



Associations between Summer Enrollment and Student Success

The purpose of this report is to describe the association between summer session enrollment and student success (measured by persistence, graduation, GPA) among first-time, full-time (FTFT) cohorts at CSU. This report is an update of a report published in July 2017.

Executive Summary

There are academic and demographic differences by summer enrollment status. Summer enrollees have a slightly lower average index compared to students that do not enroll in a summer session (about .6 of an index point). Males, first generation students, Pell recipients, and students of color are also underrepresented in the summer enrollee group. Although, Pell recipients have the lowest representation among students that enroll in the summer, which could suggest financial concerns hinder summer enrollment for low-income students. Please note that the bivariate analyses of the association between summer enrollment and student success do not account for these academic and demographic differences.

There appears to be a positive association between summer enrollment and graduation as well as between summer enrollment and persistence. About 60% of all FTFT students enroll in at least one summer session and 65% of students that graduate in 6 years enroll in a summer session. This positive association also appears to vary by summer enrollment term. For instance, the association between summer enrollment and graduation is strongest for students that enroll during their second summer. On the other hand, there does not appear to be an association with efficiency towards degree and summer enrollment. The average number of terms between a student's first fall semester at CSU and their graduation term are greater among students that enroll in one or more summers compared to students that do not enroll in any summer terms.

The magnitude and variation between summer enrollment and graduation appears to be similar for nonresidents, students of color, and Pell recipients compared to the overall results. This statement also holds for all racial/ethnic identities as well as academic colleges. However, the positive associations are somewhat stronger for first generation students. There is nearly a 10 percentage point gap in the four year graduation rate among first generation students that enroll in their third summer term compared to first generation students that do not enroll in their third summer term. Summer enrollment could be a possible avenue for helping to close the graduation gaps for first generation students.

While this report focuses on a bivariate analysis of summer enrollment and student success, results are consistent with a multivariate analysis (see [Multivariate Associations between Summer Enrollment and Graduation](#)). In that study, after controlling for students' academic and sociodemographic characteristics, enrollment in the summer term (especially the second and third summers) significantly increased the odds for graduation for most, if not all, student groups (Pell recipients, racially minoritized, first generation, etc.).

Summer enrollment is higher among students on academic probation. About 12% of students that enroll in their first summer term are on probation at the end of their first spring compared to the 10% of probation students that do not enroll in their first summer term. Summer enrollment has a positive association with moving to good academic standing for these students on probation. About 41% of the students on probation at the end of the first academic year move into good academic standing by the end of their second fall semester (compared to



only 23% of the students on probation that do not enroll in during the first summer). These results suggest that summer enrollment is an important academic behavior for improving academic performance among students that struggle during their first year. However, only 10% of first spring probation students enroll in their first summer. It could be a struggle to increase summer enrollment among first-year students on probation.

Summer enrollment is not associated with a higher subsequent fall GPA compared to the fall GPA among non-summer enrollees; however, the average term GPA in summer does tend to be higher compared to average term GPA in the fall or spring. Among students that are on probation at the end of their first spring semester, the students' summer term GPA is about one full grade point higher, on average, than their GPA during the spring semester. Students with lower GPA's tend to enroll in their first summer term, and summer enrollment, on average, results in a higher term GPA for those students. Summer session enrollment does have a bigger impact on the probation students' decisions to continue enrollment; overall, a 10 PP or greater difference in 4, 5 and 6-year graduation rate was found between those probation students who enrolled during the summer versus those who did not.

Data

Summer session enrollment is measured by being enrolled at census or end of term in RI or online classes during a summer term. This definition is broader than the published summer term enrollment numbers (RI and census only) in order to account for the more varied opportunities for enrollment in summers. The population included in this analysis are FTFT students from the FA08 through FA17 cohorts. Summer is considered at the end of the fall/spring academic year so a student's first summer term is their third term of enrollment at CSU (first fall, first spring, and then first summer).

Student Success Outcomes

Student success is measured across the following variables:

- Persistence (second, third, and fourth fall semesters)
- Graduation (4, 5, and 6 year)
- Time to Graduation
- Grade Point Averages
- Probation Rates

Methodology

The longitudinal nature of summer enrollment makes the comparisons with student success complicated from a methodological standpoint. In order to control for the fact that summer enrollment requires persistence beyond semesters that have large attrition rates, the association between summer enrollment status and success is measured among students who persist to the point of having the opportunity to be enrolled in the specified summer. For instance, graduation and persistence rate differences by first summer enrollment status are measured only among students who persisted to the census of spring semester prior to the stated summer term to ensure that both groups had the opportunity to enroll in their first summer term. Similarly, differences by second summer enrollment status are assessed only among those that persist to their second spring semester. This is necessary to ensure that the positive associations between summer enrollment and graduation are not primarily explained by the student persisting to a term past their cohort term, which is also strongly associated with success. Because of these methodological adjustments, rates presented in this paper do not match the typical cohort CSU rates. Additionally, rates in this bivariate analysis do not account for demographic or academic differences by summer enrollment status.



Demographics

Table 1, below, displays the demographic attributes of students by summer enrollment status. Students that enroll in one or more summers are included in the summer enrollment group. The data is limited to FTFT students that persisted to their first spring semester from the FA08-FA14 cohorts (about 60% of all students enroll in at least one summer if they started at CSU at least four summers ago).

Table 1. Demographics of FTFT Students from FA08-FA14¹ by Summer Enrollment Status

	Index (Avg)	Male (%)	Non-resident (%)	First Generation (%)	Pell Recipient (%)	Racially Minoritized (%)
Summer Enrollment ²	114.6	42.8%	23.8%	21.4%	17.5%	16.7%
Did not enroll in a Summer Term	115.1	47.3%	22.6%	27.2%	23.8%	19.0%

¹ Cohorts are limited to those that have the opportunity to enroll in at least four summer sessions (FA08-FA14) and to those that persisted to their first spring semester.

² Summer enrollment includes students who enrolled in at least one summer session.

The average index score for students that complete a summer session is about .6 points lower compared to the average index among students that never enrolled during a summer term. Male students are underrepresented among the summer enrollment group along with first generation, Pell recipients, and students of color. This underrepresentation is largest for Pell recipients with a 6.3 percentage point (PP) difference in the summer enrollment group. This PP gap is calculated by subtracting the Pell rate among the summer enrollment group (17.5%) from the non-summer enrollment group (23.8%). Please note that Pell recipient status and residency are measured during a student's cohort term even though this status can change each year.

Student Success by Summer Enrollment

This section explores associations between summer enrollment and student success. Each student success outcome is addressed in its own section.

Persistence

Table 2, below, displays the persistence rates by summer enrollment. In order to account for the time varying nature of summer enrollment, this analysis is limited to students that persist to the spring semester prior to the summer term that is before the persistence measure. For instance, 4th fall persistence is only measured among students who persisted to their third spring semester. This ensures that all of the students included in the fourth fall persistence measures had equal opportunity to enroll in their third summer. This adjustment is important because if prior spring persistence is not accounted for the difference in 4th fall persistence by 3rd summer enrollment status increases to 34 PP (compared to the 3 PP difference presented in the table below). This large difference in the gaps is largely because the majority of students who do not enroll in their third summer also do not persist to their third spring semester.

Table 2. Persistence Rates³ by Summer Enrollment

	2nd Fall Persistence	3rd Fall Persistence	4th Fall Persistence
Prior Summer Enrollment	96.5%	98.0%	98.7%
Did Not Enroll in Prior Summer	88.2%	91.7%	95.8%

³ Analysis is limited to students that persisted to the spring semester prior to the summer before the persistence measure.

There is a slight positive association with summer enrollment and persistence. This association appears to be stronger in the first summer (prior to the 2nd fall) and decreases in magnitude for the second and third summers.



For instance, There is an 8 PP gap by prior summer enrollment for 2nd fall persistence (96.5 minus 88.2), but a 6 PP gap for 3rd fall and a 3 PP gap for 4th fall.

Graduation

Table 3 displays the percentage of FTFT students that participate in any summer session and the percentage of 4, 5, and 6 year graduates.

Table 3: Percentage of Students that Enroll in One or More Summer Sessions

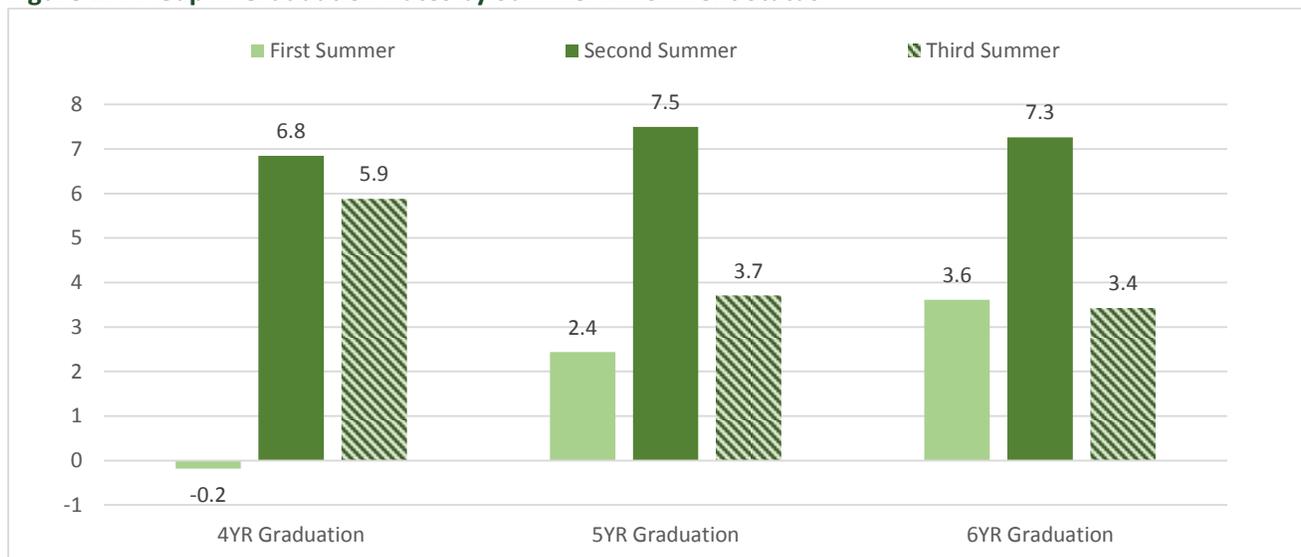
	Percent
FTFT Students from FA08-FA14 ⁴	59.4%
4 YR Graduates	61.6%
5 YR Graduates	64.5%
6 YR Graduates	65.3%

⁴ Cohorts are limited to those that have the opportunity to enroll in at least four summer sessions based on their first term and persist to their second fall semester.

Summer enrollment appears to have a slightly positive association with student success. For instance, among students who graduate within 4 years, about 62% of them enrolled in a summer session, which is about 2 PP higher than all students (61.6 minus 59.4). Note that the rate of summer enrollment increases as the graduation year increases, which is partially due to students having more opportunities to enroll in the summer. For instance, about 65% of students that graduate in 6 years participated in at least one summer session; however, only 64% of these 6 year graduates participated in a summer session that was before their fifth summer.

Figure 1 displays the gaps in graduation rates by specified summer of enrollment in order to assess if the timing of summer enrollment is differentially associated with student success. The PP gap is calculated by subtracting the non-summer enrollment rate from the summer enrollment rate. A negative gap indicates that the summer enrolled group has a lower graduation rate compared to the non-summer group and a positive gap indicates that the summer enrolled group has a higher graduation rate. The rates that these PP gaps are calculated with can be found in the Appendix.

Figure 1. PP Gap in Graduation Rates by Summer Enrollment Status



Note: Students are limited to those who persist to the preceding spring semester (e.g., second summer analysis is limited to students that persist to their second spring semester)



The association between summer enrollment and graduation does appear to vary over time. There is no association for first summer enrollment on four year graduation but is positive for first summer on five and six year graduation. The association is positive for 4, 5, and 6 year graduation rates for second and third summer enrollment; however, the magnitude of the positive difference is larger for second summer compared to first or third summer. For instance, the 6-year PP gap by summer enrollment is about 3.5 for the first and third summer enrollment but the PP gap is 7.3 for second summer (88.5% minus 81.2%, see Figure A 1, p. 12). Enrollment in the second summer term (as students transition into Junior year) could be an avenue for increasing overall graduation rates at CSU.

The PP differences in graduation rates by summer enrollment for first generation students, Pell recipients, racially minoritized students, and nonresidents are shown in Figures A.2 through A.5 in the appendix. The time varying positive association between summer enrollment and graduation appears to follow a similar pattern and magnitude for nonresidents, students of color as well as Pell recipients. The association appears to be strongest for third summer enrollment among first generation students. There is nearly a 10 PP difference in the 4 year graduation rate by third summer term enrollment for first generation students (compared to about 6 PP in Figure 1). This indicates that summer enrollment does not have a differentially negative association for demographic groups that have historically lower graduation rates (i.e., increasing summer enrollment among these groups should not have unintended negative consequences on their student success outcomes) and could possibly have a stronger association for first generation students.

Delving deeper into student demographics, the summer enrollment continues to have a positive association with graduation rates for students of all racial and ethnic backgrounds as well as international students (see Figures A 8-13 in the appendix). Among all these subgroups, the association tends to be strongest in the second or third summer enrollments. For example, Asian and Hawaiian/Pacific Islander students appear to reap the greatest benefit at the second summer enrollment. At this interval, a 6 PP gap in 4, 5, and 6 year graduation rates occurs between those who enrolled in summer session versus those who did not (compared to 3 PP or less at the first and third summers). For Hispanic/Latinx students, a 9 PP difference in graduation rate occurs at the first (4 year graduation) and second summers (5 and 6 year graduation). Overall, encouraging students from racial and ethnic minorities to enroll in summer session could help gap-closing efforts.

The PP differences in graduation rates varied by college (Figures A 14-22 in the appendix), yet the overall association between summer enrollment and graduation remained positive. For example, in the College of Agricultural Science, an almost 20 PP difference in 6-year graduation occurred at a first summer enrollment, compared to 13 PP at second summer and 8 PP at third summer. In the College of Liberal Arts, the association was strongest at second summer for all graduation rates, at least 6 PP or higher at second summer compared to 3 PP or less at first and third summer.

Time to Graduation

Time to graduation is a measure of efficiency towards degree among students that graduate. The average terms to graduation represent the average count of terms (including summer terms and regardless of enrollment) from a student's cohort term (first term at CSU) to their graduation term. This count includes summer and is regardless of enrollment, i.e., gap terms are still included in the count. Overall at CSU, the average time to graduation for 2015-16 graduates is 12.1 (reference [link](#)), which is just over four academic years.

Table 4 displays the average terms to graduation by the number of summers enrolled for FTFT students that earn their undergraduate degree from the FA08-FA12 FTFT cohorts.



Table 4. Average Time to Graduation⁵ by Number of Summers Enrolled

Number of Summers Enrolled	Headcount	AVG Terms ⁶ to Graduation
None	10,465	11.9
One summer	6,310	12.1
Two summers	3,469	12.5
Three summers	1,235	13.3
Four or more summers	269	15.2

⁵ Limited to graduates from the FTFT FA08-FA12 cohorts

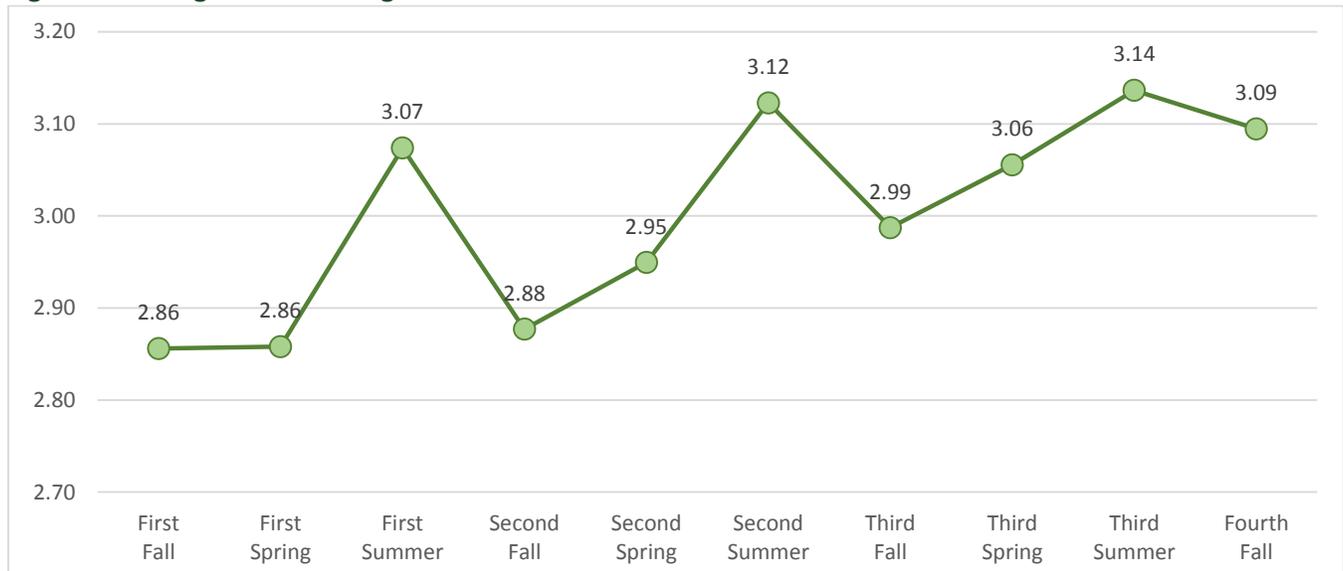
⁶ Terms to graduation is a count of the terms (including summer and regardless of enrollment) between the graduation term and the cohort term

The average time to graduation has a statistically significant positive association with the number of summers enrolled. For instance, graduates that never enroll in a summer term take just under four academic years to earn their degree (11.9 terms); however, students that enroll in only one summer session take just over four academic years to earn their degree (12.1 terms) and students that enroll in three summers take about four and a half years to earn their degree (13.3 terms). In other words, enrolling in a summer term does appear to be associated with slightly longer times to graduation.

Grade Point Averages

Figure 2, below, displays the average term GPA for students' first through fourth fall terms by summer term enrollment status.

Figure 2. Undergraduate Average Term GPA



Note: Students are limited to the FA08-14 cohorts.

On average, term GPA increases each subsequent term, e.g., third fall has a slightly higher average compared to first fall. Additionally, summer term GPA is substantially higher than fall or spring term GPA. For instance, the average first summer term GPA is 3.07 grade points, but the average first spring and first fall GPA is about 2.9 grade points. This indicates that summer enrollment should have a positive association for increasing individuals GPA.



Table 5 displays the end of fall term and cumulative undergraduate GPA by prior summer term enrollment. This data can be used to assess if prior summer enrollment is associated with a higher cumulative or term GPA in the subsequent fall semester.

Table 5. GPA by Summer Enrollment

		Cumulative GPA	Term GPA
Second Fall End of Term	First Summer Enrollment	2.94	2.76
	Did Not Enroll in First Summer	2.98	2.90
Third Fall End of Term	Second Summer Enrollment	3.06	2.95
	Did Not Enroll in Second Summer	3.06	3.00
Fourth Fall End of Term	Third Summer Enrollment	3.04	3.04
	Did Not Enroll in Third Summer	3.12	3.14

Term and cumulative GPA are consistently lower in a specified fall semester for students enrolled in the prior summer compared to those that did not enroll in a prior summer. The gap in term GPA is largest in the second fall and smallest in the third fall. Please note, this analysis does not control for the GPA prior to summer enrollment. The lower GPA among summer enrolls could be explained by students having lower GPAs prior to the summer term.

Probation Rates

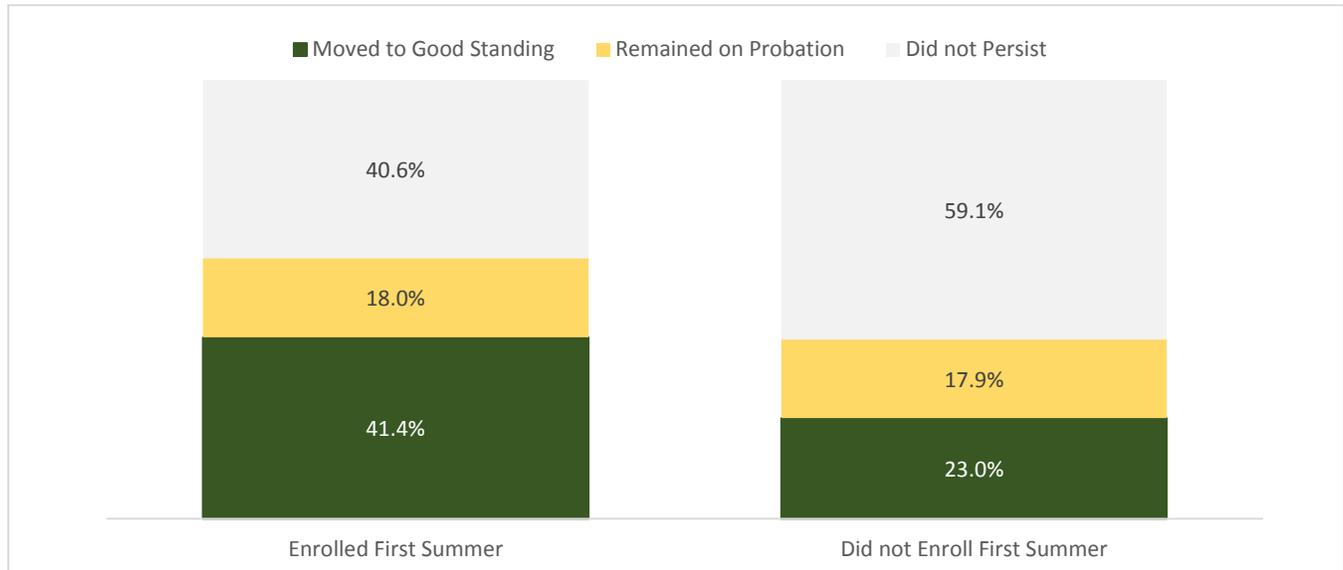
This section explores how summer session enrollment is associated with moving from academic probation to good academic standing.

Students on academic probation at the end of their first spring semester enroll in first summer term at higher rates. About 12% of students that enroll in summer session during their first summer term are on academic probation at the end of their first spring semester in comparison to a 10% probation rate among the students that do not enroll in their first summer term. This association is not true for second and third summer sessions. For instance, about 2% of students enrolled in the second summer session were on probation at the end of their second spring semester and less than 4% of students that do not enroll in the second summer session were on probation at the end of their second spring. Additionally, among all the students on probation at the end of their first spring semester only about 10% of them enroll in their first summer session. Although probation students are overrepresented in the first summer, the majority of first spring probation students are avoiding enrollment during the first summer. Most of these first year probation students do not persist to the end of their second fall.

Figure 3 displays the second fall academic success patterns for students on probation at the end of their spring semester by first summer enrollment status.



Figure 3. Second Fall EOT Probation Status for Students on Probation at EOT First Spring by Summer Enrollment Status



Note: Excludes FA17 due to timing of the analysis

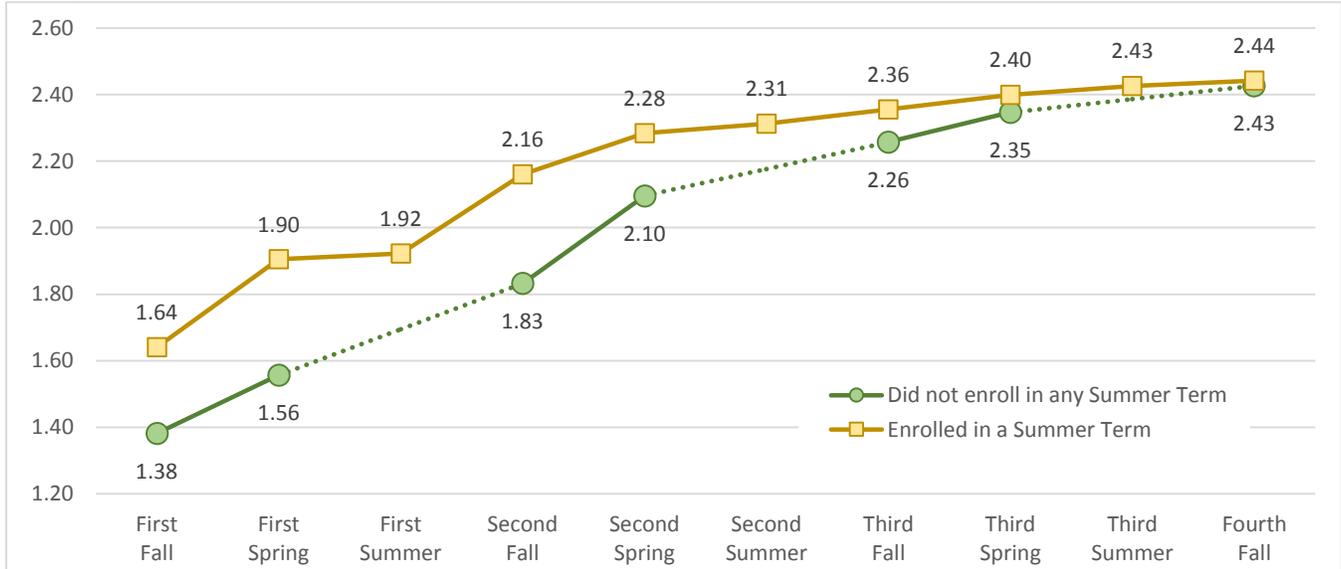
The proportion of students that moved from probation at the end of the first spring semester to good academic standing by the end of the second fall semester is much higher for students that attended summer session during their first summer compared to the first spring students that did not enroll in their first summer (about 41% compared to 23%). The 41.4% (as shown in figure 3) of summer enrollees that move to good academic standing is about 23 students per cohort compared to the 89 non-summer enrollee students per cohort (23.0% of the non-summer enrollees) that move to good academic standing. This indicates that the proportion of first-year probation students that enroll in summer needs to increase in order for this positive association to have a meaningful impact on CSU’s overall percent of students that move from first-year probation to good academic standing after the second fall semester.

Additionally, the attrition rate for the end of second fall semester is much lower for first summer enrollees (40.6%) compared to students that did not enroll in the first summer (59.1%). These statistics indicate a positive association between second fall academic success and first summer enrollment for students that are on academic probation at the end of their first academic year. Among students on probation at the end of the first spring semester, the average term GPA for the summer increases about one full grade point compared to their first spring GPA. Individuals in good academic standing at the end of the first year also have a higher term GPA in the summer compared to the spring but this difference is much smaller in magnitude (about one-tenth of a grade point). This also indicates that summer enrollment might be one avenue for helping students move to good academic standing if they are on probation at the end of their first academic year.

Figure 4 displays the average cumulative GPA for students on academic probation during their first year by first summer enrollment status.



Figure 4. Undergraduate Average Cumulative GPA by Summer Enrollment Status for Students on Probation during their First Year

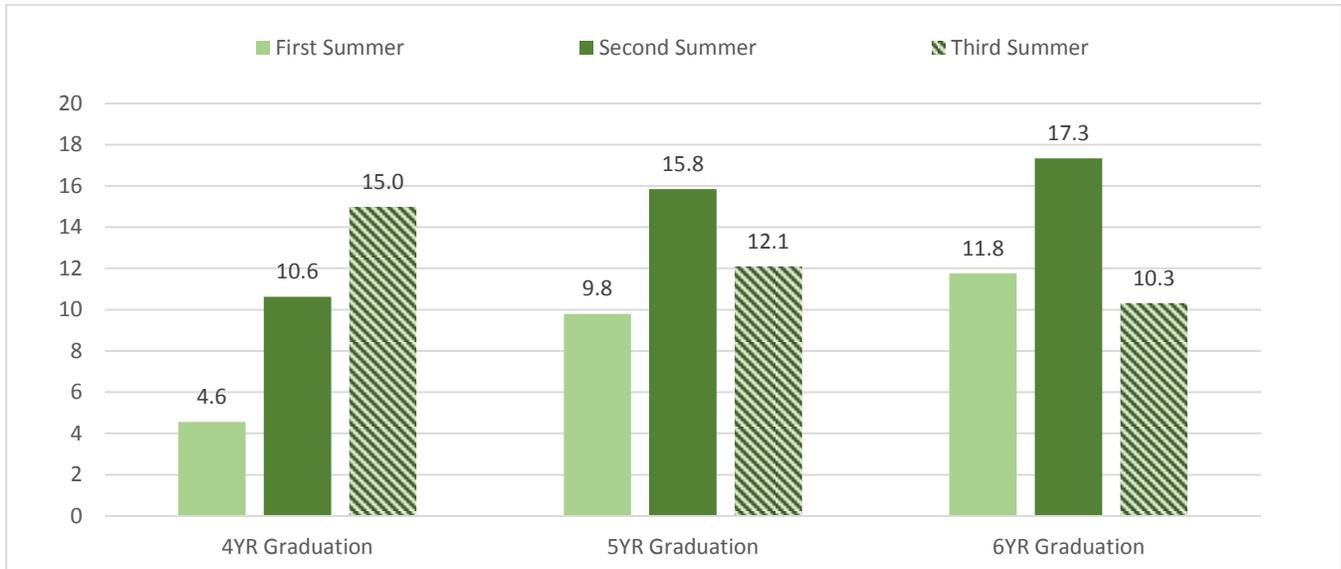


Note: Students are limited to the FA08-14 cohorts who were on probation in their first fall and/or first spring semester.

Overall, the difference in cumulative GPA by summer enrollment for students on academic probation during their first year was slight, generally less than one-third of a grade point term-over-term. It should be noted that students must persist to have a GPA; therefore, summer enrollment has a negligible association with GPA among the first year probation students that persist to each subsequent semester.

Figure 5 displays the PP gaps in graduation rates by summer enrollment for probation students.

Figure 5. PP Gap in Graduation Rates by Summer Enrollment Status for Students on Probation during their First Year



Note: Students are limited to those who persist to the preceding spring semester (e.g., second summer analysis is limited to students that persist to their second spring semester)



While a positive association between enrolling in the first summer and cumulative GPA does not exist, summer session enrollment does have a bigger impact on the decisions to continue enrollment. For summer students on probation, except for the first summer (4-year graduation), a 10 PP or greater difference in graduation rate occurs for all summer terms at each graduation interval. Thus, probation students' commitment to summer session may lead to greater commitment their overall education.

Conclusions

Summer enrollment appears to be a positive academic behavior in terms of persistence and graduation, especially for students that struggle during the first academic year. Students that enroll in one or more summer session persist and graduate at higher rates compared to students that do not enroll during the summer. Summer enrollment is not associated with a higher GPA, but summer enrollment does appear to help students move from probation to good academic standing and improve the individual's term and GPA. Additionally, summer enrollment does not appear to decrease the time to degree completion.

Diverse populations (Pell recipients in particular) are underrepresented among summer enrollees. This could indicate that finances make summer enrollment a more difficult academic choice for low-income populations. However, there is some correlational evidence that summer enrollment has a differentially positive association for first generation students' likelihood of graduating. This suggests the importance of removing barriers of summer enrollment for groups that have been historically underserved at CSU.



Appendix: Graduation Rates by Summer Enrollment Status

The following tables display the graduation rates for populations of interest by specified summer enrollment in order to assess if the timing of summer enrollment is differentially associated with student success. For all rates reported:

- First summer enrollment is limited to students that persisted to their first spring semester
- Second summer enrollment is limited to students that persisted to their second spring semester
- Third summer enrollment is limited to students that persisted to their third spring semester

The PP gaps presented in Figures 1 and 5 were derived from the data presented in Figures A 1 and A 2 and are repeated on the following pages. Figures A 3 through A 7 display the PP differences for key populations of interest: nonresidents, Pell recipients, first generation students and racially minoritized students, as well as students with any combination of these characteristics. Figures A 8 through A 13 display results by student-identified racial and ethnic groups. Because students can identify with more than racial or ethnic group, they may be included in more than one figure. Figures A 14 through A 22 display results by college.

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Figure A 1. Overall Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	4,896	45.2%	69.8%	74.6%
	Did Not Enroll in First Summer	37,542	45.4%	67.4%	71.0%
	Difference (enrolled – not enrolled)		-0.2%	2.4%	3.6%
Second Summer Enrollment	Enrolled Second Summer	9,687	58.0%	84.4%	88.5%
	Did Not Enroll in Second Summer	22,465	51.2%	76.9%	81.2%
	Difference (enrolled – not enrolled)		6.8%	7.5%	7.3%
Third Summer Enrollment	Enrolled Third Summer	9,781	61.2%	87.9%	92.3%
	Did Not Enroll in Third Summer	16,463	55.3%	84.2%	88.9%
	Difference (enrolled – not enrolled)		5.9%	3.7%	3.4%

Graduation Rate PP Gap

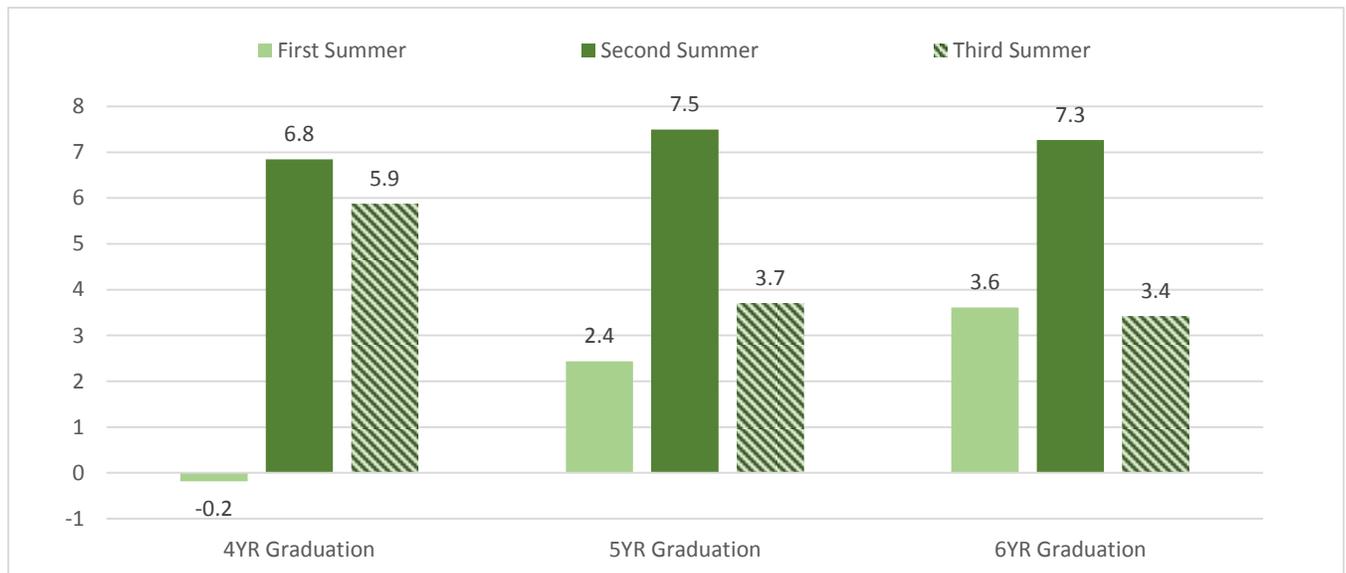




Figure A 2 PP Gap in Graduation Rates by Summer Enrollment Status for Students on Probation during their First Year

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	842	14.5%	36.9%	44.3%
	Did Not Enroll in First Summer	5,734	9.9%	27.1%	32.6%
	Difference (enrolled – not enrolled)		4.6%	9.8%	11.8%
Second Summer Enrollment	Enrolled Second Summer	939	26.2%	60.2%	70.8%
	Did Not Enroll in Second Summer	2,266	15.6%	44.3%	53.4%
	Difference (enrolled – not enrolled)		10.6%	15.8%	17.3%
Third Summer Enrollment	Enrolled Third Summer	969	32.5%	69.3%	79.3%
	Did Not Enroll in Third Summer	1,312	17.5%	57.3%	69.0%
	Difference (enrolled – not enrolled)		15.0%	12.1%	10.3%

Graduation Rate PP Gap

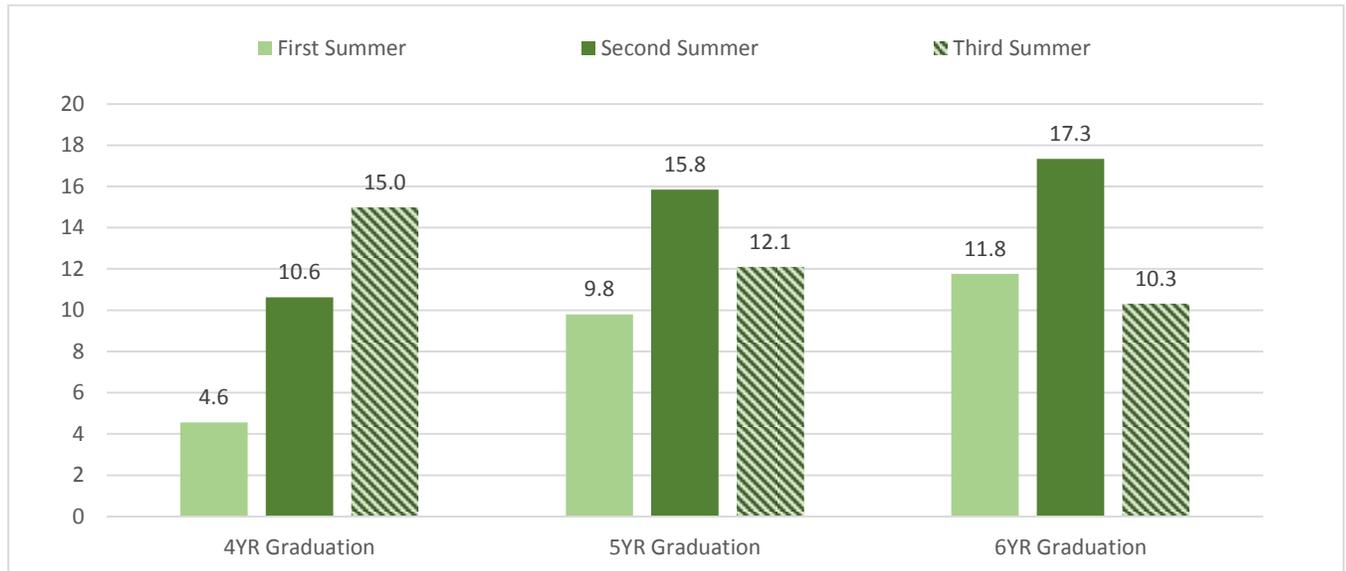




Figure A 3. Nonresident Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	1,491	47.1%	68.7%	72.9%
	Did Not Enroll in First Summer	9,512	45.3%	64.6%	67.3%
	Difference (enrolled – not enrolled)		1.8%	4.1%	5.6%
Second Summer Enrollment	Enrolled Second Summer	2,738	60.3%	84.4%	87.5%
	Did Not Enroll in Second Summer	5,043	52.6%	76.2%	80.2%
	Difference (enrolled – not enrolled)		7.7%	8.2%	7.3%
Third Summer Enrollment	Enrolled Third Summer	2,420	62.1%	87.3%	91.8%
	Did Not Enroll in Third Summer	3,598	59.8%	86.4%	90.1%
	Difference (enrolled – not enrolled)		2.3%	1.0%	1.6%

Graduation Rate PP Gap

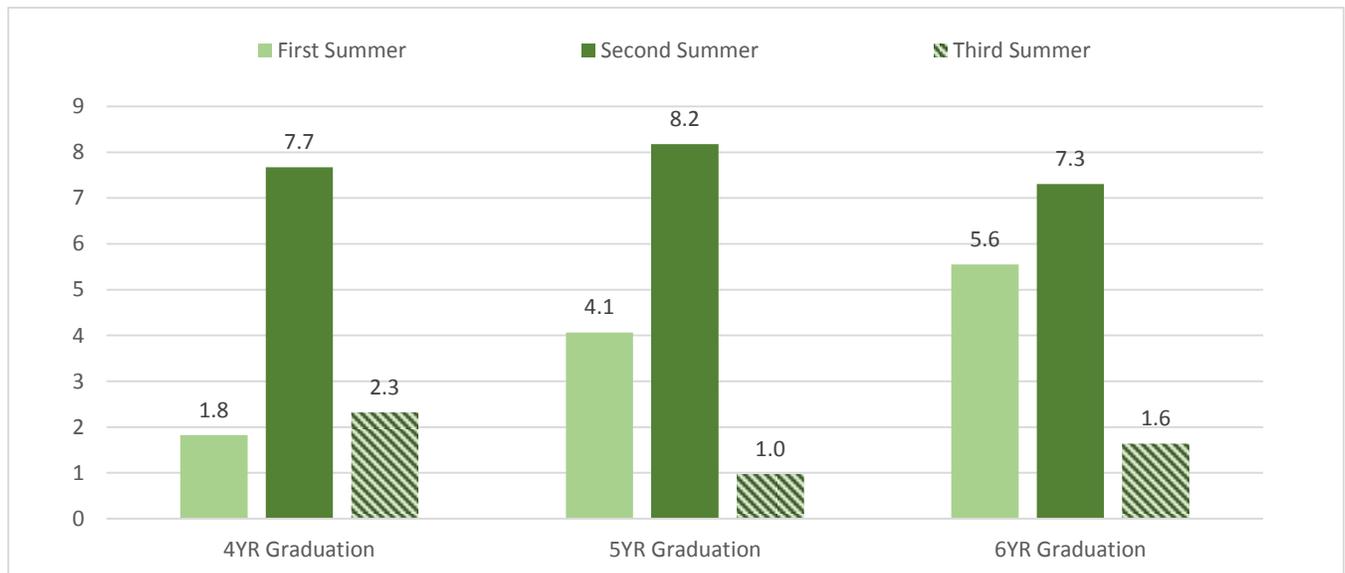




Figure A 4. Pell Recipient Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	831	36.8%	62.5%	67.9%
	Did Not Enroll in First Summer	7,810	38.4%	60.1%	64.4%
	Difference (enrolled – not enrolled)		-1.6%	2.4%	3.5%
Second Summer Enrollment	Enrolled Second Summer	1,505	51.9%	79.1%	84.5%
	Did Not Enroll in Second Summer	4,726	45.6%	72.0%	77.5%
	Difference (enrolled – not enrolled)		6.3%	7.1%	7.1%
Third Summer Enrollment	Enrolled Third Summer	1,577	55.5%	84.5%	89.9%
	Did Not Enroll in Third Summer	3,420	49.9%	79.7%	85.6%
	Difference (enrolled – not enrolled)		5.6%	4.8%	4.3%

Graduation Rate PP Gap

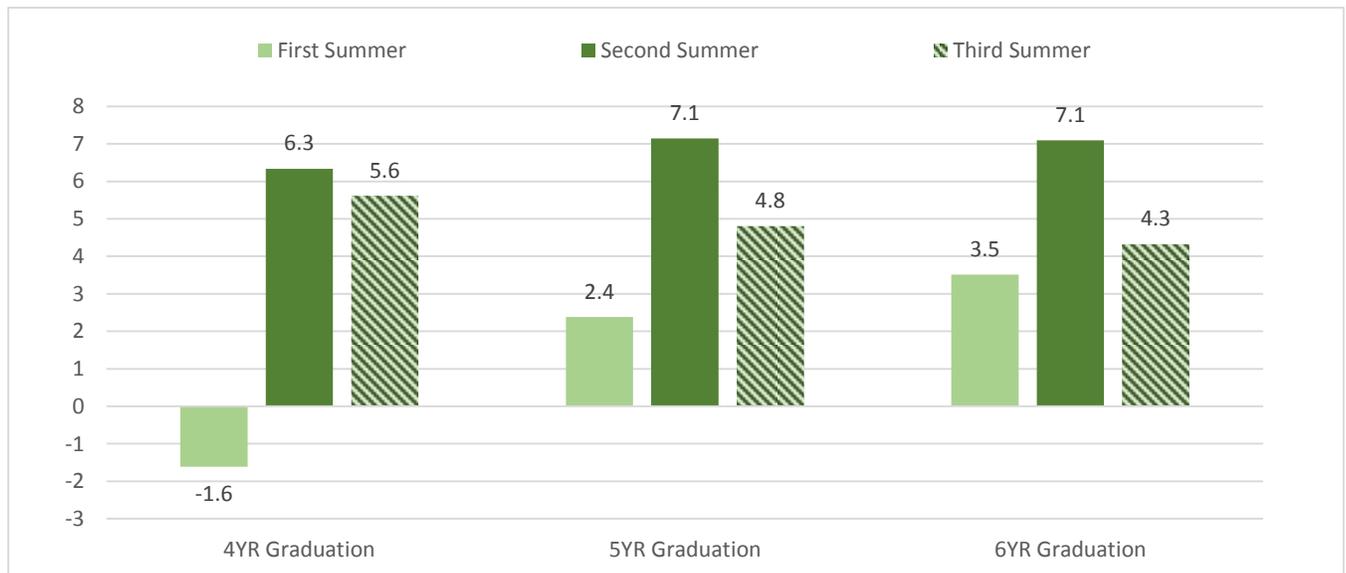




Figure A 5. First Generation Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment ¹	Enrolled First Summer	961	38.2%	63.2%	67.6%
	Did Not Enroll in First Summer	9,071	39.1%	59.3%	63.0%
	Difference (enrolled – not enrolled)		-0.8%	3.8%	4.6%
Second Summer Enrollment ²	Enrolled Second Summer	1,882	53.6%	78.7%	83.6%
	Did Not Enroll in Second Summer	5,360	47.0%	72.2%	76.8%
	Difference (enrolled – not enrolled)		6.6%	6.5%	6.8%
Third Summer Enrollment ³	Enrolled Third Summer	2,012	60.1%	86.4%	90.8%
	Did Not Enroll in Third Summer	3,853	50.3%	79.4%	84.8%
	Difference (enrolled – not enrolled)		9.7%	7.0%	5.9%

Graduation Rate PP Gap

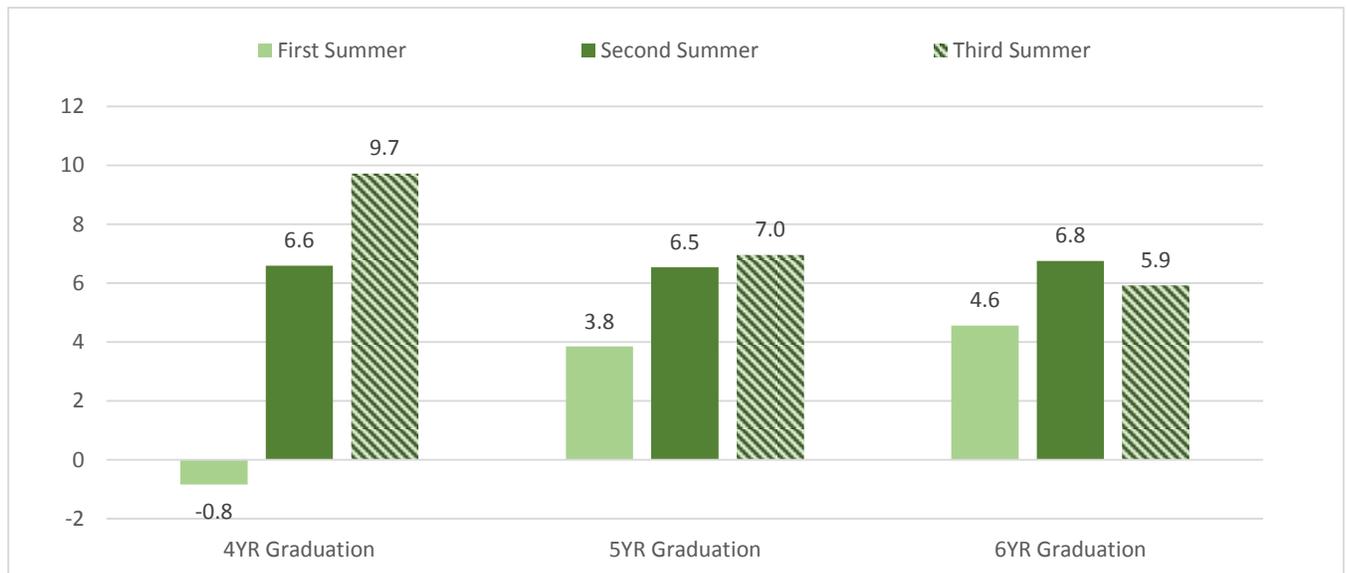




Figure A 6. Racially Minoritized Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	864	36.9%	60.4%	66.2%
	Did Not Enroll in First Summer	7,520	39.7%	60.1%	63.8%
	Difference (enrolled – not enrolled)		-2.8%	0.3%	2.4%
Second Summer Enrollment	Enrolled Second Summer	1,642	52.1%	79.2%	83.5%
	Did Not Enroll in Second Summer	4,243	46.2%	70.3%	75.2%
	Difference (enrolled – not enrolled)		5.9%	8.9%	8.3%
Third Summer Enrollment	Enrolled Third Summer	1,634	57.1%	83.7%	88.2%
	Did Not Enroll in Third Summer	2,904	50.2%	78.7%	84.6%
	Difference (enrolled – not enrolled)		7.0%	4.9%	3.6%

Graduation Rate PP Gap

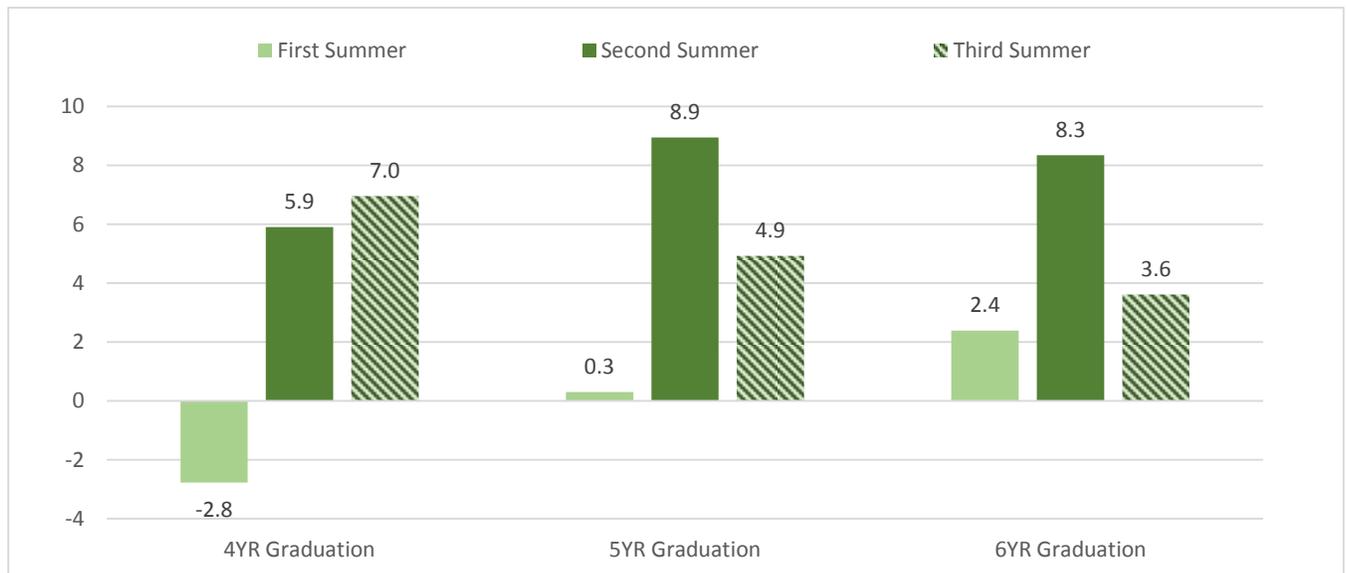




Figure A 7. Any Combination of First Generation, Pell, or Racially Minoritized Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	1,866	40.0%	64.1%	69.4%
	Did Not Enroll in First Summer	16,169	40.8%	61.5%	65.2%
	Difference (enrolled – not enrolled)		-0.7%	2.6%	4.2%
Second Summer Enrollment	Enrolled Second Summer	3,532	54.8%	80.6%	85.3%
	Did Not Enroll in Second Summer	9,540	47.9%	72.9%	77.7%
	Difference (enrolled – not enrolled)		6.9%	7.7%	7.5%
Third Summer Enrollment	Enrolled Third Summer	3,653	59.6%	85.5%	90.4%
	Did Not Enroll in Third Summer	6,818	51.8%	80.8%	86.0%
	Difference (enrolled – not enrolled)		7.8%	4.7%	4.4%

Graduation Rate PP Gap

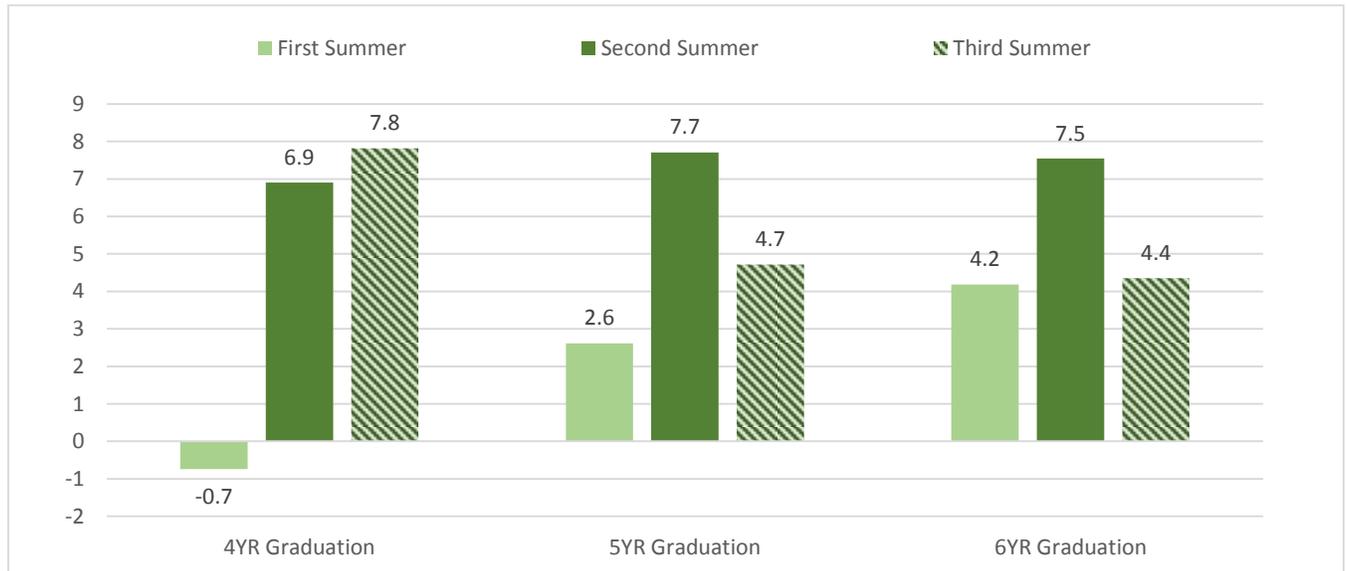




Figure A 8. Hispanic/Latinx Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	430	36.1%	61.7%	67.5%
	Did Not Enroll in First Summer	4,346	38.3%	59.4%	63.0%
	Difference (enrolled – not enrolled)		-2.2%	2.3%	4.6%
Second Summer Enrollment	Enrolled Second Summer	861	50.9%	79.8%	84.2%
	Did Not Enroll in Second Summer	2,407	45.2%	70.1%	74.9%
	Difference (enrolled – not enrolled)		5.8%	9.7%	9.3%
Third Summer Enrollment	Enrolled Third Summer	902	57.0%	83.6%	87.1%
	Did Not Enroll in Third Summer	1,592	48.1%	78.3%	84.4%
	Difference (enrolled – not enrolled)		8.9%	5.4%	2.7%

Graduation Rate PP Gap

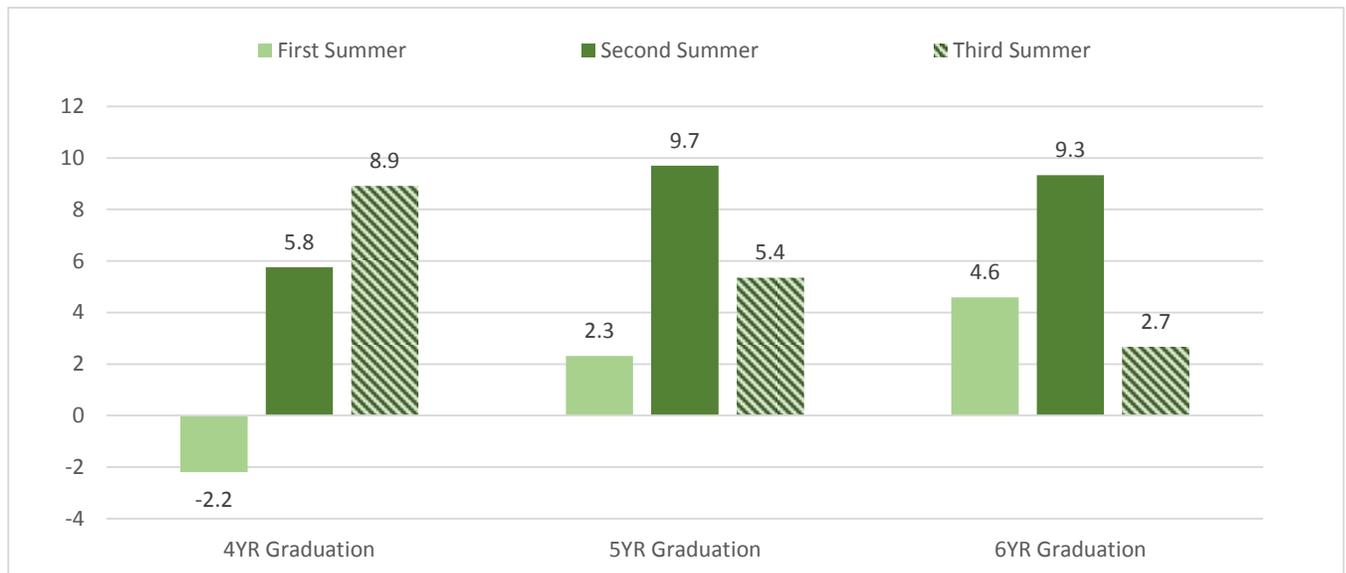




Figure A 9. American Indian/Native American Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	95	28.3%	58.2%	66.0%
	Did Not Enroll in First Summer	802	34.5%	55.7%	59.4%
	Difference (enrolled – not enrolled)		-6.1%	2.4%	6.6%
Second Summer Enrollment	Enrolled Second Summer	177	50.7%	82.0%	86.7%
	Did Not Enroll in Second Summer	411	40.3%	66.3%	72.9%
	Difference (enrolled – not enrolled)		10.4%	15.7%	13.8%
Third Summer Enrollment	Enrolled Third Summer	172	58.2%	86.9%	89.9%
	Did Not Enroll in Third Summer	302	42.1%	74.7%	83.2%
	Difference (enrolled – not enrolled)		16.2%	12.2%	6.7%

Graduation Rate PP Gap

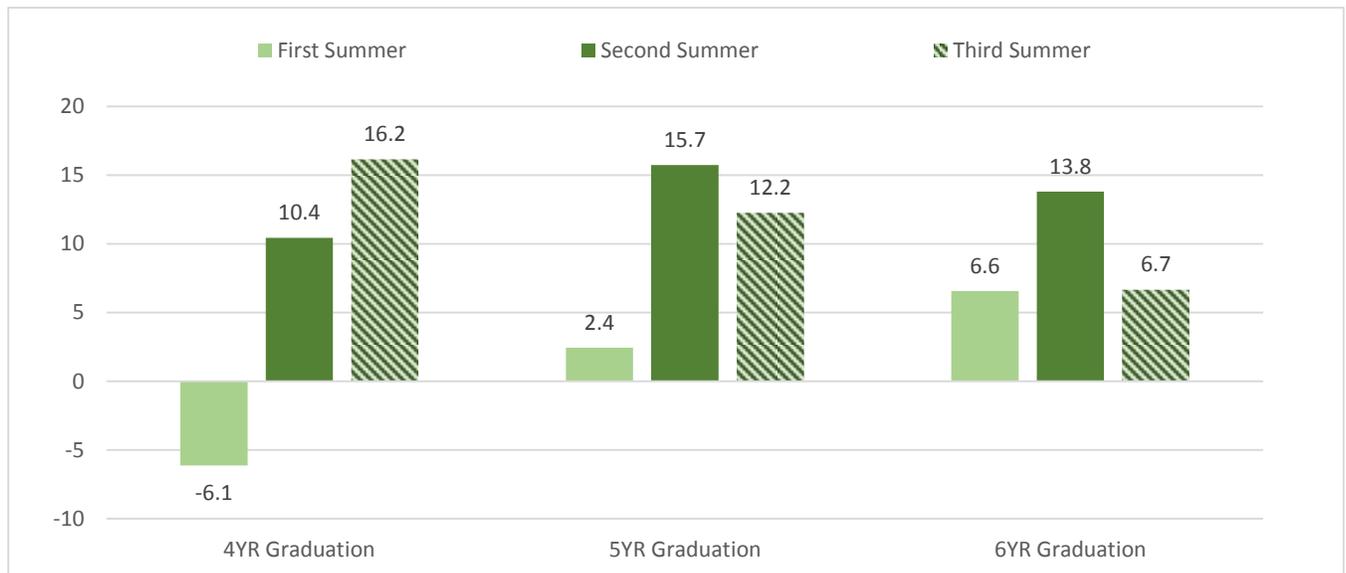




Figure A 10. Asian and Hawaiian/Pacific Islander Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	277	45.2%	62.4%	69.6%
	Did Not Enroll in First Summer	1,807	45.1%	63.8%	67.0%
	Difference (enrolled – not enrolled)		0.1%	-1.4%	2.6%
Second Summer Enrollment	Enrolled Second Summer	489	57.1%	80.4%	84.0%
	Did Not Enroll in Second Summer	1,013	51.7%	73.7%	77.9%
	Difference (enrolled – not enrolled)		5.5%	6.7%	6.1%
Third Summer Enrollment	Enrolled Third Summer	390	60.3%	83.3%	87.7%
	Did Not Enroll in Third Summer	744	58.0%	83.6%	88.6%
	Difference (enrolled – not enrolled)		2.3%	-0.3%	-0.8%

Graduation Rate PP Gap

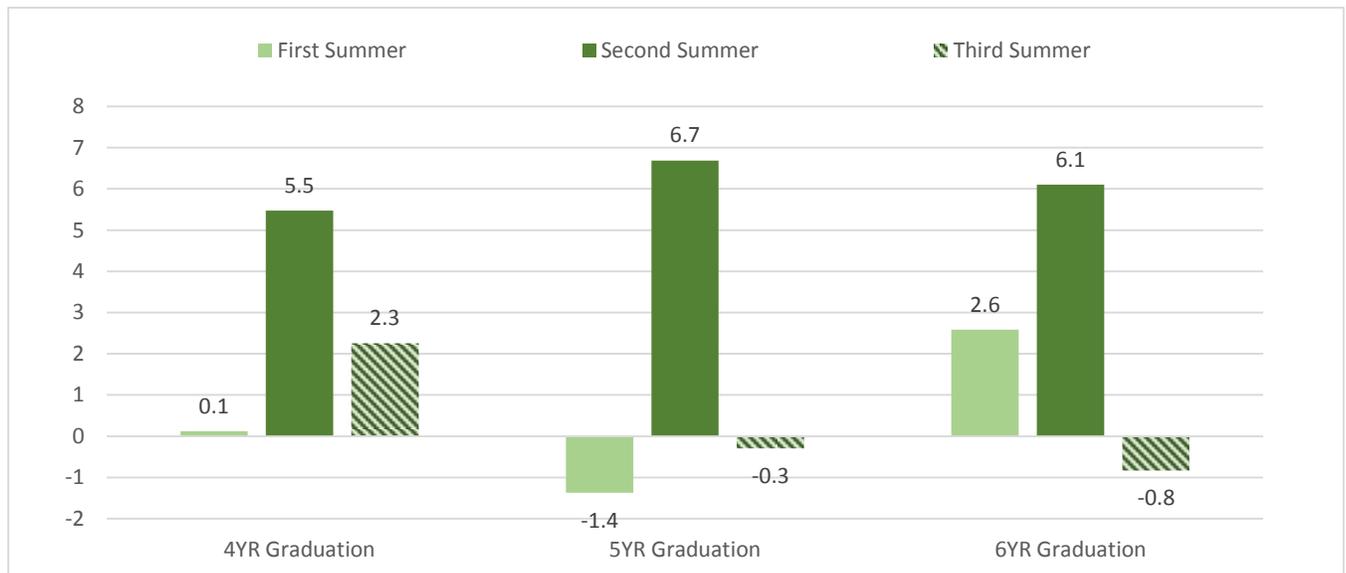




Figure A 11. Black Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	159	30.4%	57.0%	56.7%
	Did Not Enroll in First Summer	1,344	36.8%	57.2%	62.0%
	Difference (enrolled – not enrolled)		-6.4%	-0.2%	-5.3%
Second Summer Enrollment	Enrolled Second Summer	271	44.8%	74.9%	78.1%
	Did Not Enroll in Second Summer	815	42.9%	66.6%	73.7%
	Difference (enrolled – not enrolled)		1.9%	8.3%	4.4%
Third Summer Enrollment	Enrolled Third Summer	318	53.4%	81.9%	88.3%
	Did Not Enroll in Third Summer	514	45.6%	74.2%	81.0%
	Difference (enrolled – not enrolled)		7.7%	7.7%	7.3%

Graduation Rate PP Gap

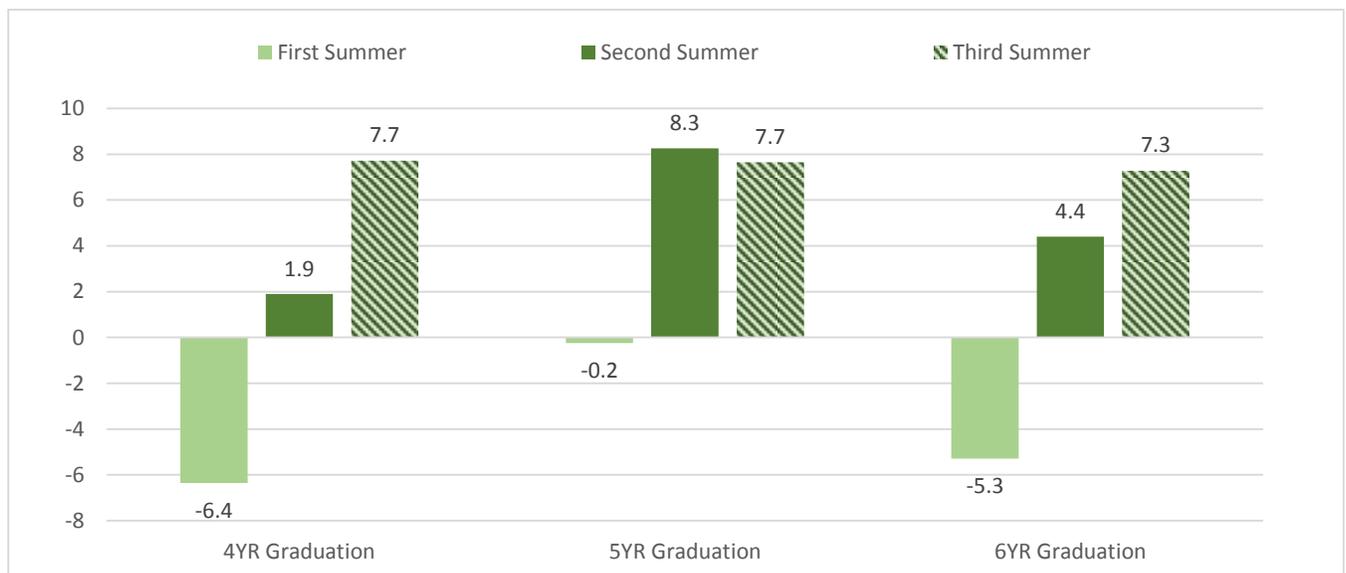




Figure A 12. Multiracial Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	155	35.6%	63.9%	72.6%
	Did Not Enroll in First Summer	1,206	42.8%	60.6%	65.8%
	Difference (enrolled – not enrolled)		-7.2%	3.2%	6.8%
Second Summer Enrollment	Enrolled Second Summer	287	57.8%	80.6%	85.5%
	Did Not Enroll in Second Summer	651	48.6%	70.5%	77.4%
	Difference (enrolled – not enrolled)		9.2%	10.1%	8.2%
Third Summer Enrollment	Enrolled Third Summer	251	60.4%	85.6%	91.3%
	Did Not Enroll in Third Summer	476	54.2%	80.3%	87.1%
	Difference (enrolled – not enrolled)		6.1%	5.3%	4.2%

Graduation Rate PP Gap

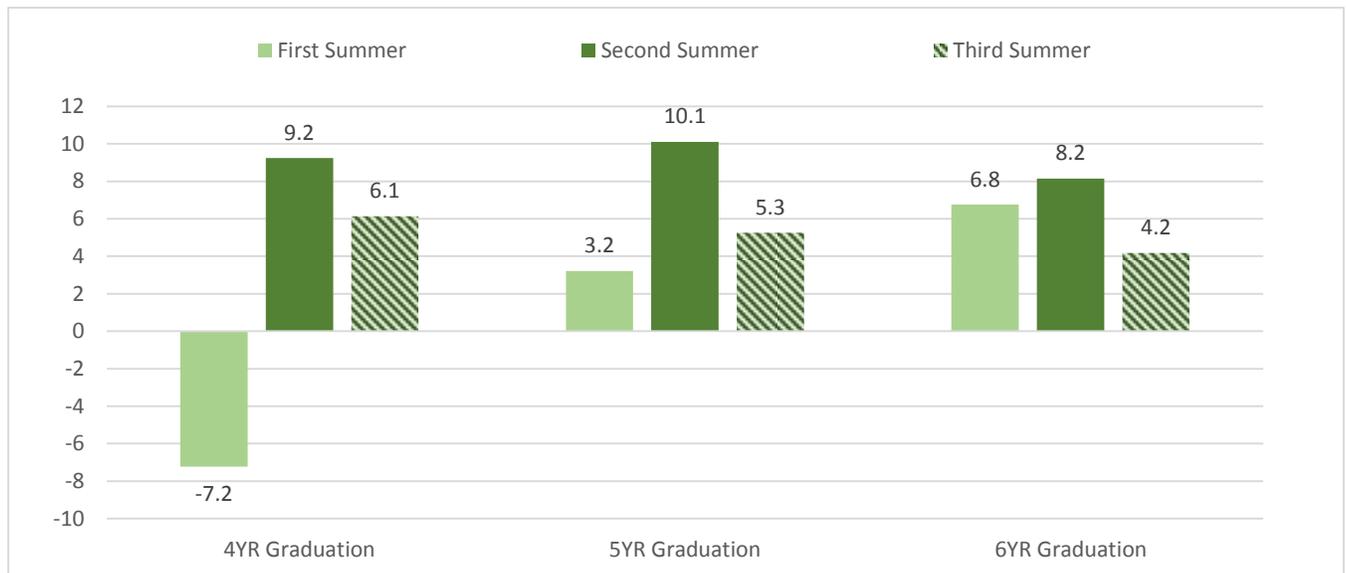




Figure A 13. International Student Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	227	44.7%	72.0%	78.7%
	Did Not Enroll in First Summer	335	31.7%	54.1%	57.6%
	Difference (enrolled – not enrolled)		13.0%	17.9%	21.1%
Second Summer Enrollment	Enrolled Second Summer	233	46.6%	78.8%	82.0%
	Did Not Enroll in Second Summer	189	35.7%	58.6%	65.2%
	Difference (enrolled – not enrolled)		10.9%	20.2%	16.9%
Third Summer Enrollment	Enrolled Third Summer	173	53.7%	85.0%	93.6%
	Did Not Enroll in Third Summer	136	41.7%	78.3%	84.3%
	Difference (enrolled – not enrolled)		12.0%	6.8%	9.3%

Graduation Rate PP Gap

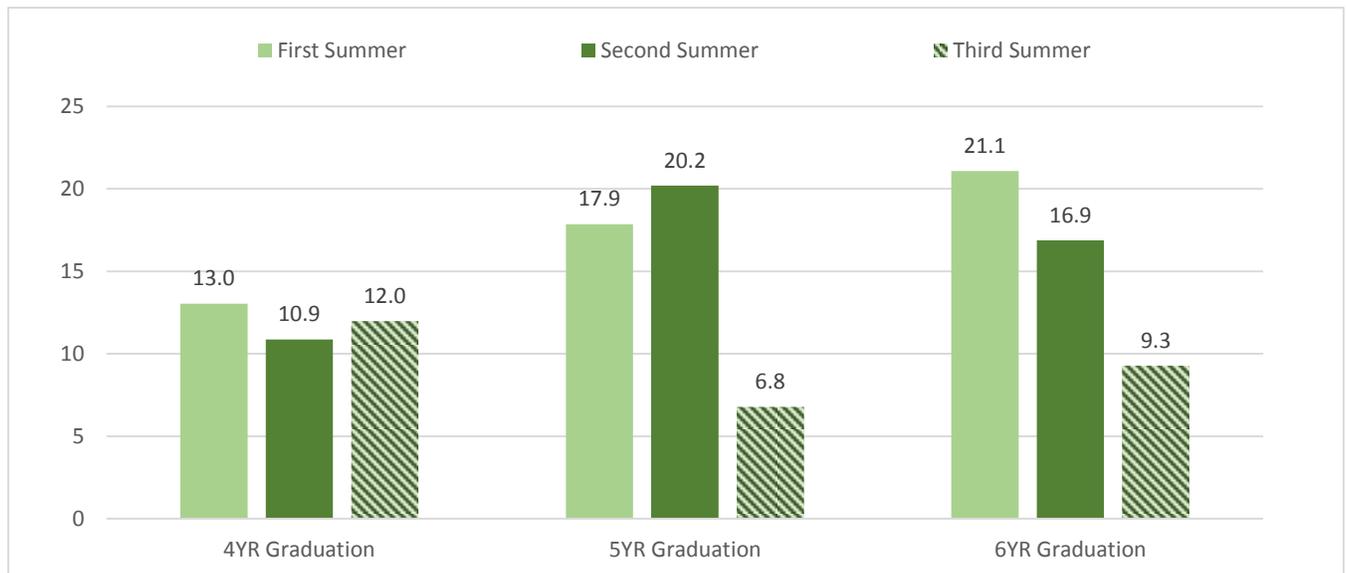




Figure A 14. Agricultural Sciences Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	357	52.4%	79.5%	86.5%
	Did Not Enroll in First Summer	1,909	42.4%	64.3%	66.9%
	Difference (enrolled – not enrolled)		10.0%	15.1%	19.5%
Second Summer Enrollment	Enrolled Second Summer	588	60.6%	87.5%	89.3%
	Did Not Enroll in Second Summer	1,099	46.4%	72.0%	76.7%
	Difference (enrolled – not enrolled)		14.2%	15.4%	12.6%
Third Summer Enrollment	Enrolled Third Summer	551	62.7%	91.1%	94.0%
	Did Not Enroll in Third Summer	791	52.5%	80.5%	85.7%
	Difference (enrolled – not enrolled)		10.2%	10.6%	8.3%

Graduation Rate PP Gap

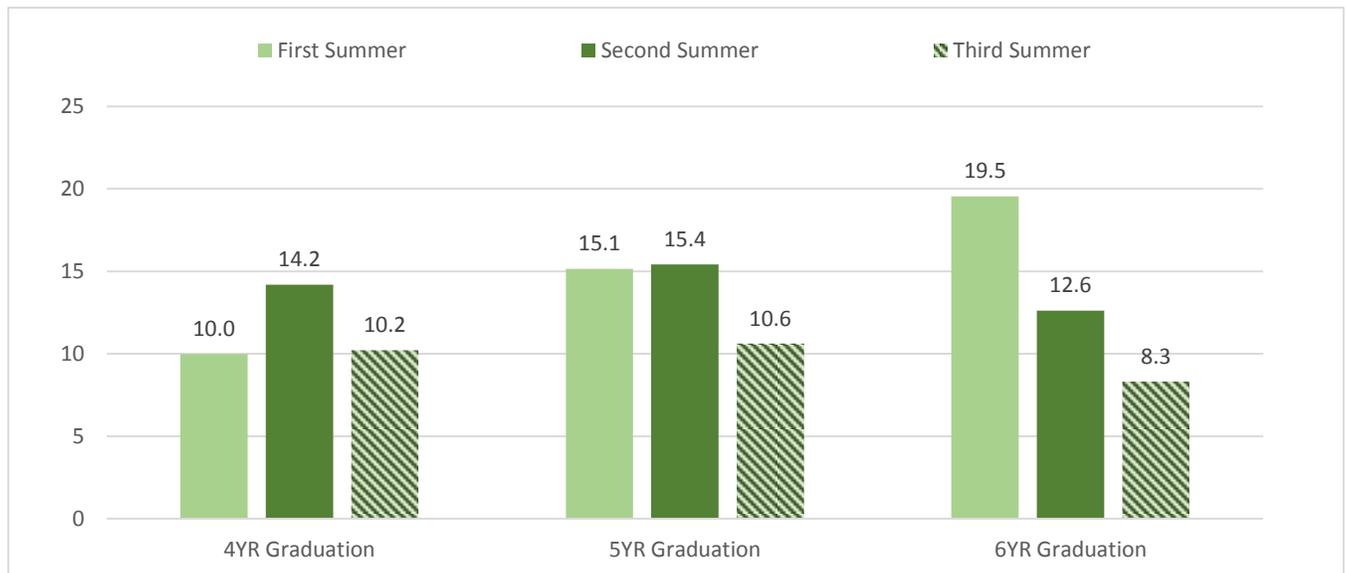




Figure A 15. Business Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	264	63.3%	77.0%	84.8%
	Did Not Enroll in First Summer	3,147	65.4%	80.1%	81.5%
	Difference (enrolled – not enrolled)		-2.2%	-3.1%	3.3%
Second Summer Enrollment	Enrolled Second Summer	629	73.9%	92.6%	94.3%
	Did Not Enroll in Second Summer	2,045	72.0%	87.7%	89.9%
	Difference (enrolled – not enrolled)		1.9%	4.8%	4.5%
Third Summer Enrollment	Enrolled Third Summer	629	76.3%	92.9%	95.5%
	Did Not Enroll in Third Summer	1,599	75.3%	92.7%	93.9%
	Difference (enrolled – not enrolled)		0.9%	0.2%	1.7%

Graduation Rate PP Gap

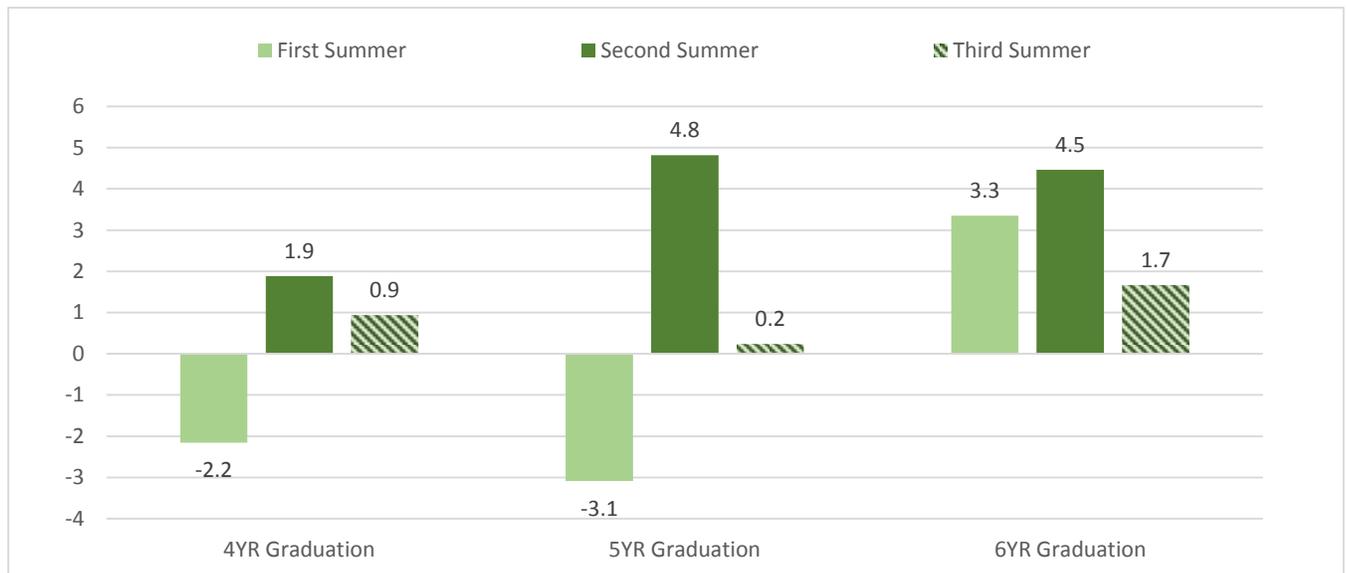




Figure A 16. Health and Human Sciences Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	580	56.7%	77.5%	78.2%
	Did Not Enroll in First Summer	4,636	48.6%	70.6%	73.9%
	Difference (enrolled – not enrolled)		8.1%	6.9%	4.3%
Second Summer Enrollment	Enrolled Second Summer	1,218	65.4%	88.1%	91.7%
	Did Not Enroll in Second Summer	2,810	54.1%	80.2%	83.8%
	Difference (enrolled – not enrolled)		11.3%	7.9%	7.9%
Third Summer Enrollment	Enrolled Third Summer	1,446	68.6%	91.5%	94.8%
	Did Not Enroll in Third Summer	1,842	56.3%	86.9%	91.8%
	Difference (enrolled – not enrolled)		12.3%	4.5%	3.0%

Graduation Rate PP Gap

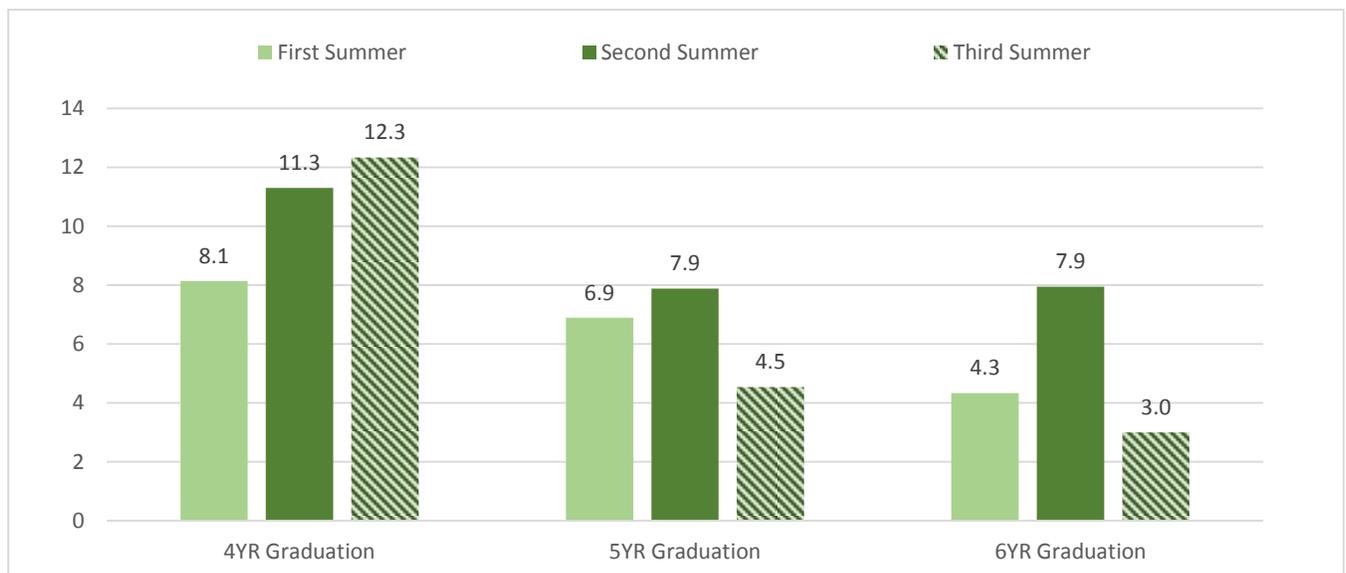




Figure A 17. Intra-University Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	1,152	36.2%	62.8%	67.9%
	Did Not Enroll in First Summer	9,945	39.5%	62.8%	67.7%
	Difference (enrolled – not enrolled)		-3.3%	0.0%	0.3%
Second Summer Enrollment	Enrolled Second Summer	2,289	50.2%	81.0%	86.2%
	Did Not Enroll in Second Summer	6,024	45.7%	72.8%	78.3%
	Difference (enrolled – not enrolled)		4.5%	8.2%	7.9%
Third Summer Enrollment	Enrolled Third Summer	2,796	57.0%	85.7%	90.9%
	Did Not Enroll in Third Summer	4,099	47.1%	79.8%	86.0%
	Difference (enrolled – not enrolled)		9.9%	5.9%	4.8%

Graduation Rate PP Gap

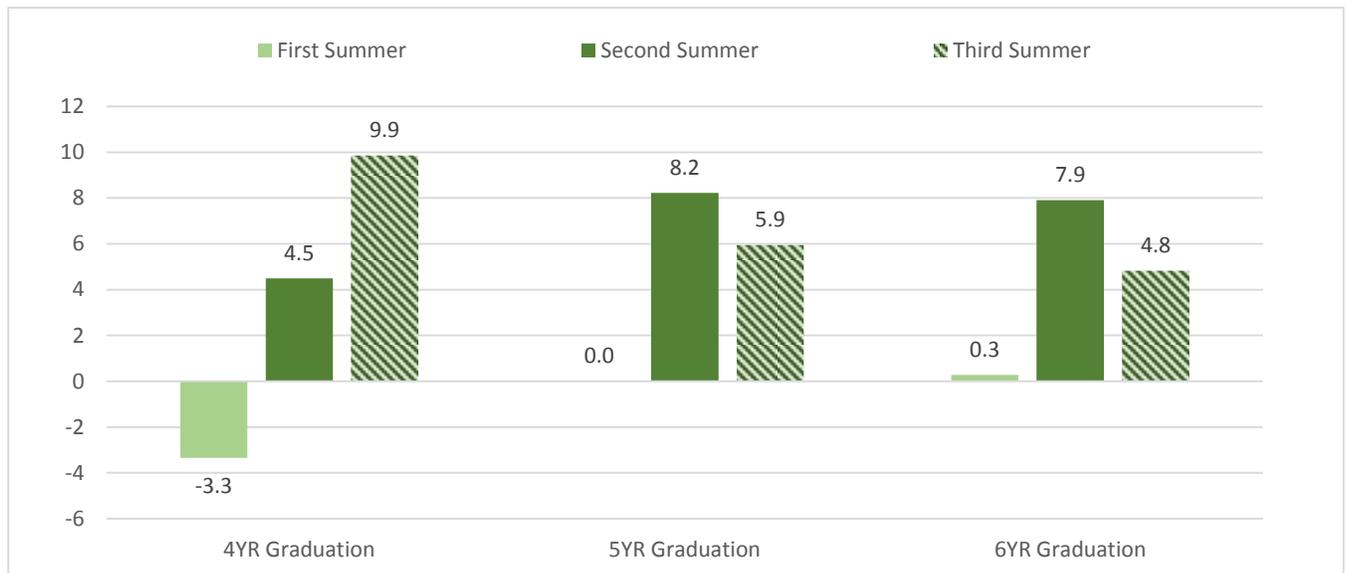




Figure A 18. Liberal Arts Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	536	51.7%	69.4%	72.6%
	Did Not Enroll in First Summer	4,708	50.9%	68.0%	70.0%
	Difference (enrolled – not enrolled)		0.8%	1.4%	2.6%
Second Summer Enrollment	Enrolled Second Summer	1,036	65.5%	86.1%	89.4%
	Did Not Enroll in Second Summer	2,967	58.9%	78.9%	81.5%
	Difference (enrolled – not enrolled)		6.5%	7.1%	7.9%
Third Summer Enrollment	Enrolled Third Summer	1,092	67.3%	89.4%	92.5%
	Did Not Enroll in Third Summer	2,179	64.7%	86.5%	89.2%
	Difference (enrolled – not enrolled)		2.6%	2.9%	3.4%

Graduation Rate PP Gap

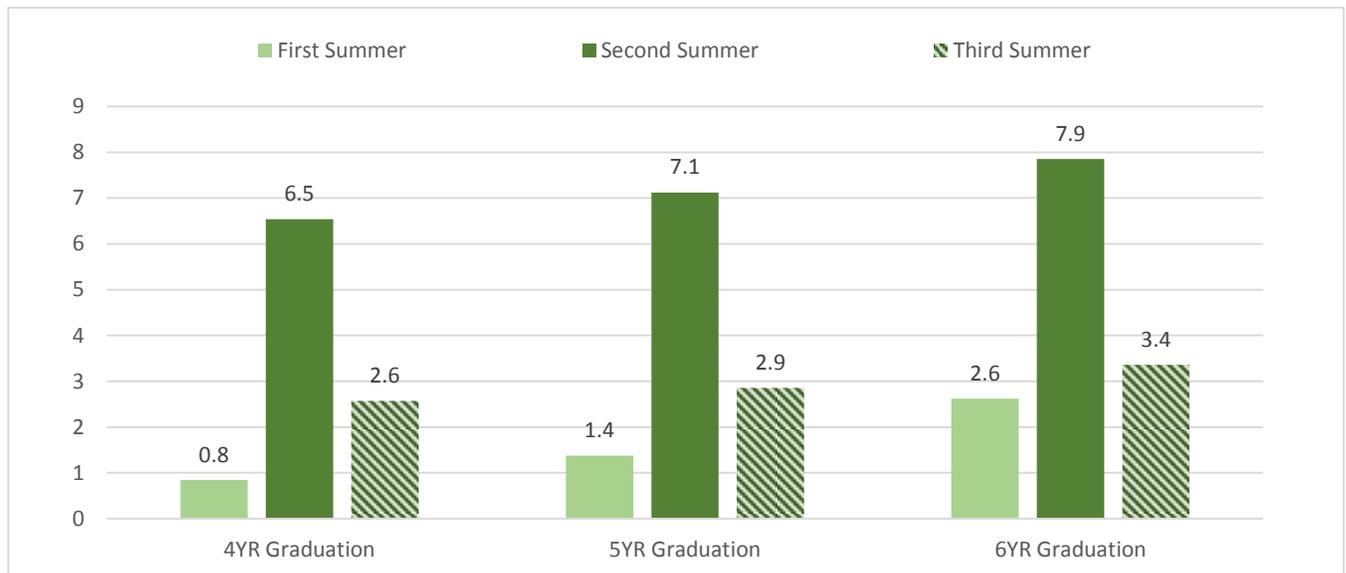




Figure A 19. Natural Sciences Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	944	47.4%	68.6%	72.8%
	Did Not Enroll in First Summer	6,446	46.3%	64.3%	67.1%
	Difference (enrolled – not enrolled)		1.2%	4.3%	5.7%
Second Summer Enrollment	Enrolled Second Summer	1,706	59.1%	81.4%	86.0%
	Did Not Enroll in Second Summer	3,690	54.0%	75.1%	78.4%
	Difference (enrolled – not enrolled)		5.1%	6.3%	7.6%
Third Summer Enrollment	Enrolled Third Summer	1,633	61.9%	86.2%	90.4%
	Did Not Enroll in Third Summer	2,632	60.3%	83.4%	87.2%
	Difference (enrolled – not enrolled)		1.6%	2.8%	3.2%

Graduation Rate PP Gap

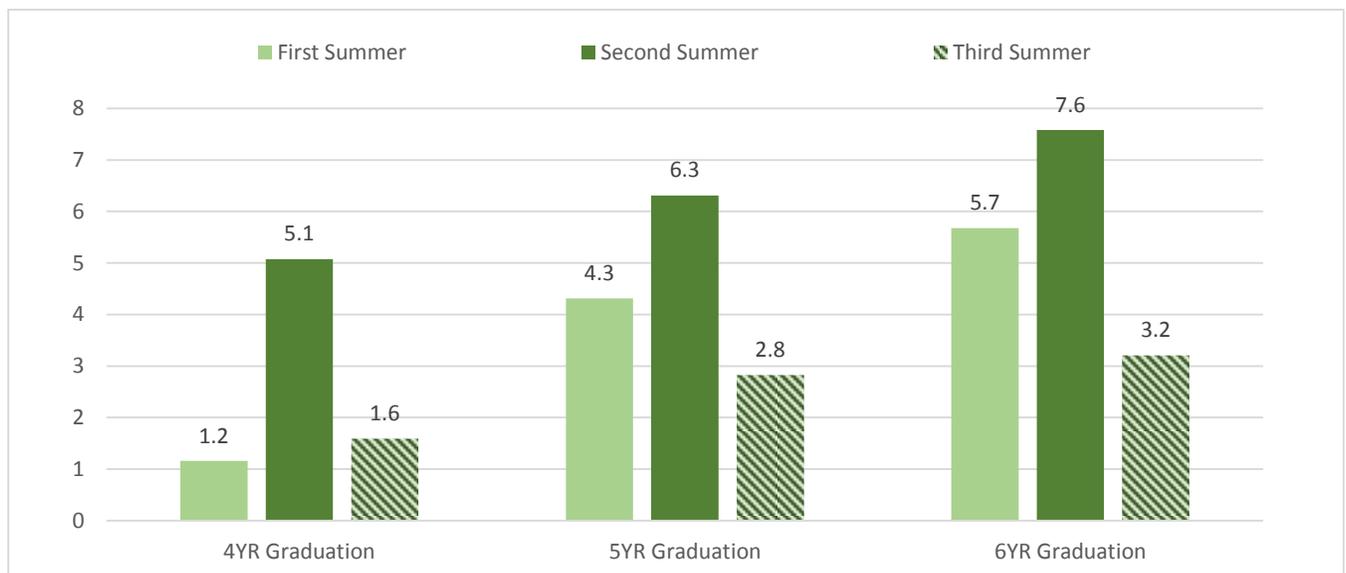




Figure A 20. Veterinary Medicine and Biomedical Sciences Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	200	62.7%	82.9%	88.0%
	Did Not Enroll in First Summer	1,186	65.6%	79.8%	81.5%
	Difference (enrolled – not enrolled)		-2.9%	3.0%	6.5%
Second Summer Enrollment	Enrolled Second Summer	397	75.8%	93.1%	92.6%
	Did Not Enroll in Second Summer	680	70.0%	86.5%	90.3%
	Difference (enrolled – not enrolled)		5.8%	6.7%	2.4%
Third Summer Enrollment	Enrolled Third Summer	291	73.0%	94.5%	97.7%
	Did Not Enroll in Third Summer	604	76.3%	91.7%	94.0%
	Difference (enrolled – not enrolled)		-3.3%	2.9%	3.8%

Graduation Rate PP Gap

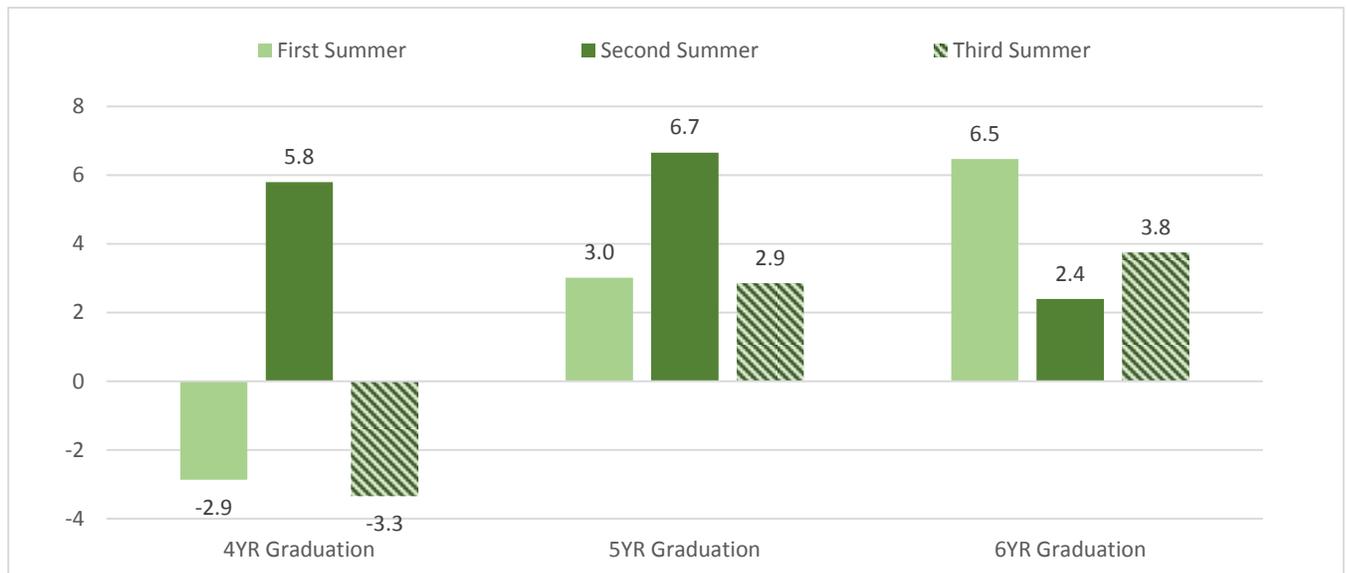




Figure A 21. Walter Scott, Jr. College of Engineering Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	701	30.1%	67.0%	75.0%
	Did Not Enroll in First Summer	4,282	29.3%	67.4%	73.7%
	Difference (enrolled – not enrolled)		0.8%	-0.4%	1.3%
Second Summer Enrollment	Enrolled Second Summer	1,278	37.6%	78.9%	86.3%
	Did Not Enroll in Second Summer	2,639	31.6%	75.3%	83.0%
	Difference (enrolled – not enrolled)		6.0%	3.6%	3.2%
Third Summer Enrollment	Enrolled Third Summer	988	39.8%	82.5%	91.1%
	Did Not Enroll in Third Summer	2,220	34.4%	82.1%	89.6%
	Difference (enrolled – not enrolled)		5.5%	0.4%	1.4%

Graduation Rate PP Gap

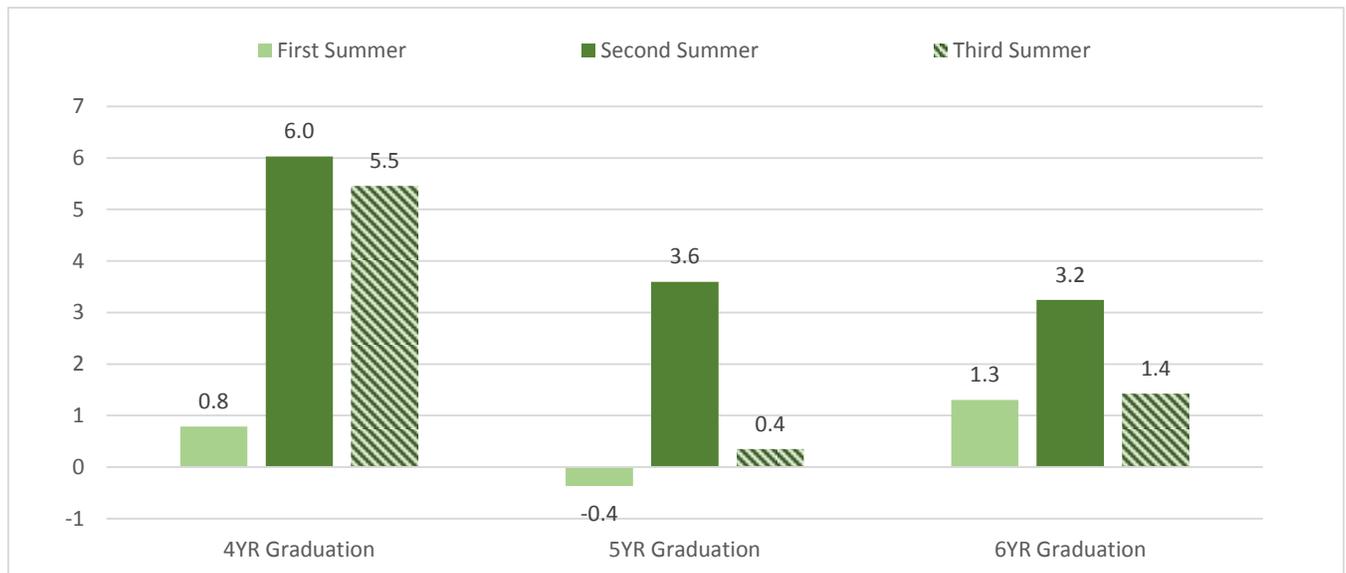




Figure A 22. Warner College of Natural Resources Graduation Rates by Summer Enrollment Status

		Headcount	4YR Graduation Rate	5YR Graduation Rate	6YR Graduation Rate
First Summer Enrollment	Enrolled First Summer	162	37.0%	62.1%	65.4%
	Did Not Enroll in First Summer	1,283	47.9%	69.7%	73.7%
	Difference (enrolled – not enrolled)		-10.9%	-7.6%	-8.3%
Second Summer Enrollment	Enrolled Second Summer	546	69.8%	88.6%	91.1%
	Did Not Enroll in Second Summer	511	41.2%	73.2%	77.9%
	Difference (enrolled – not enrolled)		28.5%	15.4%	13.2%
Third Summer Enrollment	Enrolled Third Summer	355	59.7%	89.4%	92.2%
	Did Not Enroll in Third Summer	497	61.3%	84.8%	90.3%
	Difference (enrolled – not enrolled)		-1.7%	4.6%	1.9%

Graduation Rate PP Gap

