students or students not of color.

Comparison of gaps between the FA05-FA09 versus FA10-FA13 cohorts reveals that Native American third fall persistence gaps have actually increased in size for the more recent cohorts. This finding is in contrast to all other studied ethnicity groups, for whom the third fall persistence gap is substantially smaller for recent cohorts compared to older cohorts. This finding bodes poorly for the Native American six year graduation rates that will be observed for the FA10-FA13 cohorts in upcoming years.

Students' cohort college may be one strategic factor to consider when designing interventions for Native American undergraduates. For instance third fall persistence and graduation gaps among Intra-University undeclared students are large and Native American enrollments in Intra-University are also quite large, which suggests that group may be a fruitful target for intervention. Students with a cohort major in Natural Sciences and Liberal Arts are other potential targets for intervention, as those colleges enroll substantial numbers of Native American freshmen yet graduate those students at rates about 9 PP lower than students not of color.