

Student Success and Graduation Initiative
San Francisco State University
Bi-Monthly Report

September/October 2013

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What did your team complete this month and how will it help?

1. AVP Linda Buckley met with the Associate Deans to review summary data on factors related to attrition. College level data on graduation rates disaggregated by ethnicity was requested by the Associate Deans and is being provided. They felt that the disaggregated would be more actionable.
2. A longitudinal study on critical thinking using the CLA was begun. This study began with testing 200 freshmen. The same students will be invited back to retest every year for 4 years. The incentive to return will be early priority registration. The results should give us valuable information on the acquisition of CT skills over the period of the degree, which can be disaggregate by discipline, gender, ethnicity and socio-economic background. Critical thinking is one of the skill areas that the university considers to be crucial to student success.
3. Several of the SSGI task force initiated a persistence study. SF State is piloting the study in collaboration with Todd Rogers from the Harvard Kennedy School and Ideas 42, a non-profit funding group. The study will explore the relationships between parents and their SF State students, intending to tape into parental involvement as a way of increasing student persistence and graduation rates. The group is in the process of writing the IRB for the study and developing interview protocols and survey questions.
4. Analysts in the Office of Academic Institutional Research completed their recent study on "leavers." The following are some of their most interesting findings (see attachment).
 - a. Students more likely than others to graduate (vs. leave) within six years included those who were male, Asian, first generation, Pell-eligible, or local, and were more likely to have lived on campus in their first year.

- b. With every 1-point increase in high school GPA, the likelihood of graduating tripled.
 - c. With every 1-point increase in GPA from high school to Term 1, the likelihood of graduating doubled.
 - d. Groups of 6-year leavers who experienced significantly greater mean decreases in GPA from high school to Term 1 were male, non-White, first generation, unremediated, or “A high school students.
 - e. Analysis of National Student Clearinghouse data revealed that 71% of leavers continued their higher education elsewhere within six years of their SF State matriculation. Of the leavers who subsequently enrolled elsewhere, 26% earned a bachelor’s degree within six years. More than half of the bachelor’s degrees (53%) were earned at other CSU campuses, and 21% were earned at UC campuses.
5. The institution has begun a new strategic planning process and student success is one of the themes of the new strategic plan. The subcommittee for this theme has initiated conversations with a wide range of constituency groups across the university. The notes from these meetings have been posted on the strategic planning website along with a long list of resources and data that have already been collected as a part of the SSGI project. This development is a significant accomplishment for SSGI. The conversations across campus will heighten campus awareness of the initiative and will increase the involvement of the entire campus community. More importantly, the presence of Student Success as a strategic priority institutionalizes the initiative, ensuring that it will live on after the 2015 ending date of the project.
6. We were pleased and honored to have Jeff Gold visit with us at our last SSGI meeting to introduce the Chancellor’s Office data dashboard. We are excited about this new tool and believe it will be useful in our analytic work.

What we hope to accomplish in the next two months.

1. Continue the work on the Persistence Study.
2. Complete the revision to the Milestone Study and calculation of the graduation and continuance rates.
3. Continue the strategic planning work on the Student Success Theme and begin writing the draft report.



SF State Identifying Potential Leavers

Fall 2005 and 2006
Full-Time First-Time Freshmen

October
2013

Table of Contents

Executive Summary.....	3
Introduction.....	4
Student Outcomes.....	4
Academic Progress.....	5
Academic Challenge.....	13
Identifying Potential Leavers.....	21
Where Leavers Went.....	22
Summary	24
References.....	25
Appendix A – Demographic and Academic Characteristics by 6-Year Status	
Appendix B – Multinomial Logistic Regression	

Executive Summary

Two recent SF State studies of attrition characterized the full-time first-time freshmen (FTFTF) who leave without graduating and when they leave. This study identifies further factors associated with attrition and, in order to facilitate timely intervention, combines them with those previously studied to create a better model for identifying students who appear to be at increased risk of leaving SF State without graduating. These factors were considered in terms of the 6-year enrollment status of the 6,116 FTFTF of the Fall 2005 and 2006 cohorts. The three enrollment status groups included students who graduated within six years, students who did not graduate within six years and were still enrolled the following Fall, and “leavers” who did not graduate within six years and were not enrolled the following Fall.

Academic progress, measured by course completion, was examined by 6-year status. Course completion rates were lowest among leavers and were significantly more likely to be lower among leavers who were male, African American, first generation, in need of English-only remediation or no remediation at all, unremediated, or “C” students in high school.

Academic challenge was measured by the change in GPA between high school and SF State. Students whose GPA decreased were significantly more likely to leave and less likely to graduate within six years than were those with stable or improved GPAs. A decrease in students’ GPA between high school and college, rather than simply the level to which their GPA falls, may provide to students a clear indication that their academic efforts are inadequate. Groups of 6-year leavers who experienced significantly greater mean decreases in GPA from high school to Term 1 were male, non-White, first generation, unremediated, or “A” high school students.

In order to compare the relative contributions of all of the demographic or academic categories included in this study to 6-year status, multinomial logistic regression was used. Students more likely than others to graduate (vs. leave) within six years included those who were male, Asian, first generation, Pell-eligible, or local, and were more likely to have lived on campus in their first year. With every 1-point increase in high school GPA, the likelihood of graduating tripled. With every 1-point increase in GPA from high school to Term 1, the likelihood of graduating doubled.

Analysis of National Student Clearinghouse data revealed that 71% of leavers continued their higher education elsewhere within six years of their SF State matriculation. Of the leavers who subsequently enrolled elsewhere, 26% earned a bachelor’s degree within six years. More than half of the bachelor’s degrees (53%) were earned at other CSU campuses, and 21% were earned at UC campuses.

Introduction

The purpose of two recent SF State studies of attrition was to characterize the full-time first-time freshmen (FTFTF) who left without graduating and when they left. Demographic and academic characteristics associated with a greater likelihood of attrition were identified. The goal of the present study of attrition is to identify further factors associated with attrition and combine them with previously studied factors to create a better model for identifying students who are at risk of leaving SF State without graduating. The focus is on students who left SF State without a degree within six years of matriculation (150% of the “normal” 4-year time to degree). The identification of attrition risk factors may facilitate the early identification of students who might benefit from timely intervention. Academic progress will be measured by units earned as a percentage of units attempted, and academic challenge will be measured by change in GPA from high school to Term 1 at SF State. The study will conclude by describing the students who did and did not continue their higher education elsewhere after leaving SF State without graduating.

Student Outcomes

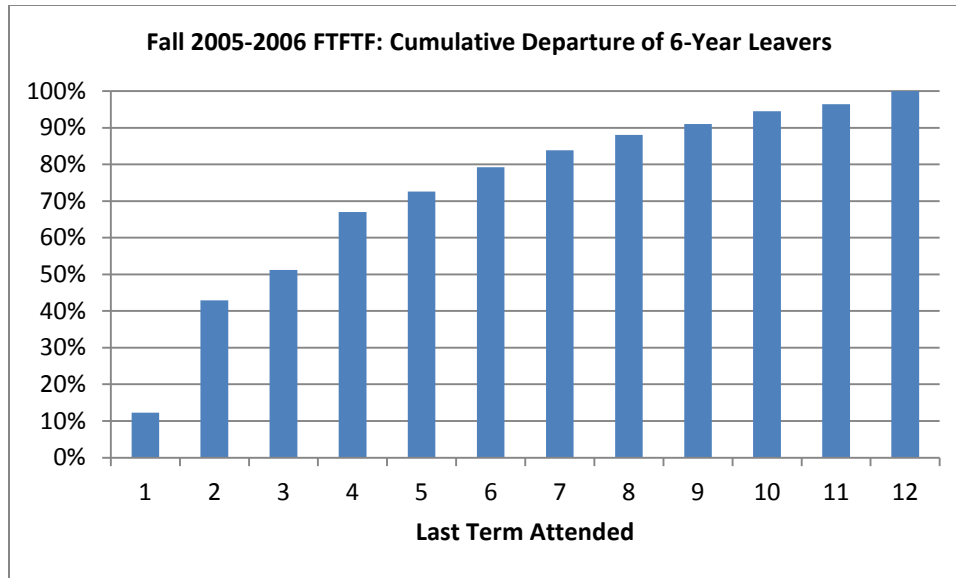
Outcomes for the 6,116 full-time first-time freshmen (FTFTF) of the Fall 2005 and 2006 cohorts were grouped by enrollment status:

- students who graduated within four or six years
- students who did not graduate within four or six years but were still enrolled in the Fall semester following the 4- or 6-year point
- students who did not graduate within four or six years and were not enrolled in the Fall semester following the 4- or 6-year point, a.k.a. “leavers”

The percentages of students in the study cohorts are shown in the table below by 4-year and 6-year enrollment status. Because the 4-year and 6-year graduation rates differ sharply, the present study focuses on 6-year outcomes.

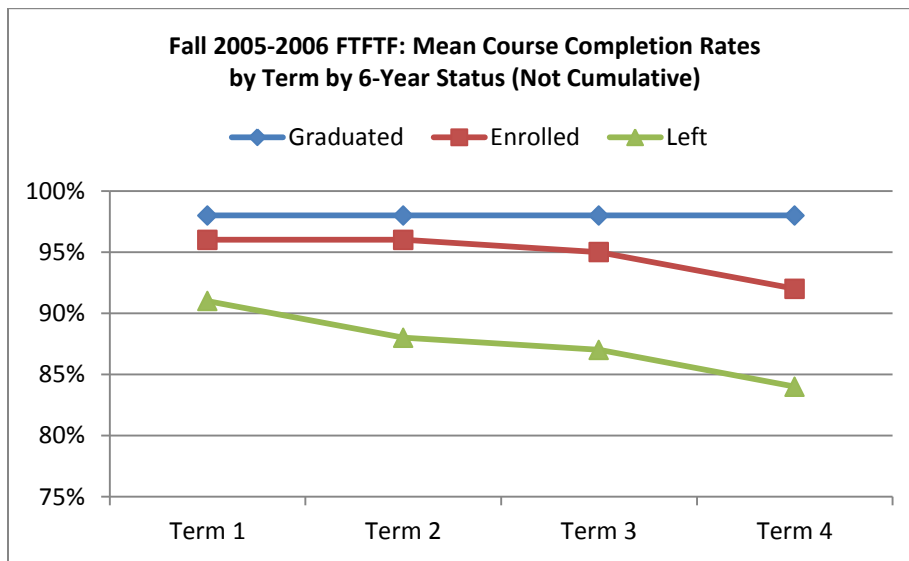
	4 Years	6 Years
Graduated	12.7%	46.9%
Still Enrolled	43.2%	7.0%
Left	44.1%	46.1%

Recent SF State studies have shown that first-time freshmen are more likely to leave in earlier than in later terms. As shown in the chart below, nearly half (43%) of the 6-year leavers in the study cohorts of this study last attended in Term 1 or 2. By the end of the second year (Term 4), 67% of eventual 6-year leavers had enrolled for the last time in the 6-year period studied. Nearly eight in ten 6-year leavers were gone by the end of the third year (Term 6).



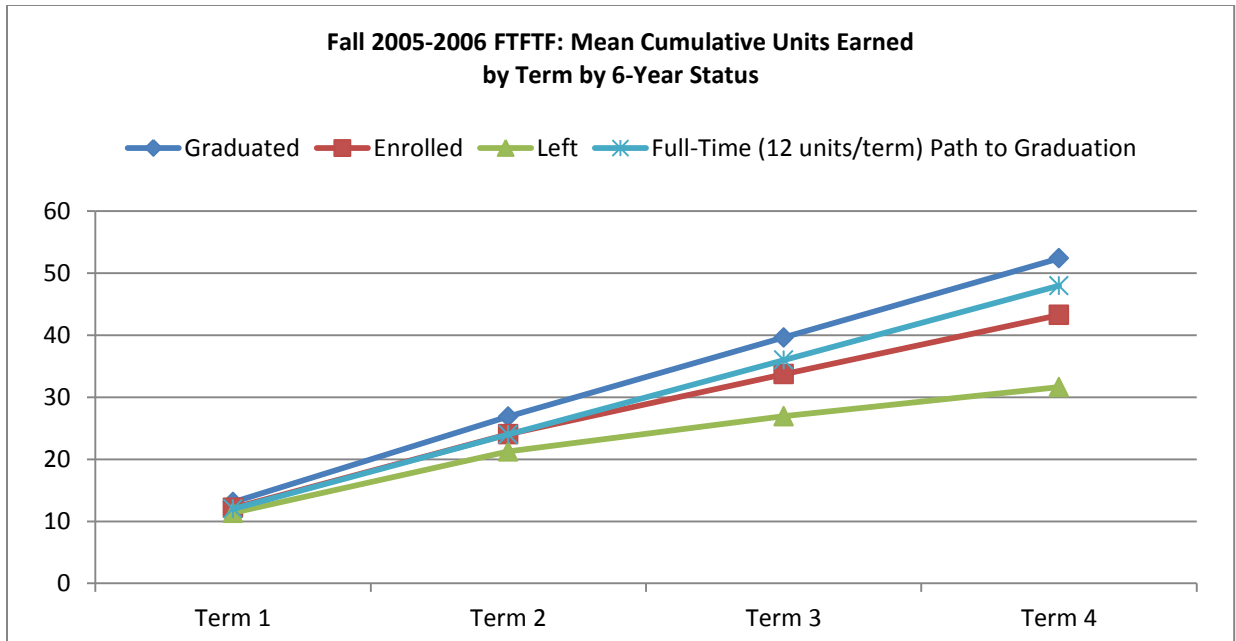
Academic Progress - Units Earned as a Percentage of Units Attempted

The academic progress of students was examined by 6-year status. Do students leave without graduating because they are not making progress? Among the 6,116 FTFTF of the Fall 2005 and 2006 cohorts, the mean course completion rates¹ for Terms 1-4 differed by 6-year status.



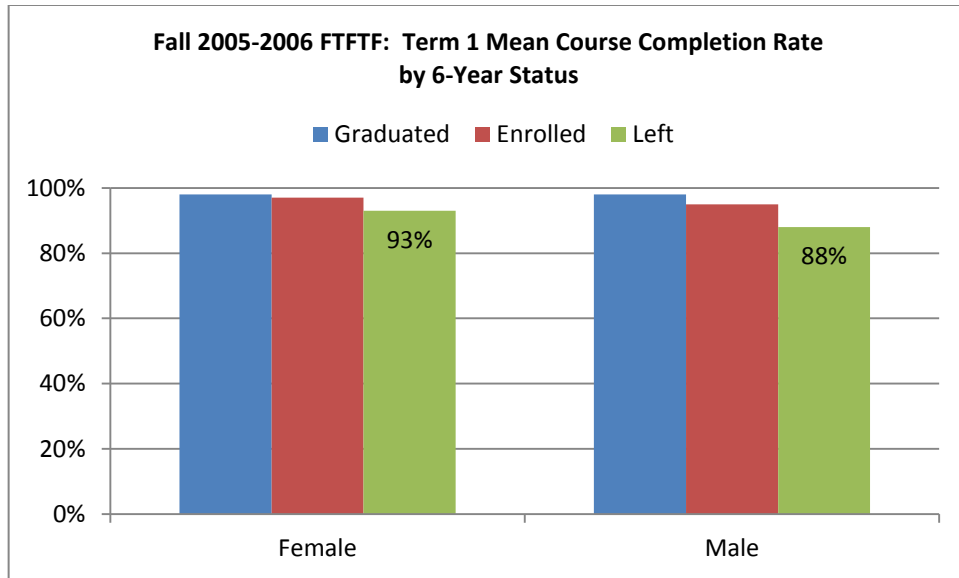
Not surprisingly, the leavers earned a smaller percentage of the units they attempted than did students who either graduated within six years or continued their enrollment beyond six years. There was also a slight, continual decline over time in the course completion rates of the 6-year leavers and, after Term 2, of those who were still enrolled after six years.

¹ Only courses for which units could be earned for grades above "F" were included in the calculation of course completion rates.

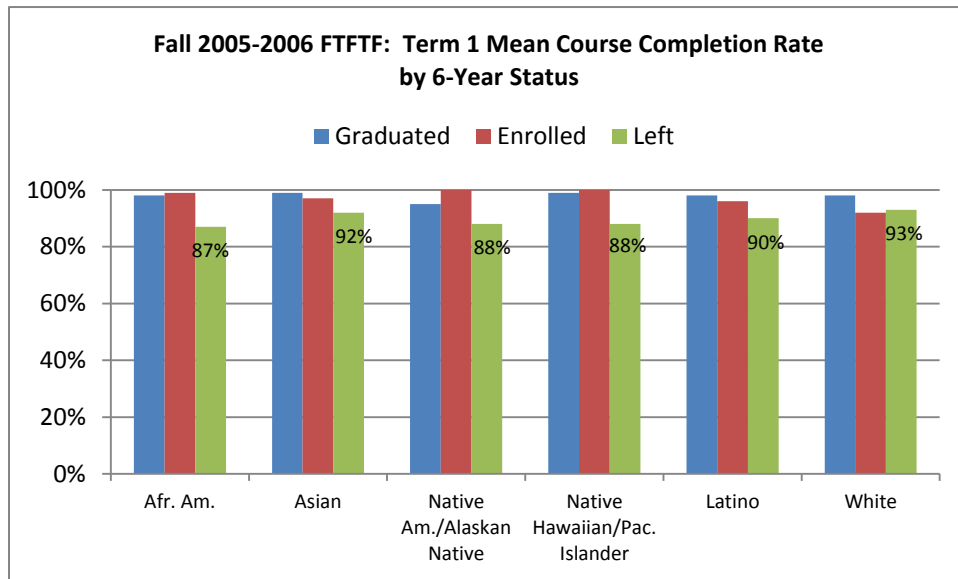


Over Terms 1-4, the trajectory of cumulative course completion by the 6-year graduates was slightly higher than the minimum full-time (12 units/term) path to graduation, while the trajectory of progress by the 6-year leavers was lower than the 12 unit per term path to graduation, more noticeably so after Term 2.

Mean course completion rates for Term 1 were further examined by 6-year student enrollment status. Focusing on the first term facilitates identification of possible indicators of long-term performance and opportunities for early intervention to improve outcomes. Regardless of the demographic or academic category examined, completion rates were consistently lowest among eventual 6-year leavers. Statistically significant differences among only the leavers are discussed below.

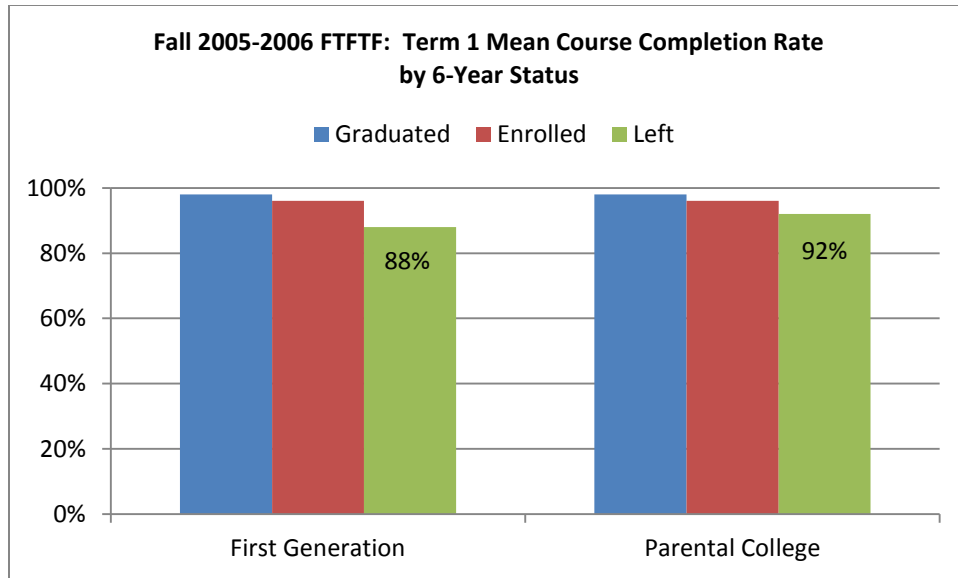


Female 6-year leavers had a significantly higher mean Term 1 course completion rate than did male 6-year leavers.

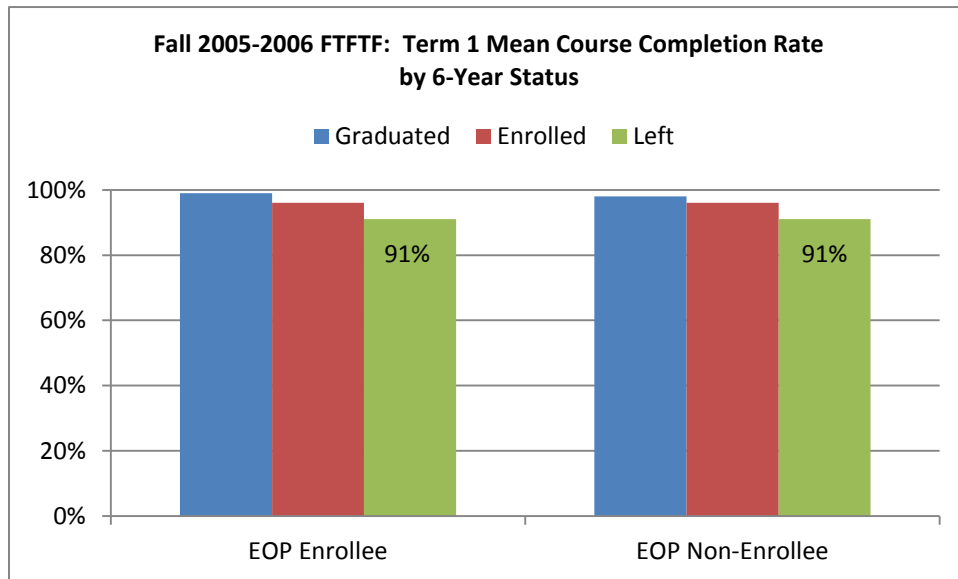


Among only leavers, the mean Term 1 course completion rates of White, Asian, and Latino students were significantly higher than that of African American students, with the White mean also significantly higher than the Latino mean.²

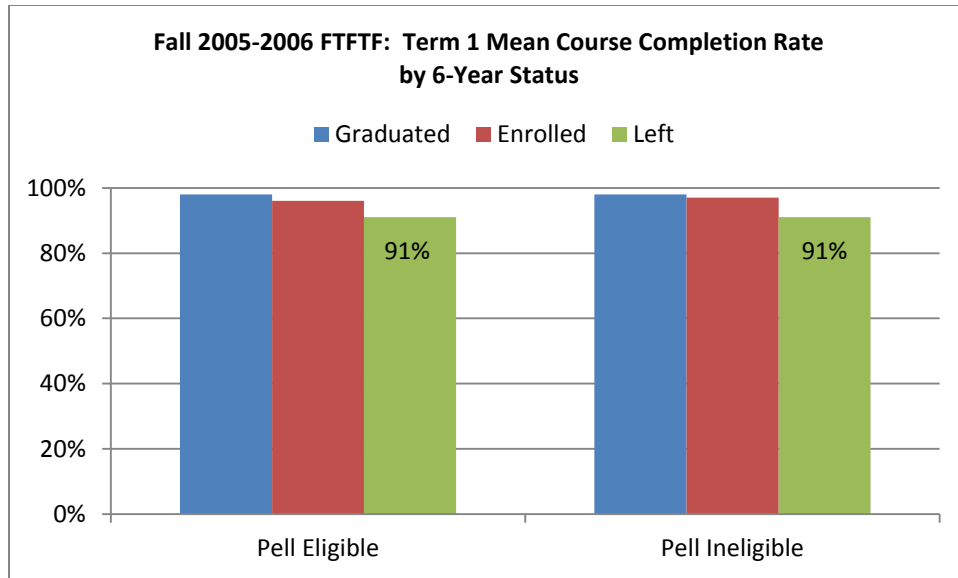
² Native American/Alaskan Native and Native Hawaiian/Other Pacific Islander students were not included in this analysis because of their very small numbers.



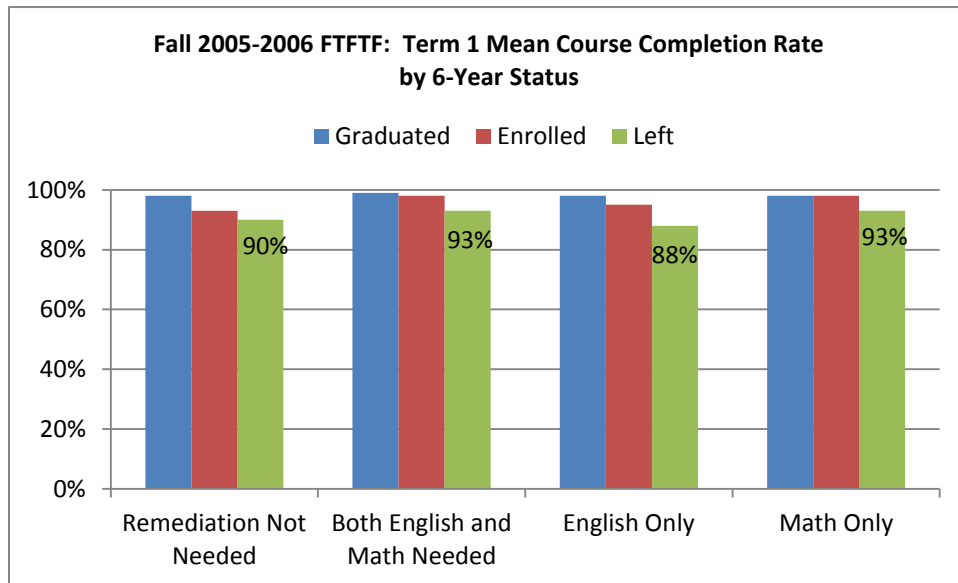
Again among only the leavers, first generation college students had a significantly lower mean Term 1 course completion rate than had those whose parent(s) attended college.



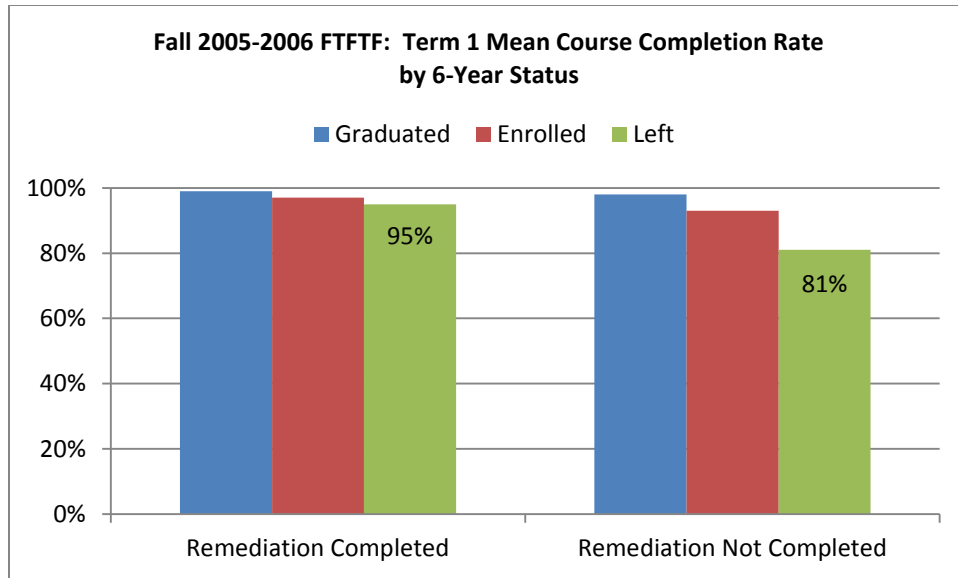
There were no statistically significant differences in mean Term 1 course completion among leavers on the basis of EOP enrollment.



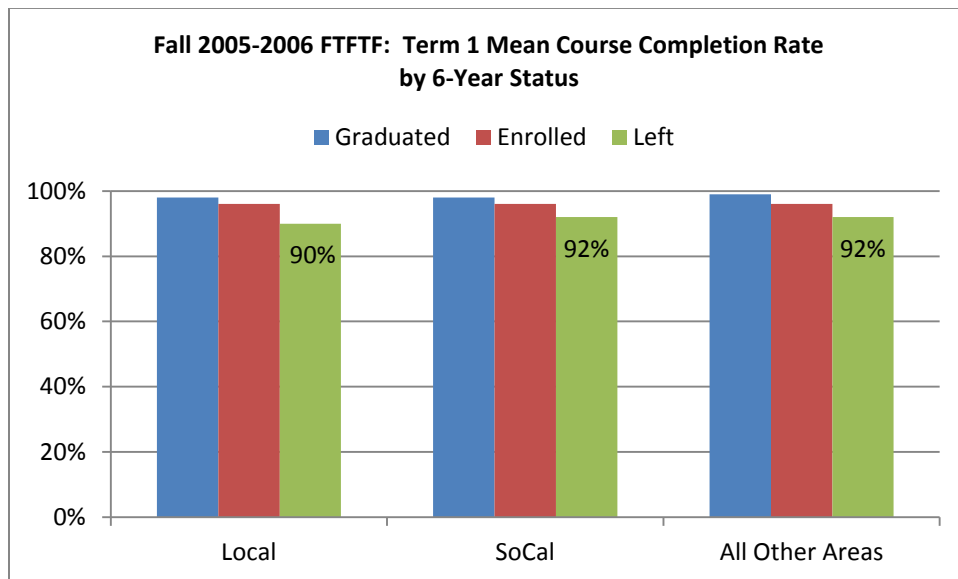
There were no statistically significant differences in mean course completion rates among leavers on the basis of Pell grant eligibility.



Among the 6-year leavers, the mean Term 1 course completion rates of those needing remediation in math only or in both English and math were significantly higher than those of students needing remediation in English only or not needing remediation at all. On this single measure of academic progress, the need for remediation did not appear to be a barrier to success.

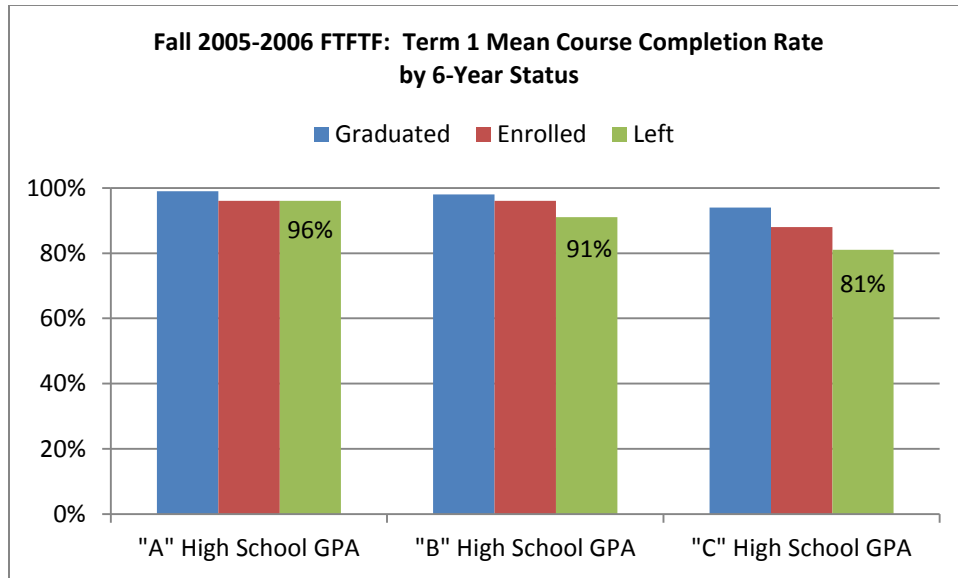


The significant difference in mean Term 1 course completion between those who completed the remediation they needed and those who did not is not surprising among the leavers. Those not completing remediation are not permitted to enroll after Term 2.

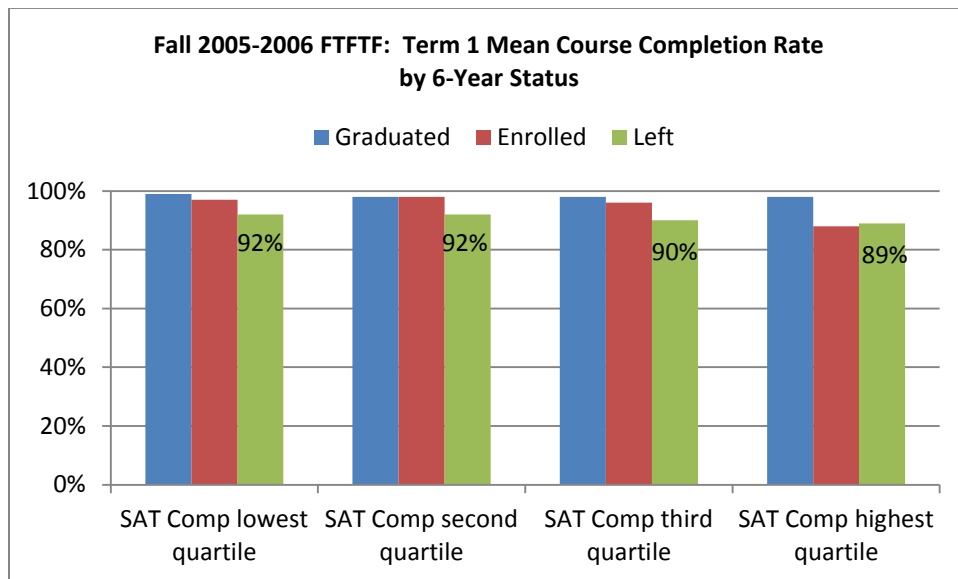


The mean course completion rates of 6-year leavers in Term 1 did not differ by their geographic origin.

Note: Geographic origin reflects the location of the student's last high school. The local area includes the counties of Alameda, Contra Costa, Marin, San Francisco, San Mateo, and Santa Clara. Southern California includes the counties of Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura counties.



Among 6-year leavers, mean Term 1 course completion rates differed significantly by high school GPA group, with “A” students earning more of the units they attempted than did either “B” or “C” students and with “C” students earning the least.



Leaver mean course completion rates in Term 1 did not differ by SAT composite score grouping.

To summarize, course completion rates among eventual 6-year leavers were significantly more likely to be lower among students who were male, African American, first generation college-attending, in need of only English remediation or, surprisingly, no remediation at all, unremediated (non-completers of needed remediation), or “C” students in high school than among these students’ counterparts in each demographic or academic category.

A more detailed look at the early progress of the three 6-year status groups provides a deeper understanding of the first year performance of the eventual leavers. At the end of Term 2 (i.e., Year 1), students who eventually left by the end of the sixth year were already noticeably behind those who would graduate within six years or still be enrolled in terms of course completion, units earned, and campus GPA. A lower mean GPA at the end of Year 1 might have been expected of the eventual leavers. It should be pointed out, however, that some leavers achieved relatively high GPAs at SF State before choosing to transfer to other institutions.

End of Term 2 (Year 1)			
	Mean Course Completion Rate	Mean Cumulative Units Earned	Mean Campus GPA
Graduated	98%	26.88	3.03
Still Enrolled	96%	24.05	2.68
Left	88%	21.26	2.54

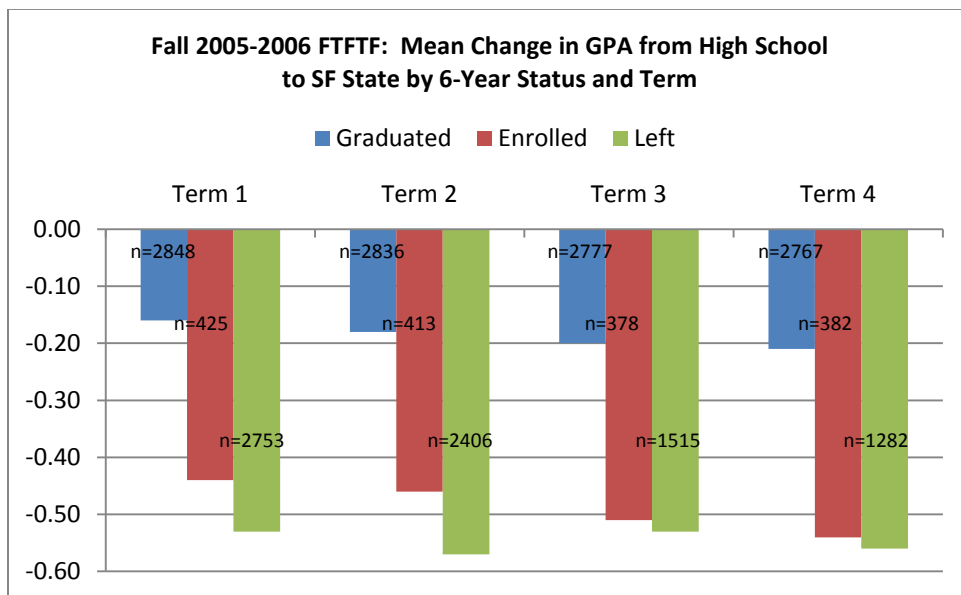
Using the same metrics as were used at the end of Term 2, how can the last term of attendance for each 6-year group be characterized? Among leavers, was it a term of poor performance that caused them to decide to leave SF State?

End of Last Term Attended			
	Mean Course Completion Rate	Mean Cumulative Units Earned	Mean Campus GPA
Graduated	98%	123.57	3.10
Still Enrolled	93%	129.46	2.60
Left	86%	43.11	2.37

At the end of their last term of attendance in the 6-year study timeframe, leavers' mean course completion rates, cumulative units earned, and campus GPA were lower than those of students who graduated or were still enrolled. The leavers' low mean cumulative units earned reflects their greater likelihood of leaving in earlier than in later terms, as described at the beginning of this report. Their mean course completion rate and GPA, however, were not so low that leaving would have been an obvious choice for all of these students. Poor academic performance might explain the departure of only some of the eventual leavers. A recent SF State study on probation among the Fall 2007 first-time freshmen showed that 67% of those who were placed on probation at some point left SF State voluntarily and did not return within four years. (Only 3% of students placed on probation were disqualified, i.e., were required to leave.) Yet, although probation contributes to attrition, it accounts for only some of the students who leave SF State without graduating. Only 16% of all Fall 2007 first-time freshmen were placed on probation and left voluntarily without graduating within four years, as opposed to 28% who were **not** placed on probation and apparently dropped out.

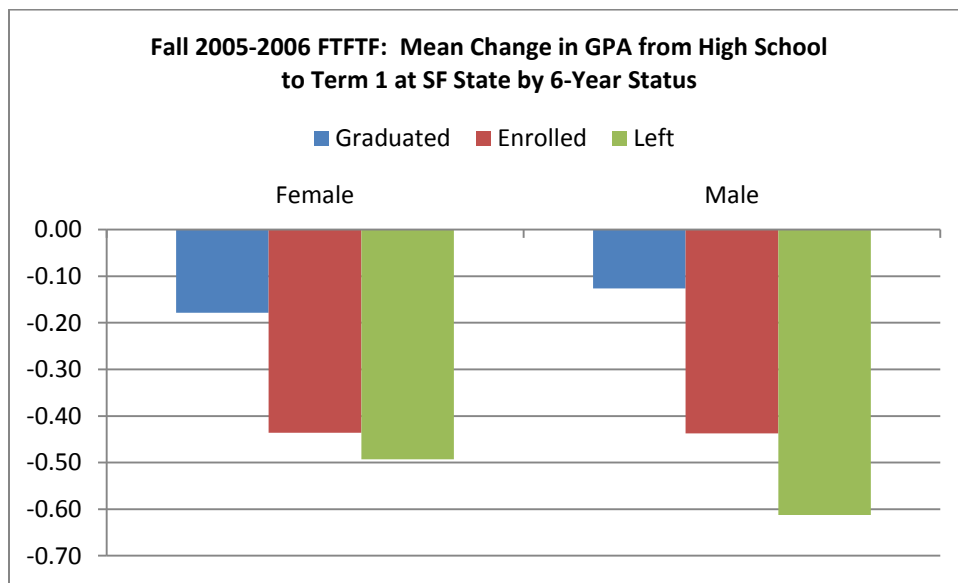
Academic Challenge - Change in GPA from High School to SF State

Although distinct differences were seen in the rate of academic progress made by 6-year graduates, continuing students, and leavers, more distinct differences were seen when GPA was examined. Research on the relationship between college GPA and attrition typically includes attention to first year college GPA with a focus on particularly low GPAs. At SF State, students whose GPA drops below 2.0 are placed on probation, but these students account for only some of those who, sooner or later, decide to leave without graduating, and probation does not necessarily lead to attrition. Other research has examined students' perception of their own academic performance in relation to their decision to leave college (altogether or the one they are attending) (Getzlaf, 1984; Stinebrickner, 2013). One way to quantify what students learn about their academic performance in college is to compare the difference between their high school GPA and their college GPA. This might serve as a measure of the challenge or difficulty that students encounter in their college coursework if their campus GPA is lower than their high school GPA. It could reflect the difference between their expectations and the reality of the effort required to maintain the level of achievement they demonstrated in high school. The Term 1 GPA of nearly two thirds (64%) of the students in this study was lower than their high school GPA. The mean differences between high school GPA and SF State campus GPA for Terms 1-4 were compared by student enrollment status (graduated, enrolled but not graduated, and not enrolled) after six years. The greatest decreases in GPA were seen among those who left without graduating. The patterns of GPA change between high school and the end of Terms 1-4 were similar across those terms for each of the three groups, as shown below. This study focuses on the changes in GPA from high school to Term 1.

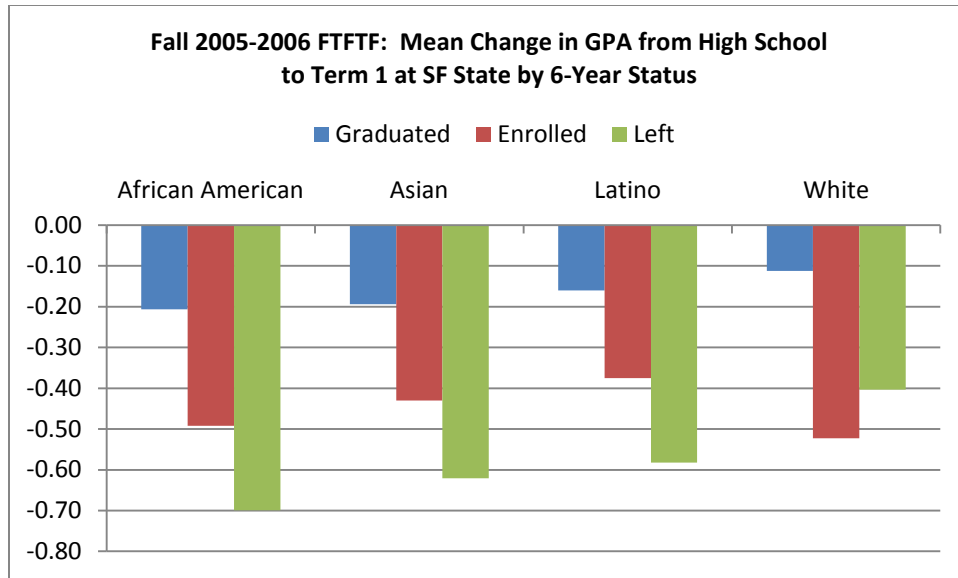


Few students whose GPA decreased between high school and Term 1 had a GPA in Term 2, 3, or 4 that was the same as or higher than their high school GPA (less than 10% of students). In other words, students whose GPA decreased in Term 1 were likely to continue to have a GPA lower than their high school GPA as terms passed, with the magnitude of the decrease staying at roughly the same level across Terms 2-4 within each of the three 6-year status groups. One might assume that, after their initial encounter with the more rigorous academic demands of college, these students would adjust their efforts and improve their GPA in subsequent terms, but that is not evident, as shown in the chart above.

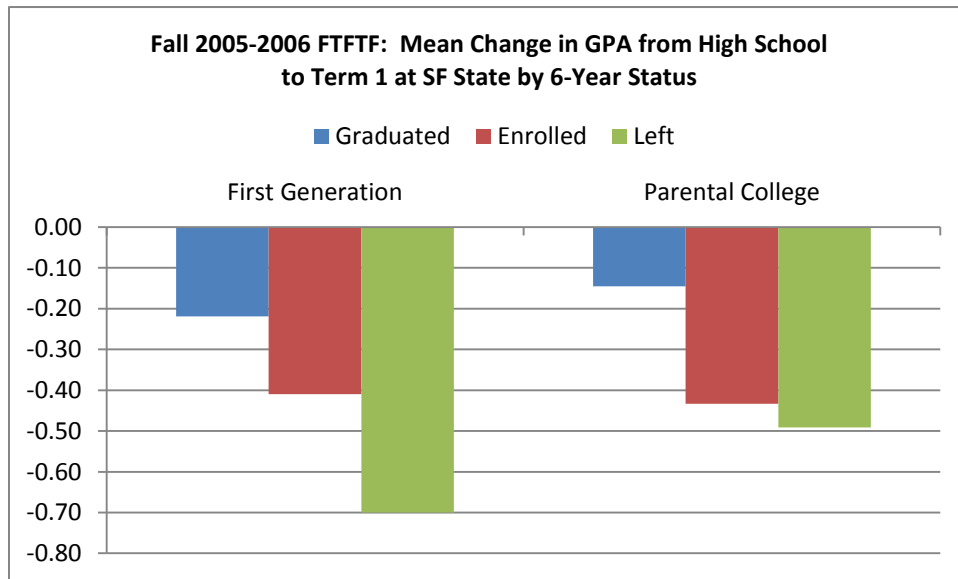
The following charts show the mean change (typically a decrease) in GPA from high school to the end of Term 1 at SF State by 6-year status and demographic or academic category.



Among leavers, male students experienced a significantly greater mean decline in GPA than did female students, but the reverse was seen among eventual graduates.

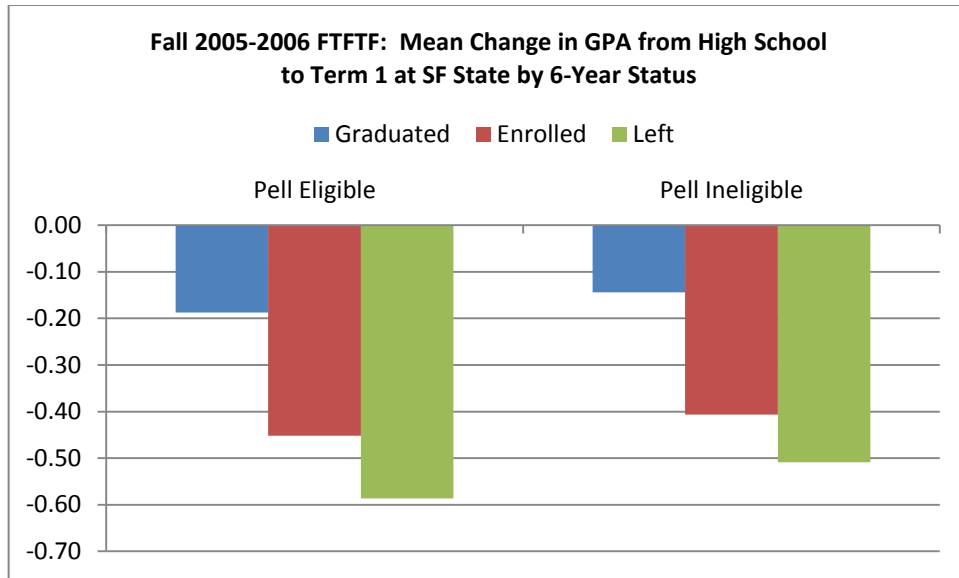


Among the 6-year leavers and among the graduates, White students' mean GPA change showed significantly less of a drop than did that of African American, Asian, or Latino students.³

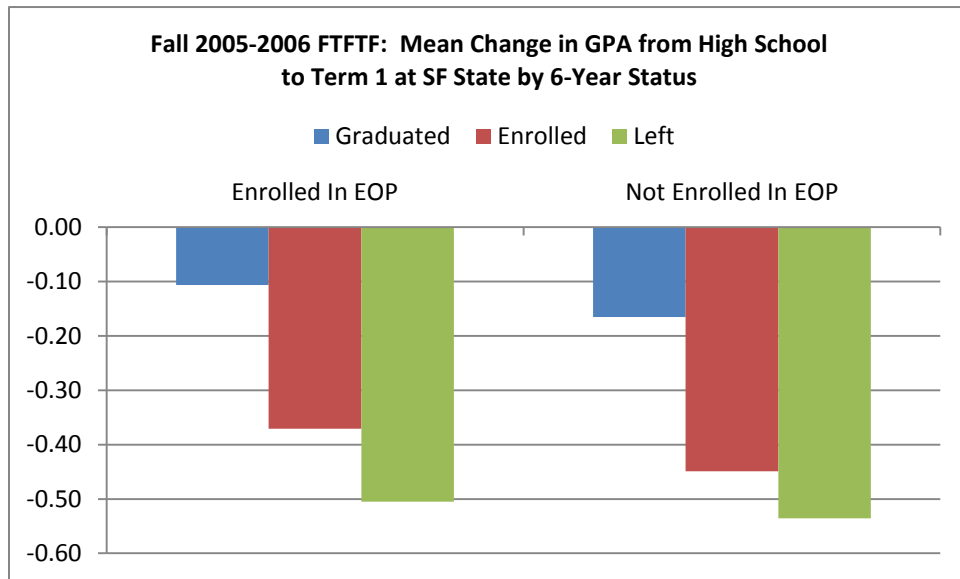


Among leavers and graduates, first generation college students experienced a significantly greater decrease in their GPA from high school to Term 1 than did students whose parent(s) attended college.

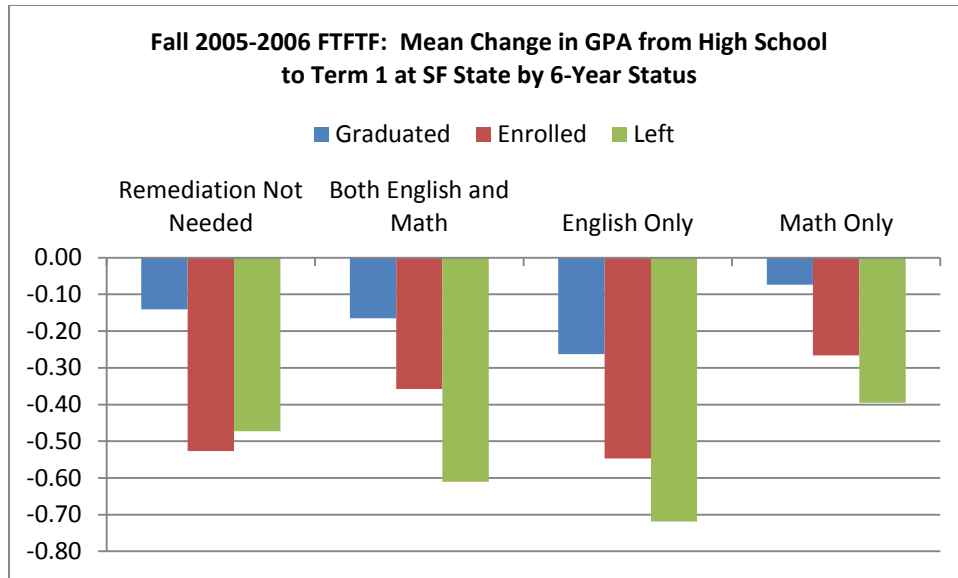
³ Native American/Alaskan Native and Native Hawaiian/Other Pacific Islander students were not included in this analysis because of their very small numbers.



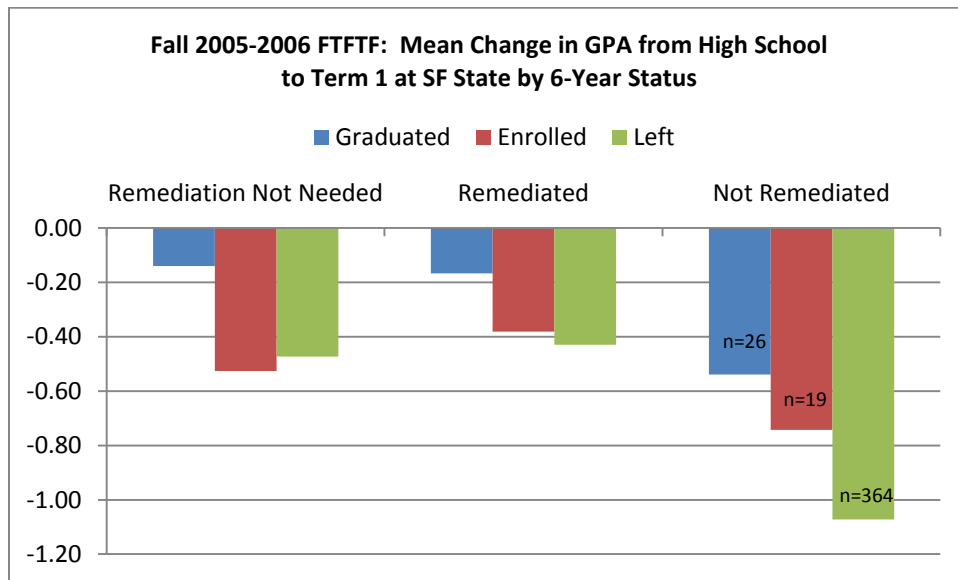
Mean GPA change did not differ significantly within 6-year status between groups of students who were and were not eligible for Pell grants.



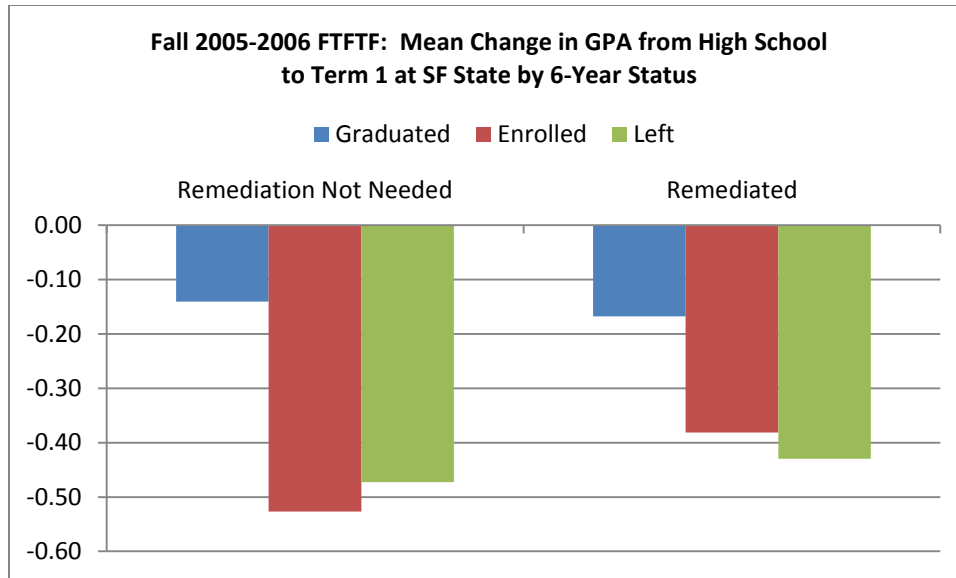
There were no significant differences in mean GPA change within 6-year status groups between students who were and were not enrolled in EOP.



In each of the 6-year status groups, the least mean decrease in GPA from high school to Term 1 was seen among students who needed only math remediation while the greatest mean decrease was seen among students who needed only English remediation. It is interesting to note that, among the students not needing remediation at all, the eventual 6-year graduates also showed relatively little decrease in their GPA while the students who were still enrolled after six years showed a greater mean decrease than did the 6-year leavers.



In every 6-year status group, the greatest decreases in GPA from high school to Term 1 were seen among students who did not complete the remediation they needed. It should be noted, however, that very few of the students who did not complete remediation graduated from SF State within or were still enrolled after six years.



Mean GPA change did not differ significantly between the remediated students and those who did not need remediation in within each 6-year status group.

This agrees with a finding in a recent SF State study of remediation among Fall 2005-2009 FTFTF. Although students who need remediation are, by definition, not college ready and might be expected to be less successful in college than are those who do not need remediation, this was not so.

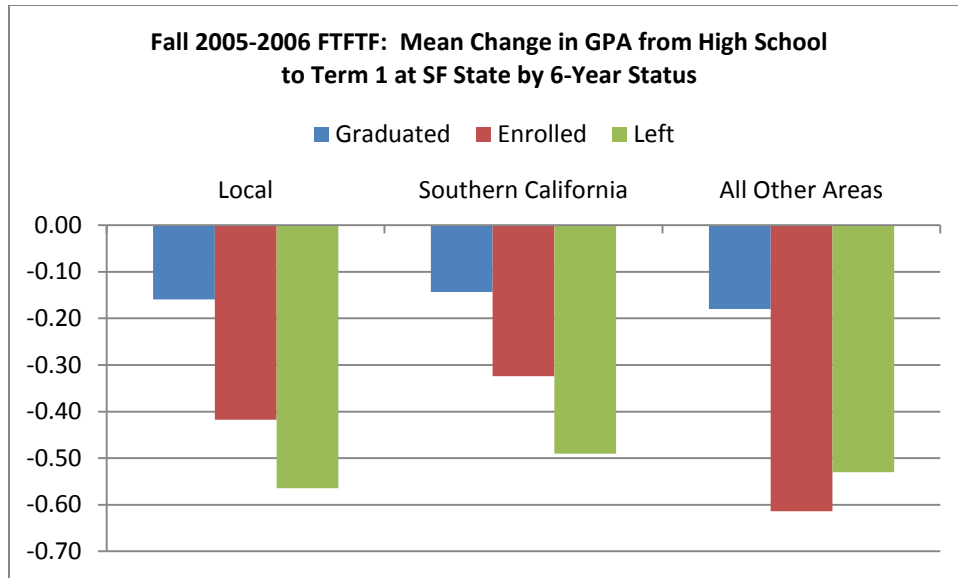
Of the FTFTF in the Fall cohorts of 2005 through 2009 who needed remediation, 86% completed remediation while 14% did not.

- 78% of the students who did *not* need remediation were retained in Term 3
- 75% of those who *needed* remediation were retained in Term 3
 - 87% of students who *completed* remediation were retained in Term 3

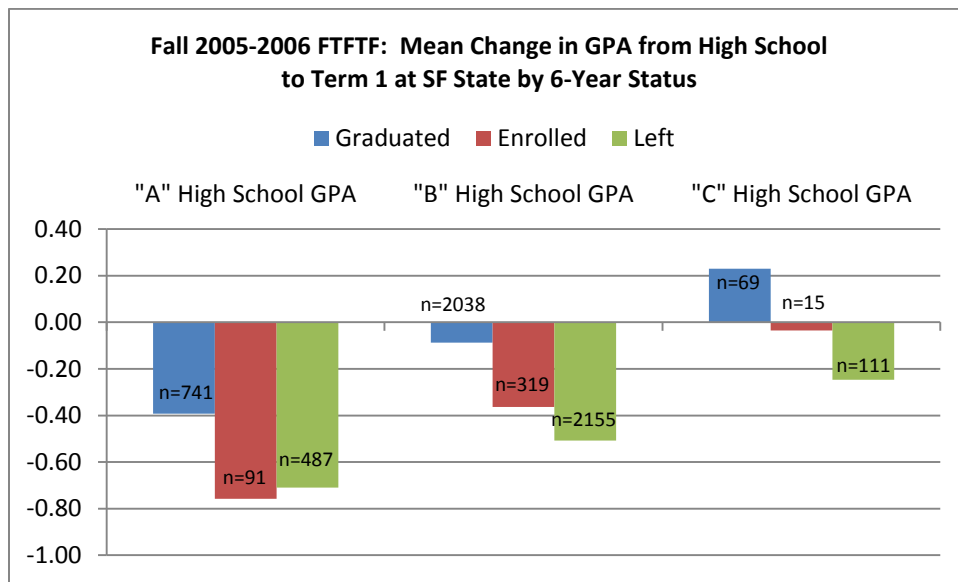
Among Fall 2005 FTFTF, the 6-year graduation rate for those who completed remediation was higher than that of students who did not need remediation at all:

- 48% of the students who had *not* needed remediation graduated within six years
- 51% of the students who had *needed and completed* remediation graduated within six years

It is not surprising, therefore, to find in the present study that mean change in GPA from high school to SF State Term 1 within each 6-year status group did not differ significantly by the need for or completion of needed remediation.



There were no significant differences in mean GPA change between groups of students from different geographic areas within each 6-year status. Despite the apparent differences in mean GPA decrease among the still-enrolled students, these were not statistically significant because very small numbers of non-local students were still enrolled after six years.



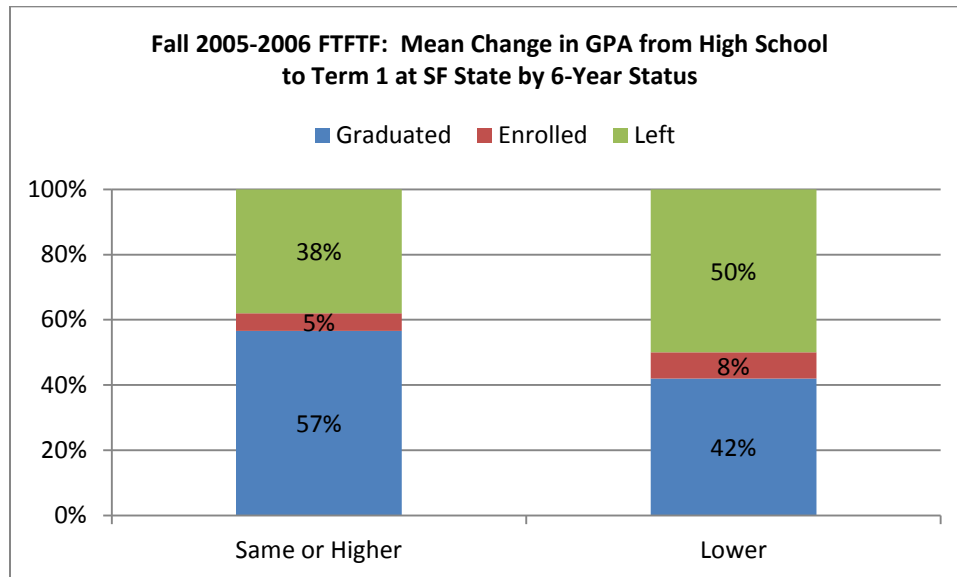
In all 6-year status groups, the mean change in GPA differed significantly by high school GPA grouping. It is interesting to note that decreases in GPA from high school to college were seen not only among the eventual 6-year leavers with the lowest high school GPAs but among leavers with "A" and "B" high school GPAs who appear to have found Term 1 at SF State more challenging than expected.

Among the 6-year leavers, “A” high school students were significantly more likely than were “B” or “C” students to have lower GPAs in Term 1. Nearly nine in ten (87%) of the “A” students’ GPAs fell between high school and Term 1 in contrast to 67% of “B” students’ and 51% of “C” students’ GPAs. Even seemingly well-prepared students suffered a GPA setback in their first semester at SF State.

It should also be noted that the improvement of “C” high school students who graduated from SF State was the only mean improvement in GPA between high school and Term 1 at SF State in any of the demographic or academic group comparisons shown above, although the numbers of “C” high school students were, admittedly, small in comparison to the numbers of “A” and “B” students.

To summarize, the groups of 6-year leavers who experienced significantly greater mean decreases in GPA from high school to Term 1 at SF State included male, non-White⁴, first generation college, unremediated, or, in contrast to the results of the earlier examination of course completion rates, “A” high school students.

Another way to get a broad view of GPA change, as shown in the chart below, is to divide students into two groups: those whose GPA improved or stayed the same from high school to SF State and those whose GPA decreased.



There was a statistically significant relationship between GPA change and students’ 6-year enrollment status. Students whose GPA decreased were significantly more likely than were those whose GPA improved or stayed the same to leave and less likely to graduate within six

⁴ Native American/Alaskan Native and Native Hawaiian/Other Pacific Islander students were not included in this analysis because of their very small numbers.

years. Among the 63% of students whose GPA decreased from high school to Term 1 at SF State, 50% became 6-year leavers, while 42% became 6-year graduates.

There were significant 6-year status differences between students whose GPA decreased when grouped by the magnitude of the decrease.

- Students whose GPA decreased less than one grade point (74% of those whose GPA decreased) were significantly more likely to graduate within six years and less likely to leave.
- Conversely, students whose GPA decreased one grade point or more were significantly more likely to leave by the end of the sixth year and less likely to graduate.

Identifying Potential Leavers

The effort to put in place interventions that might prevent the departure of large numbers of students early in their SF State enrollment relies on identifying student demographic or academic characteristics that are strongly related to student attrition. Which characteristics are related to a greater likelihood of becoming a 6-year leaver?

Up to this point, 6-year status was examined by one demographic or academic category at a time. Now, in order to facilitate comparison of the relative contributions to 6-year status of all of the categories, multinomial logistic regression results are presented. The factors in the regression model that were found to be statistically significant, while holding all other factors constant, are shown below for the 6-year graduates vs. leavers.⁵ The regression results are presented in greater detail in Appendix B. The regression model as a whole explains roughly 20% of the variation in 6-year status among the students in the study cohorts.

Graduating within six years (vs. leaving) was significantly more likely for these students:

- **Male** students were 37% more likely than were female students to graduate
- **Asian** students were 36% more likely than were White students to graduate
- **First generation** students were 23% more likely than were students whose parent(s) attended college to graduate
- **Pell-eligible** students were 28% more likely than were Pell-ineligible students to graduate (vs. leave)
- **Local** area students were 41% more likely than were non-local non-Southern California students to graduate
- Students who **lived on campus** in their first year were 19% more likely than were those who lived off campus to graduate

⁵ The other two outcome comparisons of leavers vs. those still enrolled and of graduates vs. those still enrolled are not discussed because only 7% of the study cohort students were still enrolled after six years.

Additionally:

- For every 1-point **increase in high school GPA**, the likelihood of graduating **tripled** (i.e., increased 211%)
- For every 1-point **increase in GPA from high school to Term 1** at SF State, the likelihood of graduating **doubled** (i.e., increased 112%)
- For every 1-unit increase in **Term 1 units attempted**, the likelihood of graduating increased 14%

It is also noteworthy that the likelihood of Pell-eligible students still being enrolled after six years as opposed to graduating or leaving were, respectively, 3.4 and 4.3 times higher than they were for Pell-ineligible students.

Where Leavers Went

As part of the attempt to explain why students leave SF State without graduating, National Student Clearinghouse (NSC) data on college enrollment and degrees earned were obtained for the 6-year leavers in this study and analyzed by demographic and academic characteristics. Seven in ten leavers (71%) subsequently enrolled in another institution of higher education within six years of their SF State matriculation.

How did the leavers who continued their higher education elsewhere differ from those who did not? Students significantly less likely to enroll elsewhere after leaving SF State included those who were male, Asian, Pell-eligible, local, from another country, or who lived off campus in their first year at SF State, and they were more likely to leave in the fourth, fifth, or sixth academic year after matriculation. As seen in recent SF State studies of attrition, leavers from Southern California were significantly more likely than were students from the local area or from other areas outside of Southern California to enroll in another institution of higher education, and leavers who subsequently enrolled elsewhere were significantly more likely to leave SF State in the first two academic years than in later terms.

The first college or university attended by students who continued their education after leaving SF State were:

- 92% in California
- 69% 2-year colleges; 31% 4-year colleges or universities
- 90% public colleges or universities
- 17% other CSU campuses
- 2% University of California (UC) campuses

Leavers from non-local non-Southern California areas who continued their education were significantly more likely to first enroll at a 4-year (rather than 2-year) institution after leaving SF State, as were leavers who had an “A” high school GPA, an “A” or “B” Term 1 GPA, or a GPA that improved or stayed the same from high school to Term 1 at SF State, or who lived on campus in their first year.

Leavers who were significantly more likely than were others to enroll first at another CSU (vs. a non-CSU institution) campus were female, were from California counties outside of the local area and outside of Southern California, or had a Term 1 GPA higher than or the same as their high school GPA.

Of the leavers who subsequently enrolled elsewhere, 26% earned a bachelor’s degree within six years of their SF State matriculation. These students were significantly more likely to be:

- Female
- White or non-URM
- Non-first generation
- Ineligible for Pell grants
- Not enrolled in EOP
- Not in need of remediation
- Non-local

Or to have an:

- “A” high school GPA
- “A” or “B” SF State Term 1 GPA
- SF State Term 1 GPA the same as or higher than their high school GPA

Or to have:

- Lived on campus in their first year at SF State
- Left at the end of their second year at SF State

The institutions where bachelor’s degrees were earned by leavers within six years of SF State matriculation were:

- 88% in California
- 80% public colleges or universities
- 53% other CSU campuses
- 21% UC campuses

Summary

In order to facilitate the early identification of students who might benefit from timely intervention, further factors associated with attrition were identified and combined with those previously studied at SF State to create a better model for identifying students who appear to be at an increased risk of leaving SF State without graduating.

Academic progress, defined as course completion, was examined by students' 6-year enrollment status. Not surprisingly, students who left without graduating within six years earned a smaller percentage of the units they attempted than did students who either graduated within or continued their enrollment beyond six years. There was also a slight, continual decline over time in the course completion rates of the 6-year leavers. Course completion rates were significantly more likely to be lower among leavers who were male, African American, first generation, in need of English-only remediation or no remediation at all, unremediated, or "C" students in high school.

More distinct differences were seen when academic challenge was examined. This was measured as the change in GPA between high school and SF State. Students whose GPA decreased were significantly more likely than were those whose GPA improved or stayed the same to leave and less likely to graduate within six years. A decrease in students' GPA between high school and college, rather than simply the level to which their GPA falls, may provide to students a clear indication that their academic efforts are inadequate. Groups of 6-year leavers who experienced significantly greater mean decreases in GPA from high school to Term 1 were male, non-White, first generation, unremediated, or "A" high school students.

In order to compare the relative contributions of all of the demographic or academic categories included in this study to 6-year status, multinomial logistic regression was used. Students more likely than others to graduate (vs. leave) within six years included those who were male, Asian, first generation, Pell-eligible, or local, and were more likely to have lived on campus in their first year. With every 1-point increase in high school GPA, the likelihood of graduating tripled, and with every 1-point increase in GPA from high school to Term 1, the likelihood of graduating doubled.

Analysis of National Student Clearinghouse data revealed that 71% of leavers continued their higher education elsewhere within six years of their SF State matriculation. Of the leavers who subsequently enrolled elsewhere, 26% earned a bachelor's degree within six years. More than half of the leavers' bachelor's degrees (53%) were earned at other CSU campuses, and 21% were earned at UC campuses.

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Appendix A – Demographic and Academic Characteristics by 6-Year Status

6-Year Status

Gender	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
Female	1828	46.2%	254	6.4%	1877	47.4%	3959	100.0%
Male	1039	48.2%	173	8.0%	945	43.8%	2157	100.0%
Total	2867	46.9%	427	7.0%	2822	46.1%	6116	100.0%

Race/Ethnicity	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
African American	139	35.4%	33	8.4%	221	56.2%	393	100.0%
Asian	1008	53.1%	195	10.3%	697	36.7%	1900	100.0%
Latino	488	44.5%	85	7.8%	523	47.7%	1096	100.0%
Native American/Alaskan Native	13	43.3%	1	3.3%	16	53.3%	30	100.0%
Native Hawaiian/Other Pacific Islander	36	41.9%	7	8.1%	43	50.0%	86	100.0%
White	907	45.2%	69	3.4%	1032	51.4%	2008	100.0%
Total	2591	47.0%	390	7.1%	2532	45.9%	5513	100.0%

First Generation College Attendance	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
First Generation	604	49.2%	121	9.9%	502	40.9%	1227	100.0%
Parental College	2131	46.1%	287	6.2%	2203	47.7%	4621	100.0%
Total	2735	46.8%	408	7.0%	2705	46.3%	5848	100.0%

Pell Eligibility	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
Pell Eligible	1016	47.0%	284	13.1%	864	39.9%	2164	100.0%
Pell Ineligible	1851	46.8%	143	3.6%	1958	49.5%	3952	100.0%
Total	2867	46.9%	427	7.0%	2822	46.1%	6116	100.0%

EOP Enrollment	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
Enrolled in EOP	282	48.9%	68	11.8%	227	39.3%	577	100.0%
Not Enrolled in EOP	2585	46.7%	359	6.5%	2595	46.8%	5539	100.0%
Total	2867	46.9%	427	7.0%	2822	46.1%	6116	100.0%

Geographic Origin (High School)	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
Local Area	1533	49.3%	315	10.1%	1262	40.6%	3110	100.0%
Southern California	725	43.8%	47	2.8%	885	53.4%	1657	100.0%
All Other Areas	608	45.1%	65	4.8%	675	50.1%	1348	100.0%
Total	2866	46.9%	427	7.0%	2822	46.1%	6115	100.0%

First-Year Housing	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
On Campus	1160	47.7%	83	3.4%	1187	48.8%	2430	100.0%
Off Campus	1707	46.3%	344	9.3%	1635	44.4%	3686	100.0%
Total	2867	46.9%	427	7.0%	2822	46.1%	6116	100.0%

SF State: Identifying Potential Leavers

High School GPA	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
A	741	55.8%	91	6.9%	495	37.3%	1327	100.0%
B	2039	44.7%	320	7.0%	2202	48.3%	4561	100.0%
C	69	35.2%	15	7.7%	112	57.1%	196	100.0%
Total	2849	46.8%	426	7.0%	2809	46.2%	6084	100.0%

SAT Composite Score	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
First quartile (under 890)	484	44.1%	127	11.6%	487	44.4%	1098	100.0%
Second quartile (890-1000)	545	47.0%	95	8.2%	520	44.8%	1160	100.0%
Third quartile (1000-1110)	616	48.6%	67	5.3%	585	46.1%	1268	100.0%
Fourth quartile (over 1110)	590	48.0%	54	4.4%	586	47.6%	1230	100.0%
Total	2235	47.0%	343	7.2%	2178	45.8%	4756	100.0%

Change in GPA from High School to SF State Term 1	Graduated		Still Enrolled		Left		Total	
	n	%	n	%	n	%	n	%
Higher or No Change	1229	56.6%	116	5.3%	825	38.0%	2170	100.0%
Lower	1619	42.0%	309	8.0%	1928	50.0%	3856	100.0%
Total	2848	47.3%	425	7.1%	2753	45.7%	6026	100.0%

Appendix B – Multinomial Logistic Regression

SF State: Identifying Potential Leavers

Parameter Estimates

		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
6-year graduate vs. leaver	Intercept	-4.956	.436	129.399	1	.000			
	SAT Composite Score	.000	.000	1.141	1	.285	1.000	.999	1.000
	High School GPA	1.135	.098	134.075	1	.000	3.111	2.567	3.770
	Pell Eligible	.247	.086	8.323	1	.004	1.281	1.083	1.515
	URM (vs. White)	-.015	.096	.024	1	.877	.985	.816	1.189
	Asian (vs. White)	.308	.097	10.144	1	.001	1.361	1.126	1.645
	Male	.311	.077	16.448	1	.000	1.365	1.174	1.587
	First Generation College	.206	.099	4.321	1	.038	1.229	1.012	1.492
	EOP Enrollee	.013	.140	.008	1	.927	1.013	.770	1.333
	Local Origin (vs. non-local non-Southern California)	.341	.097	12.443	1	.000	1.407	1.164	1.701
	Southern California Origin (vs. non-local non-Southern California)	-.005	.101	.002	1	.960	.995	.817	1.212
	On-Campus Housing Year 1	.174	.083	4.468	1	.035	1.191	1.013	1.400
	Change in GPA from High School To Term 1	.749	.054	190.556	1	.000	2.116	1.902	2.353
Total Units Attempted in Term 1	.134	.017	65.271	1	.000	1.143	1.107	1.181	

Note: $R^2 = .18$ (Cox & Snell), $.21$ (Nagelkerke). Model $\chi^2(26) = 791.700, p < .000$.

SF State: Identifying Potential Leavers

Parameter Estimates

		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
6-year graduate vs. still enrolled	Intercept	-1.766	.801	4.868	1	.027			
	SAT Composite Score	.001	.000	8.985	1	.003	1.001	1.001	1.002
	High School GPA	.482	.176	7.466	1	.006	1.619	1.146	2.286
	Pell Eligible	-1.215	.147	67.988	1	.000	.297	.222	.396
	URM (vs. White)	-.165	.198	.692	1	.405	.848	.575	1.251
	Asian (vs. White)	.107	.195	.301	1	.583	1.113	.760	1.629
	Male	-.261	.136	3.697	1	.055	.770	.590	1.005
	First Generation College	.373	.158	5.570	1	.018	1.451	1.065	1.978
	EOP Enrollee	.430	.203	4.488	1	.034	1.537	1.033	2.287
	Local Origin (vs. non-local non-Southern California)	-.344	.191	3.247	1	.072	.709	.487	1.031
	Southern California Origin (vs. non-local non-Southern California)	.510	.250	4.172	1	.041	1.665	1.021	2.715
	On-Campus Housing Year 1	.518	.177	8.580	1	.003	1.679	1.187	2.374
	Change in GPA from High School To Term 1	.501	.092	29.672	1	.000	1.651	1.378	1.977
Total Units Attempted in Term 1	.087	.029	9.151	1	.002	1.091	1.031	1.154	
6-year leaver vs. still enrolled	Intercept	3.190	.802	15.802	1	.000			
	SAT Composite Score	.002	.000	12.560	1	.000	1.002	1.001	1.003
	High School GPA	-.653	.179	13.390	1	.000	.520	.367	.738
	Pell Eligible	-1.463	.149	95.802	1	.000	.232	.173	.310
	URM (vs. White)	-.150	.198	.573	1	.449	.861	.584	1.269
	Asian (vs. White)	-.202	.196	1.056	1	.304	.817	.557	1.201
	Male	-.573	.138	17.158	1	.000	.564	.430	.740
	First Generation College	.167	.161	1.066	1	.302	1.181	.861	1.621
	EOP Enrollee	.417	.210	3.941	1	.047	1.517	1.005	2.290
	Local Origin (vs. non-local non-Southern California)	-.686	.192	12.782	1	.000	.504	.346	.734
	Southern California Origin (vs. non-local non-Southern California)	.515	.249	4.285	1	.038	1.673	1.028	2.724
	On-Campus Housing Year 1	.344	.178	3.744	1	.053	1.410	.996	1.997
	Change in GPA from High School To Term 1	-.248	.088	7.891	1	.005	.780	.656	.928
Total Units Attempted in Term 1	-.047	.028	2.743	1	.098	.954	.902	1.009	