UNIVERSITY OF SOUTH CAROLINA AIKEN

USCA Academic Tracking Report #5

Fall 2003 First Year Cohort Retention to Fall 2004

Conducted in Spring 2005

Prepared By:

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University Mission

Founded in 1961, the University of South Carolina Aiken (USCA) is a comprehensive liberal arts institution committed to active learning through excellence in teaching, faculty and student scholarship, research, creative activities and service. In this stimulating academic community, USCA challenges students to acquire and develop the skills, knowledge, and values necessary for success in a dynamic global environment.

The university offers degrees in the arts and sciences and in the professional disciplines of business, education, and nursing. All courses of study are grounded in a liberal arts and sciences core curriculum. USCA also encourages interdisciplinary studies and collaborative endeavors.

Emphasizing small classes and individual attention, USCA provides students with opportunities to maximize individual achievement in both academic and co-curricular settings. The institution challenges students to think critically and creatively, to communicate effectively, to learn independently, and to acquire depth of knowledge in chosen fields. The university values honesty, integrity, initiative, hard work, accomplishments, responsible citizenship, respect for diversity, and cross-cultural understanding.

USC Aiken attracts students of varying ages and diverse cultural backgrounds who have demonstrated the potential to succeed in a challenging academic environment. In addition to serving the Savannah River area, USCA actively seeks student enrollment from all parts of South Carolina as well as from other states and countries.

As a senior public institution of the University of South Carolina, USCA combines the advantages of a smaller institution with the resources of a major university system. Located in beautiful, historic Aiken, South Carolina, USCA is an institution of moderate size (2,500-5,000 students) that offers baccalaureate degrees in a number of disciplines, completion baccalaureate degrees at University of South Carolina regional campuses, and master's degrees in selected programs.

The USCA World Wide Web Home Page is: http://www.usca.edu
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Executive Summary

This study investigates patterns of academic performance and institutional retention among the 2003 First Year (FY) cohort of full-time, first year students at the University of South Carolina Aiken (USCA). This study focuses on factors that impact the one year retention rate, a nationally accepted measure of institutional quality, and the study extends research and findings from *Academic Tracking Report #*3, an earlier examination of retention patterns of first year students entering in the previous academic year (2002). The overarching findings of the present investigation indicate that weak academic performance in high school and low first semester collegiate GPAs are the factors most directly related to high levels of student attrition before the sophomore year. Efforts directed toward improving the quality of student learning outcomes before and after matriculation could lead to higher retention rates. Major findings include:

- The one-year retention rate of the 2003 FY cohort was 64.4%, a decline of 3.8% from the previous year; about three fourths of this attrition occurred between Spring 2004 and Fall 2004. This is the second year of decline in the first-year retention rate, and it is the lowest rate of first-year student retention since 1994, when the retention rate was 63.2%.

- One year retention rates varied by race and by gender. While the retention rate of African American students declined only slightly from 69.0% for the 2002 FY cohort to 68.3% for the 2003 FY cohort, the retention rate of white students went down more noticeably from 67.7% to 63.4%; this drop was almost 7% among white women. While African American students were retained at higher rates than white students, their mean first semester GPA of 1.96 was significantly lower than that of whites (2.58), making them much more likely to drop out in a subsequent semester. Consistent with national and historical trends, women were retained at higher rates than men; as a group, women had a retention rate of 66.7% while men had a retention rate of 60.5%.

- Academic inputs, as measured by high school grades, class rank, and test scores, were again observed to correlate positively with student persistence, and decline in the retention rate from 2002 to 2003 may be attributable in part to the matriculation of greater numbers of students with weaker high school records.
    - For the 103 students in the bottom half of their graduating high school class, the retention rate was 43.7%.
    - For the 183 students with a calculated core high school GPA below 2.50, the retention rate was 49.7%.
    - For the 60 students with combined SAT scores below 800, the retention rate was 58.3%.
    - For the 113 students with a predicted GPA below 2.25, the retention rate was 51.3%.

- Students whose academic preparation included at least one tech prep course in English, Math, or Lab Science were retained at a rate of just 52.5% and had lower collegiate GPAs than students who took all college prep courses in high school; no negative effects were observed among students who took tech prep courses in social sciences or as electives.

- Analysis of responses provided by entering students on the CIRP Freshman Survey revealed four broad factors that influence retention rates at statistically significant levels:

    - Perceived academic ability and preparation, including the completion of remedial coursework in high school
    - Time usage and behaviors in high school
    - Commitment to the institution
    - Motivations for going to college

- First semester grade point average (Sem GPA) was the most prominent factor related to persistence to the second year; high performing students were retained at lower rates among the 2003 FY cohort compared to the previous year:
    - For the181 entering students who earned a Fall 2003 semester GPA over 3.0, the retention rate to the second year was 82.3% (down 5.1% from 2002)
    - For the 131 entering students earning a Fall 2003 GPA between 2.0 and 3.0, the one-year retention rate was just under 70% (down over 5% from 2002).
    - Among the 168 students with a Fall 2003 GPA below 2.0, the first-year retention rate was 39.3% (up 0.6% from 2002).

- Earning a low grade in even just one course decreased the probability a student would persist to a second year, while earning even just one course grade of A increased the chances of remaining at the institution. More than half (52.9%) of the students in the cohort earned a D, W, or F in one or more courses in their first semester. About a third (32.9%) of the students in the cohort earned 2 or more grades of D, F, or W, and the retention rate for this group was 41.2%. By contrast, for the 253 students who earned no grades of D, F, or W in their first semester (only 47.1% of the cohort), the one-year retention rate was 80.2% (down 7.0% from 2002). Students who earned just one A in any first semester course were retained at a rate of 71.7%, while students who earned no A's in their first semester were retained at a rate of just 52.3%.

- Retention rates by course enrollments varied widely and were not consistent with findings from research on the 2002 FY cohort. Students who took ASUP 101 and earned a B or better were retained at a rate of 77.8%, a rate comparable to that of students earning A's B's in other popular freshman courses. It is noteworthy, however, that over three fourths of students taking ASUP 101 earned an A or a B. Performance and retention in ASUP 101 during Fall 2003 were not observed to be related to race or gender. Such findings may suggest that the subject matter of the classes that students take may be less predictive of their persistence than high or low grades earned in these courses.

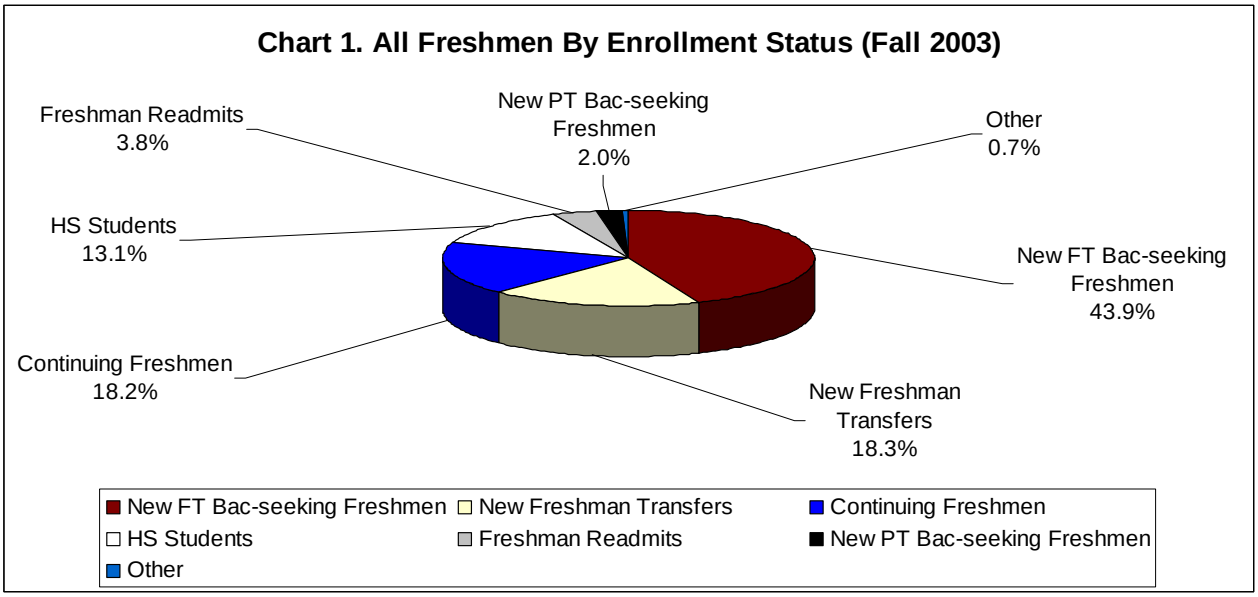
- Second semester GPA and cumulative GPA mirrored first semester academic performance. About a third of the students in the cohort earned below a 2.0 semester GPA in the spring semester and the same proportion also had a cumulative GPA below 2.0. Retention of these students was under 50%. Retention of students with a cumulative GPA below 1.5 was just 26.5%. These findings reinforce the critical role of the first semester in affecting students' chances to persist to a second year at USCA.

Methodology and Population for Analysis

The 537 students included in this current analysis comprise all first-year, baccalaureate degree-seeking freshmen entering USCA in Fall 2003 who carried a full-time load (12 hours or more) at the time of the data "freeze" on October 25, 2003. This group of students comprises the 2003 FY cohort. This data set was verified directly with the USC Office of Institutional Planning and Analysis on the Columbia campus and through the USC Data Warehouse.[1] While this group of students represents only 43.9% of USCA students classified as freshmen (up from 38% in 2002), it is the population tracked for institutional retention of first-year students and the population for which 6-year completion rates are typically reported. Demographic information for the group of students was harvested from the E02AIKN file on the CMS mainframe and matched using MS Access 2003 with grade data from the unofficial totals files for the Fall 2003, Spring 2004, and Fall 2004 semesters. Students who were not registered for courses in a semester following a semester for which they were registered were considered not to have been retained by the institution.[2]

Table 1. All Freshmen by Enrollment Status (Fall 2003)

	New Freshmen			New Freshmen Transfers			Freshmen Readmits			Continuing Freshmen			Transient Freshmen			H.S. Students	Total
	FT	PT	All	FT	PT	All	FT	PT	All	FT	PT	All	FT	PT	All	All	
Associate	3	--	3	3	8	11	--	3	3	3	3	6	--	--	--	--	23
Baccalaureate	537	25	562	141	71	212	31	13	44	114	35	149	--	--	--	--	967
Non-Degree	--	--	--	--	1	1	--	--	--	2	66	68	--	5	5	160	234
Total	540	25	565	144	80	224	31	16	47	119	104	223	--	5	5	160	1,224



[1] This resource is online at http://kudzu.ipr.sc.edu/dataware/tablegen/ and is publicly accessible.

[2] One male international student in the FY cohort entered USCA with 67 hours earned; the rules governing retention reporting count this student as though he is an entering new freshman at USCA.

During orientation sessions held in July and August of 2003, the students completed the Cooperative Institutional Research Program (CIRP) Freshman Survey. These surveys were sent to the Higher Education Research Institute (HERI) at the University of California Los Angeles for data processing. Summarized results and a file of raw data were return to the IE Office at USCA (Hosch, 2003).

A total of 490 survey respondents (91.2% of the cohort) provided personally identifiable surveys, and their responses were matched to subsequent data about individual academic performance and persistence. Analysis of 228 survey items in SPSS was conducted using a t-test comparison of means between retained and not retained students, assuming equal and unequal variances. Factors isolated with a level of significance $p<0.05$ were also analyzed using ANOVA. Given that most variables in CIRP are nominal discontinuous variables, values of eta squared (η^2) were generated. This statistic for nonlinear functions measures the proportion of variance in the dependent variable accounted for by the independent variable, although basic tests for linear relationships were also performed where appropriate. Variables for which generally linear patterns were not observed are not discussed at length, even where statistically significant groupings are present. Such factors may be more appropriately examined using discriminant analysis or decision trees, although the collection of more data is necessary for model testing to determine validity.

Factors identified as significant were then coded and grouped into five broad categories:

- Perceived academic ability and preparation, including the completion of remedial coursework in high school
- Time usage and behaviors in high school
- Commitment to the institution
- Motivations for going to college
- Other attitudes and values

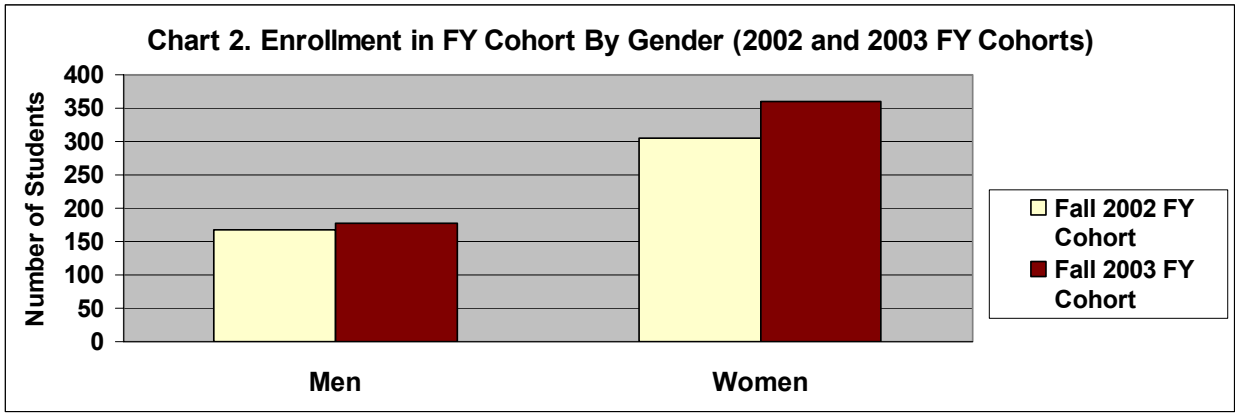
These categories were the basis for variable grouped entry into logistic regression models, although in all trials to date, these models fail to predict students who are not retained with accuracy of more than 30-40% (and often less than this). Further, even the models that have the best predictive power produce Cox and Snell R^2 values of less than 0.20, indicating that they at most explain about 20% of observed variance. Due to these limitations, only the statistically significant descriptive differences in retention rates are presented in this study, without an attempt to apply inferential statistics.

Self-reported data about financial aid and parental income were also examined. This examination is somewhat preliminary and is significantly limited by data collection that combines merit-based aid and need based aid into the same category. Further research in this area still needs to be done.

Demographic Profile

Enrollment of full-time first year students increased from 471 in Fall 2002 to 537 in Fall 2003, for a rise in enrollment of 14.0% for the entering class. Proportionally more women matriculated as full-time first-year students at USCA in the Fall of 2003 than in the Fall of 2002. In Fall 2003, a full two-thirds (67.0%) of the entering class was women, up from 64.5% in Fall 2002.

The vast majority of the Fall 2003 cohort was made up of traditional age students, entering college directly from high school. As of the beginning of September 2003, a total of 503 students were ages 18 or 19; two students were ages 15 or 16; and four students were age 17. Six students were 20; seven were between 21 and 29; two were in their 30s, and two were in their 40s. The mean age was 18.5 years old. The age of one student was unavailable.



As in recent years, most students in the 2003 FY cohort were white, non-Hispanic (71.3%), while just under a quarter of the class (22.9%) was black or African-American, non-Hispanic. Both of these percentages appear about one percentage point higher than the percentages of the cohort entering in 2002, but these apparent increases result from a decrease in students who did not report a race or ethnicity. Enrollment growth was most pronounced among white women, with an increase of 56 white women in the cohort from 304 in Fall 2002 to 360 in Fall 2003. The number of white men remained just about constant, with 128 in Fall 2002 and 130 in Fall 2003. There were modest increases in the numbers of African American or black men (from 22 in Fall 2002 to 32 in Fall 2003) and women (from 78 in Fall 2002 to 91 in Fall 2003). All other races or ethnicities comprised just 3.7% of the entering class. Because the proportion of these ethnicities is relatively small, they are not a primary focus of this study.

Table 2. FY Cohort Enrollment by Race or Ethnicity (2002 and 2003)

	Fall 2002		Fall 2003	
	N	Pct	N	Pct
White	331	70.3%	383	71.3%
Amer. Indian	2	0.4%	2	0.4%
Afr. Amer. or Black	100	21.2%	123	22.9%
Asian, Pacific Isl.	6	1.3%	6	1.1%
Hispanic	7	1.5%	9	1.7%
No Response	25	5.3%	11	2.0%
Other	0	0.0%	3	0.6%

The vast majority (92.9%) of the entering class in Fall 2003 indicated that their primary residence was located in South Carolina; this represents a 2% increase of in-state students from Fall 2002, when 90.9% of the cohort originated from South Carolina. The remainder of the class was composed of residents from Georgia (1.9%), fourteen other U.S. states (3.7%), and four English-speaking foreign countries (1.1%). While 12 international students enrolled as members of the first year cohort in Fall 2002, only 6 international students entered as first year students in Fall 2003. This decline in the number of international students mirrors a national trend of fewer international students in the United States following the terrorist attacks of September 11, 2001 (Davis & Chin, 2004).

Table 3. Geographic Origin of First Year Cohort (2002 and 2003)

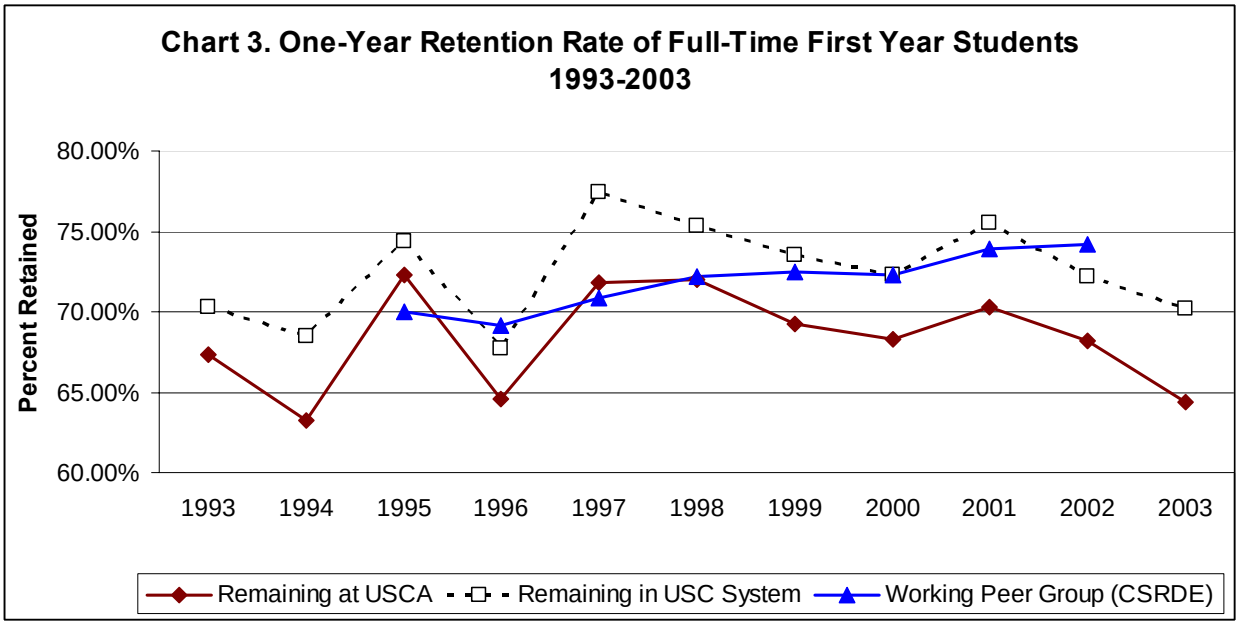
	Fall 2002		Fall 2003	
	N	%	N	%
California	2	0.4%	1	0.2%
Colorado	--	--	1	0.2%
Connecticut	1	0.2%	--	--
Florida	--	--	2	0.4%
Georgia	12	2.5%	10	1.9%
Illinois	1	0.2%	1	0.2%
Indiana	1	0.2%	--	--
Kansas	1	0.2%	--	--
Massachusetts	--	--	1	0.2%
Maryland	2	0.4%	2	0.4%
Minnesota	--	--	1	0.2%
North Carolina	1	0.2%	1	0.2%
New Jersey	2	0.4%	3	0.6%
New York	--	--	1	0.2%
Ohio	--	--	1	0.2%
Oregon	2	0.4%	--	--
Pennsylvania	2	0.4%	2	0.4%
South Carolina	424	90.0%	499	92.9%
Tennessee	--	--	2	0.4%
Texas	5	1.1%	--	--
Virginia	1	0.2%	1	0.2%
West Virginia	1	0.2%	--	--
Wisconsin	1	0.2%	--	--
Foreign Countries	12	2.5%	6	1.1%
Unknown	--	--	2	0.4%
Total	471	100.0%	537	100.0%

Overall One Year Retention

The one year retention rate of students in the 2003 FY cohort was 64.4%; for students who remained in the USC System, the one year retention rate was 70.2%. This rate declined from 68.2% for those entering in 2002 to 64.4% for those entering in 2003. This is the second year of decline in the first-year retention rate, and it is the lowest rate of first year student retention since 1994, when the retention rate was 63.2%. As noted in previous research, retention with in the USC system is typically 4-5% higher than the one-year retention rate of students who remain at USC Aiken. While precise data about undergraduate student migration is not available for this cohort, historical data would suggest that the bulk of these students transfer to USC Columbia (Weeks 2004, p. 46).

Table 4. One-Year Retention Rate of FY Cohort Fall 1993-2003

Cohort Year	N	Remaining at USCA	Remaining in USC System	Working Peer Group (CSRDE)
1993	300	67.3%	70.3%	
1994	321	63.2%	68.5%	
1995	347	72.3%	74.4%	70.0%
1996	384	64.6%	67.7%	69.1%
1997	305	71.8%	77.4%	70.9%
1998	403	72.0%	75.3%	72.2%
1999	393	69.2%	73.5%	72.5%
2000	473	68.3%	72.3%	72.3%
2001	417	70.3%	75.5%	73.9%
2002	471	68.2%	72.2%	74.2%
2003	537	64.4%	70.2%	



Consistent with findings from previous research about when students leave USCA, just over two-thirds of attrition in the 2003 FY cohort occurred over the summer between the second and third semesters of study. Women continued to be retained at higher rates than men, with a 66.7% retention rate for women, and a 60.5% retention rate for men.

Table 5. Retention Rates by Gender and Race (2003 FY Cohort)

	1st Semester	2nd Semester		3rd Semester	
	N	N	Ret. %	N	Ret. %
Men	**177**	**162**	**91.5%**	**107**	**60.5%**
White	130	117	90.0%	77	59.2%
Amer. Indian	1	1	100.0%	1	100.0%
Afr. Amer. or Black	32	31	96.9%	22	68.8%
Asian, Pacific Isl.	3	3	100.0%	3	100.0%
Hispanic	4	4	100.0%	2	50.0%
Other	1	1	100.0%	1	100.0%
No Response	6	5	83.3%	1	16.7%
Women	**360**	**325**	**90.3%**	**240**	**66.7%**
White	253	223	88.1%	166	65.6%
Amer. Indian	1	1	100.0%	1	100.0%
Afr. Amer. or Black	91	87	95.6%	62	68.1%
Asian, Pacific Isl.	3	3	100.0%	3	100.0%
Hispanic	5	5	100.0%	4	80.0%
Other	2	2	100.0%	1	50.0%
No Response	5	4	80.0%	3	60.0%
Grand Total	**537**	**487**	**90.7%**	**347**	**64.6%**

Retention rates declined for both groups from 2002 levels, although the drop was more pronounced among women (-4.4%) than among men (-2.9%). A decrease in the retention rate of white students, especially white women, accounts for much of the drop in the overall retention rate. Retention of white women declined from 71.9% for the 2002 FY cohort to 65.6% for the 2003 FY cohort. Retention of white men dropped one percent from 60.2% for the 2002 FY cohort to 59.2% for the 2003 FY cohort. Retention of all African American or Black students declined less than one percent from 69.0% for the 2002 FY cohort to 68.3% for the 2003 FY cohort, and one year retention rates of Black or African American men rose very slightly from 68.2% for the 2002 FY cohort to 68.8% for the 2003 FY cohort.

While there were too few out-of-state students to draw statistically reliable conclusions about their retention patterns, the retention rate of students who were not residents of South Carolina increased from 69.7% for the 2002 FY cohort to 75.0% for the 2003 FY cohort. Given the relatively small numbers of out of state students, this increase may represent a random variation, but it does reinforce the fact that more pronounced retention losses occurred among legal residents of South Carolina.

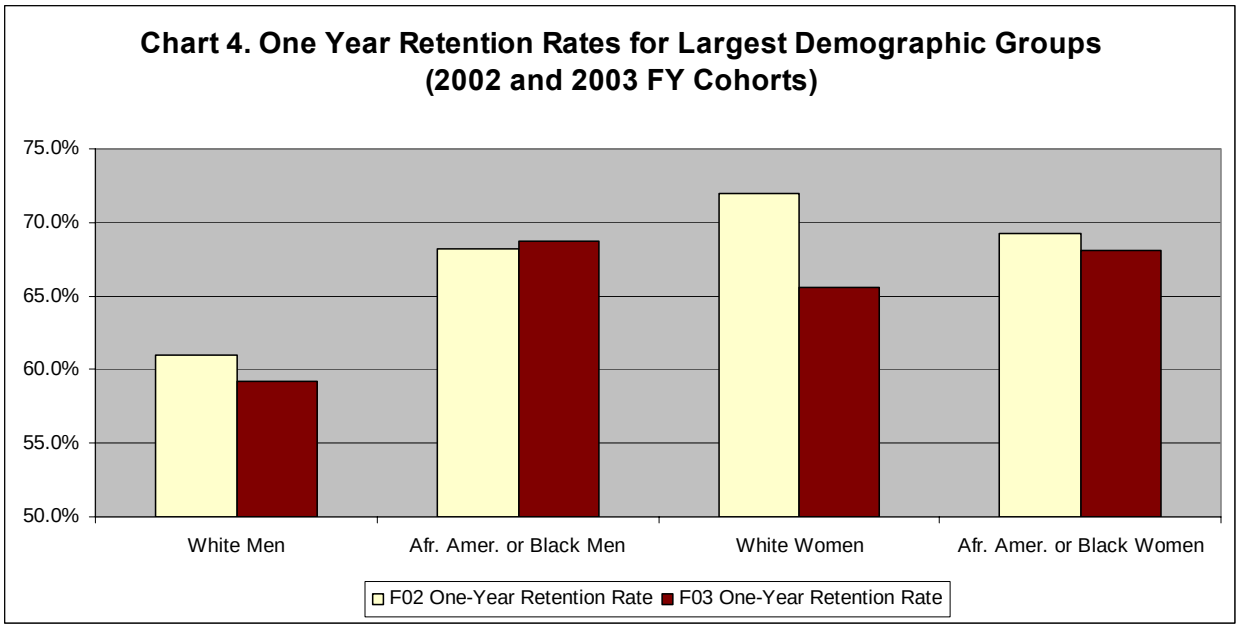
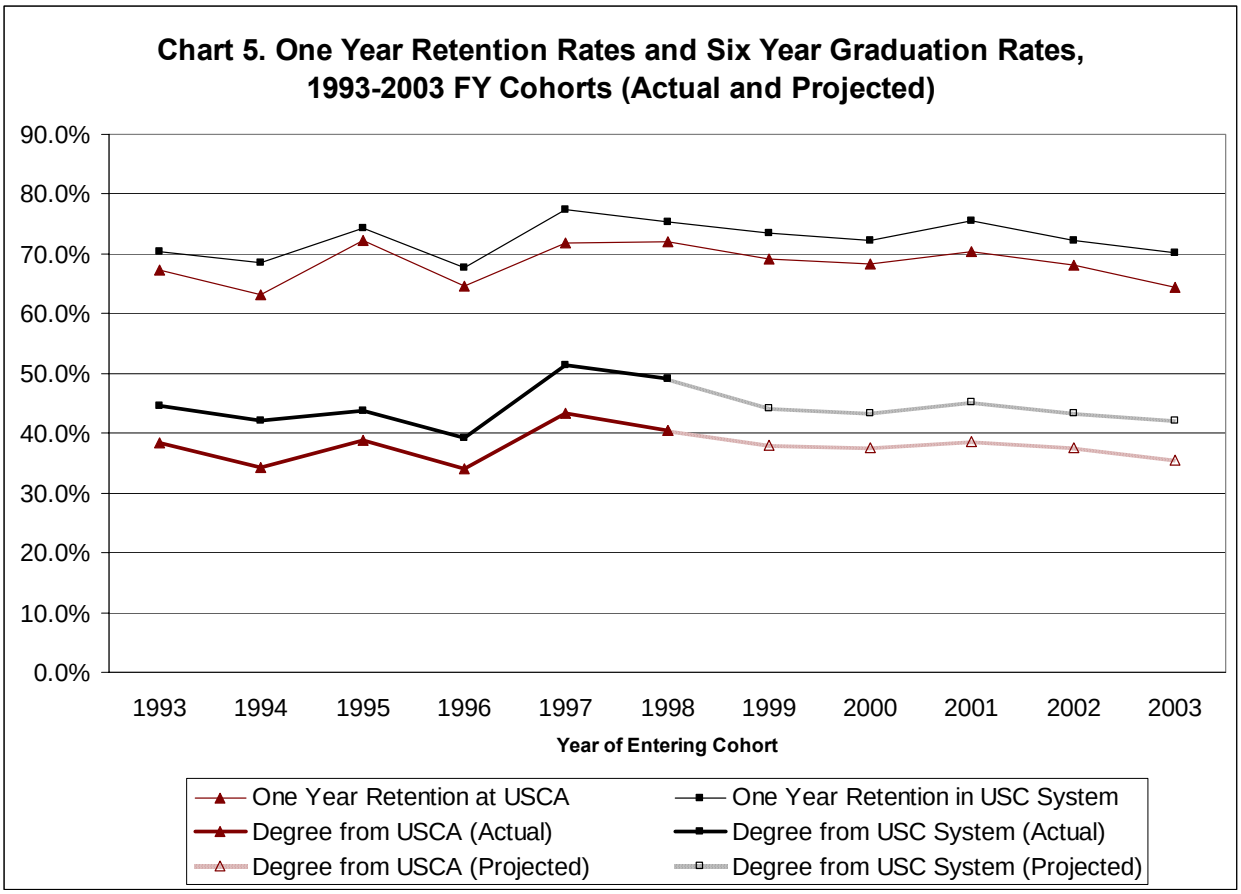


Table 6. One Year Retention Rates by State Residency (2002 and 2003 FY Cohorts)

	2002 FY Cohort					2003 FY Cohort				
	1st Semester	2nd Semester		3rd Semester		1st Semester	2nd Semester		3rd Semester	
	N	N	Pct Retention	N	Pct Retention	N	N	Pct Retention	N	Pct Retention
All	471	425	90.2%	321	68.2%	537	487	90.7%	347	64.6%
SC Residents	428	384	89.7%	291	68.0%	497	448	90.1%	317	63.8%
Non-Residents	43	41	95.3%	30	69.7%	40	39	97.5%	30	75.0%

The overall drop in the one year retention rate is significant because of the observed relationship between a cohort's one year retention rate and the subsequent graduation rate of these students in subsequent years. That is, when more students in a cohort persist into the second year, more students in that cohort receive degrees within six years of entering as full-time freshmen. For instance, the sharp upturn in graduation rates for the 1997 entering cohort of freshmen depicted in Chart 5 corresponds to a similar spike in this cohort's one-year retention rate.[3]

[3] The significantly higher retention rate in 1997 is likely related to the state-mandated removal of remedial courses from the USCA curriculum, which prompted a substantial number of accepted freshmen to take several hours of remedial courses through Aiken Technical College. As a result, these students with relatively weaker entering academic profiles were not counted as entering full-time students at USCA, and neither their retention nor graduation rates are tracked for reporting to the U.S. Department of Education, the South Carolina Commission on Higher Education, nor national publications such as *U.S. News and World Report*.



If all other factors were to remain constant, this pattern suggests that a gradual decline in the six-year graduation rates will be observed to mirror the decline in first-year retention rates through 2003 (see Chart 5). Given the relationship between one year retention rates and six year graduation rates since 1993 and assuming a yield rate that matches historical patterns, the six year graduation rate for the next five years could be expected to range between about 38.5% and 35.5%. Improving the one year retention rate can be considered both a short-term and long-term investment, since later graduation rates will likely improve along with the retention rate.

Entering Academic Profile and Retention

The 2003 FY cohort had a slightly weaker academic profile than the 2002 FY cohort, and this difference in earlier performance may contribute to lower retention rates. For the entire 2003 FY cohort, the mean math SAT score was 492 (Std. dev. = 82); the mean verbal SAT score was 487 (Std. dev. = 81), and the combined SAT score was 979 (Std. dev. = 146), representing a 12 point decline in the mean SAT score from the score of the class entering the previous year, for which the combined SAT score was 991. When controlling for differences of race and gender in cohort composition, this decline is closer to 5 points, although African American men exhibited a decline of 20 points from 916 among the 2002 FY cohort to 896 among the 2003 FY cohort. On average, students entering in 2003 were ranked in the top third (top 34%) of their graduating high school class with a high school core GPA of 2.79 (Std. Dev. = 0.49) and a mean collegiate predicted GPA of 2.63 (Std. Dev. =0.43). By comparison, the profile of the 2002 FY cohort was slightly higher; on average students entering in 2002 were ranked in the top 33% of their graduating high school class, with a high school core GPA of 2.87 (Std. Dev. = 0.48) and a mean collegiate predicted GPA of 2.70 (Std. Dev. = 0.42).

Table 7. Academic Profile of 2003 FY Cohort

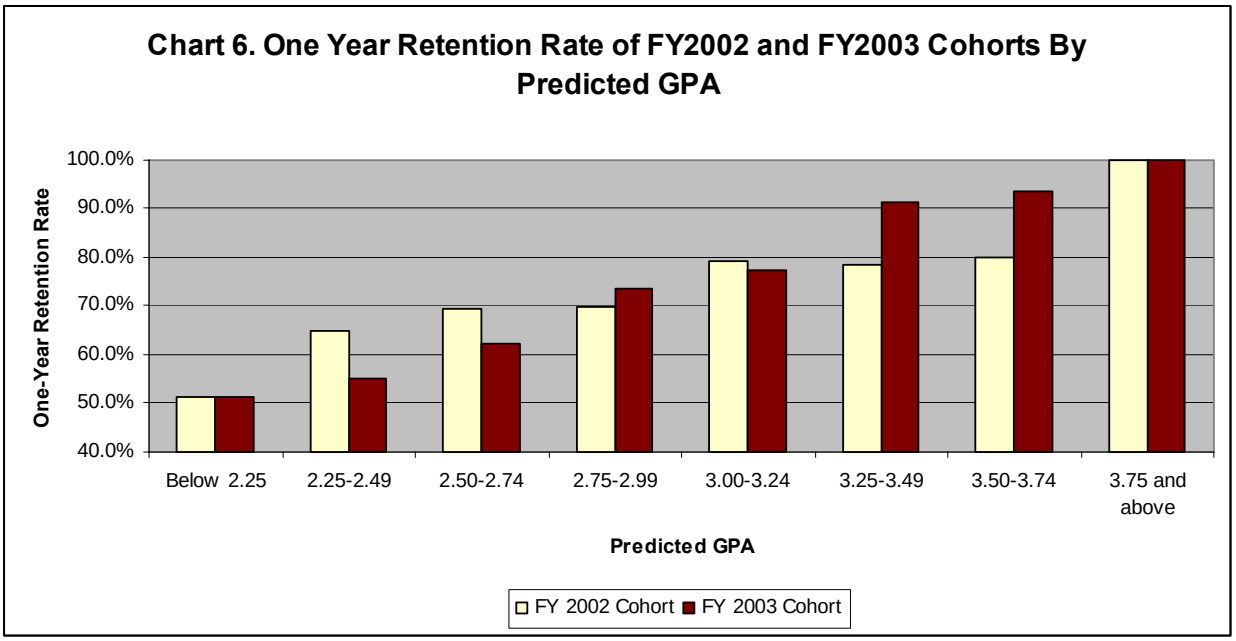
	N	Mean SAT Math Score	Mean SAT Verbal Score	Mean SAT Comb. Score	Mean ACT Comp. Score	Mean HS Rank (top %)	Mean HS Core GPA	Mean Pred. GPA
Entire 2003 FY Cohort	537	492	487	979	19.2	34%	2.79	2.63
Non-returners through Spring 2004	50	481	478	959	18.8	45%	2.59	2.45
Non-returners through Fall 2004	190	479	477	957	18.9	41%	2.61	2.47
All Persisters through Fall 2004	347	499	492	991	19.5	30%	2.90	2.72

Table 8. Academic Profile of 2003 FY Cohort Compared to 2002 FY Cohort

	N	Mean SAT Math Score	Mean SAT Verbal Score	Mean SAT Comb. Score	Mean ACT Comp. Score	Mean HS Rank (top %)	Mean HS Core GPA	Mean Pred. GPA
2002 FY Cohort	471	499	492	991	18.6	33%	2.87	2.70
2003 FY Cohort	537	492	487	979	19.2	34%	2.79	2.63

Similar to findings from analysis of the 2002 FY cohort (Hosch 2004), the overall academic profile of entering students in the 2003 FY cohort who did not persist into either their second or third semesters was lower than that of students who did return in the following fall term. Students in the 2003 FY cohort who persisted had a mean combined SAT score of 991 (499 Math, 492 Verbal) and a mean high school class rank in the top 30%, while those who left USCA had a mean combined SAT score of 957 (479 Math, 477 Verbal) and a mean high school class rank in the top 41%. The lower mean test scores and weaker high school performances of non-returning students unsurprisingly indicates that this group had lower predicted grade point averages, with a mean predicted GPA of 2.47, compared to the mean predicted GPA of 2.72 among students who returned to USCA for a third semester. While minor differences in academic inputs were observed between students in the 2002 FY cohort who left after their first semester and those who left after their second semester, non-returning students in the 2003 FY cohort exhibited similar test scores and high school performance regardless of their semester of departure.

These data indicate a strong linear relationship between the probability of a student's return to USCA from Fall to Fall and the student's high school performance and college entrance exam scores; USCA's predicted GPA formula represented the factor most closely linked to one year retention. The 117 students admitted in 2003 with a predicted GPA above 3.00, had a retention rate of nearly 85%, about 5% higher than the retention rate of the same group of high performers entering in 2002. Gains were especially pronounced in the 3.25-3.74 range, in which the 2003 FY cohort outperformed the 2002 FY cohort by more than ten percentage points. For the 175 students matriculating in 2003 with a predicted GPA of 2.50-2.99, the retention rate was just under 66.2%, which is only marginally above the 64.4% retention rate for the cohort as a whole. Below the threshold of 2.50 predicted GPA, retention rates for the 2003 FY cohort dropped quite significantly. For the 125 students with a predicted GPA in the 2.25-2.49 range, the retention rate was only 55.2%, and for those with a predicted GPA below 2.25, the retention rate was just 51.3%.



These findings indicate that more students with comparatively weaker academic records in the 2003 FY cohort departed USCA than did those in the 2002 FY cohort, and a greater proportion of comparatively stronger students remained at the university. This positive development is tempered somewhat by the fact that students with a predicted GPA below 2.5 accounted for most of the enrollment growth in the entering freshman class. Indeed, in the 2002 FY cohort, there were 173 students (36.7% of the cohort) with a predicted GPA below 2.50, and in the 2003 FY cohort, there were 238 students (44.3% of the cohort) with a predicted GPA below 2.50. Enrollment growth in the lower end of the spectrum of academic preparation is not a strategic goal, and a combination of targeted recruiting of certain segments of medium- to high-performing high school students and improved data collection and monitoring systems for admitted students may have positive impacts on retention as well as student learning.

Table 9. One Year Retention Rate by Predicted GPA* (2003 FY Cohort)

	Fall 2003		Spring 2004			Fall 2004		
Predicted GPA	N	Mean Sem GPA	N	Mean Sem GPA	Pct Retention	N	Mean Sem GPA	Pct Retention
1.99-2.25	113	1.72	100	1.63	88.5%	58	2.05	51.3%
2.26-2.50	125	2.10	109	2.18	87.2%	69	2.39	55.2%
2.51-2.75	111	2.32	98	2.24	88.3%	69	2.55	62.2%
2.76-3.00	64	2.76	58	2.58	90.6%	47	3.03	73.4%
3.01-3.25	62	3.15	60	3.00	96.8%	48	3.13	77.4%
3.26-3.50	35	3.33	35	3.23	100.0%	32	3.28	91.4%
3.51-3.75	16	3.62	16	3.74	100.0%	15	3.45	93.8%
3.76-4.00	4	4.00	4	3.97	100.0%	4	4.00	100.0%
(blank)	7	2.44	7	2.76	100.0%	5	3.22	71.4%
Cohort Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%

* Includes the higher of Predicted GPA based on SAT or ACT scores.

As in previous years, the predicted GPA formula tended to overestimate actual performance of students in their first semester, and part of the magnitude of this gap is related to demographic factors (see Table 10). While the mean predicted GPA for the 2003 FY cohort as a whole was 2.63, the mean actual semester GPA in Fall 2003 of these students was 2.41. Among white women, this performance gap is negligible at only -0.05 grade points between predicted and actual GPA, but among white men, this gap widens to -0.19 grade points. While a gender gap is not observable among black or African American students, the performance gap between predicted and actual GPAs is significantly wider at -0.51 grade points. Further, the mean first semester GPA of African American students is just below a "C" average at 1.96.[4]

Table 10. Difference Between Predicted GPA and Fall 2003 GPA (2003 FY Cohort)

	N	Mean Predicted GPA	Mean Fall 2003 Semester GPA	Gap Betw Mean Predicted & Mean Actual GPA	One Year Retention Rate
Entire Cohort	537	2.62	2.41	-0.21	64.6%
Black or African American	123	2.47	1.96	-0.51	68.3%
White	383	2.68	2.58	-0.10	63.4%
All Men	177	2.56	2.29	-0.27	60.5%
Black or African American	32	2.39	1.88	-0.51	68.8%
White	130	2.59	2.40	-0.19	59.2%
All Women	360	2.66	2.47	-0.19	66.7%
Black or African American	91	2.50	1.98	-0.52	68.1%
White	253	2.73	2.68	-0.05	65.6%

Ongoing study of the performance of the current formula used to predict GPA, which is a linear combination of high school GPA in core classes and SAT scores, has indicated that the formula accounts for about 28% of variation in first semester grade point average.[5] The fact that very few students are admitted to USCA with a predicted GPA below 2.0 yet about one third of the students in the freshman class earned a first semester GPA below 2.0 points toward some

[4] For additional detail about the academic success of African American students and the performance gap with white students, see Hosch (2005).

[5] This formula is: Pr GPA = -0.40 + .751 (HS Core GPA) + 0.000975 (Math SAT Score + Verbal SAT Score)

limitation of trying to predict collegiate success with just high school grades and the scores on one standardized test. Nevertheless, predicted GPA still predicts success at the university better than any single academic factor alone. Continued monitoring of the utility of the predicted GPA formula will be especially essential as students who take the SAT in March 2005 or later will be taking a revised test that includes modifications to the verbal section (called "critical reading" as of March 2005), a new writing section scored 200-800 as well as a subscore on a writing sample 2-12.

SAT Scores and Impact on Retention

Combined SAT scores continue to serve as a good predictor of academic success for entering freshmen as well as retention to the second year. The 60 students in the 2003 FY cohort who achieved a combined SAT score of less than 800 (or less than 17 on the ACT) had a mean fall GPA of just 1.75 and those who returned for spring earned a mean second semester GPA of 1.98. One-year retention for this group was 58.3%, although the academic performance of those who returned in Fall 2004 shows some improvement, with a third semester GPA of 2.44. By contrast, students whose combined SAT scores were in the 1100-1190 range had a mean first semester GPA of 2.96 and a one-year retention rate of 74.4%. For those scoring 1200 or higher, the mean first semester GPA was 3.47, and the one-year retention rate was 81.6%. These patterns of academic performance and retention reinforce findings from study of the 2002 FY cohort that students with higher SAT scores are 1) better prepared to handle the intellectual challenges they encounter at USCA, and 2) persist into their second year at USCA at higher rates than those with lower scores.

Table 11. One-Year Retention and Academic Performance by Combined SAT Score* (2003 FY Cohort)

	Fall 2003		Spring 2004			Fall 2004		
SAT Score (Composite)	N	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
Below 800	60	1.75	56	1.98	93.3%	35	2.44	58.3%
800-890	93	1.96	79	1.95	84.9%	55	2.34	59.1%
900-990	150	2.30	135	2.13	90.0%	90	2.42	60.0%
1000-1090	108	2.49	96	2.46	88.9%	71	2.95	65.7%
1100-1190	86	2.95	83	2.86	96.5%	64	3.01	74.4%
1200-1290	30	3.40	29	3.44	96.7%	24	3.26	80.0%
1300 & above	8	3.73	7	3.65	87.5%	7	3.72	87.5%
(blank)	2	3.32	2	4.00	100.0%	1	4.00	50.0%
Cohort Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%

* Includes converted ACT Scores.

As was also observed in analysis of the 2002 FY cohort, readily discernible retention patterns do not emerge from scores on the verbal and math sections of the SAT when examined separately. Some notable retention weakness is apparent among the 81 students who scored between 350 and 390 on either section of the SAT; these students earned a mean first semester GPA of 1.66, and had a one-year retention rate of about 55%. Interestingly, incoming freshmen who earned below 350 on either section still exhibited weak academic performances in their first year, yet were retained to Fall 2004 at a rate of 83.3%, and their mean third semester GPA was between

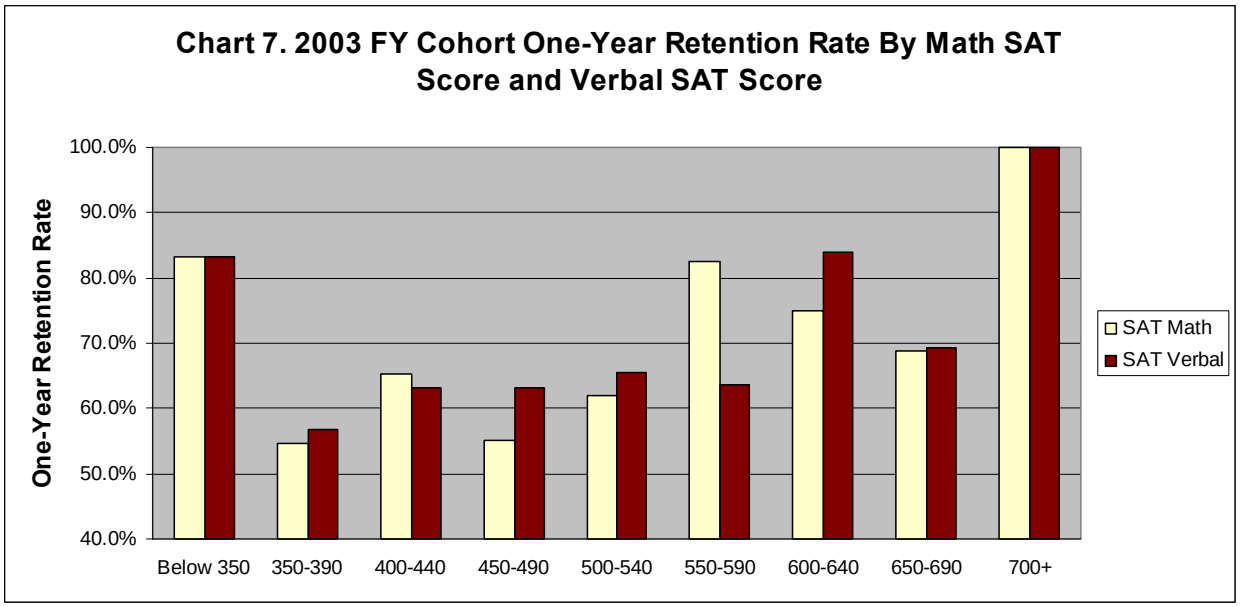
2.25 and 2.31. Similarly high retention rates among the lowest performing students on *one section* of the SAT were also observed among the 2002 FY cohort, suggesting that this pattern may not simply be the result of random variation in the population. One explanation for this finding is that students who are weak in either math or verbal skills can manage their curricular experiences in their first year to minimize the impact of their weaker area. Students who have low scores in both areas, however, as reflected by a low composite score, are less likely to be able to accomplish this sort of balancing act.

Table 12. Retention Rates By Math SAT Score (2003 FY Cohort)

	Fall 2003		Spring 2004			Fall 2004		
Math SAT	N	Mean Sem GPA	N	Mean Sem GPA	Pct Retention	N	Mean Sem GPA	Pct Retention
Below 350	12	1.73	12	1.89	100.0%	10	2.31	83.3%
350-390	44	1.67	38	1.90	86.4%	24	2.28	54.5%
400-440	95	2.16	87	2.08	91.6%	62	2.45	65.3%
450-490	100	2.19	86	2.01	86.0%	55	2.48	55.0%
500-540	108	2.46	100	2.32	92.6%	67	2.81	62.0%
550-590	80	2.89	78	2.83	97.5%	66	3.06	82.5%
600-640	36	3.14	32	3.44	88.9%	27	3.19	75.0%
650-690	16	3.25	15	3.12	93.8%	11	3.08	68.8%
Over 700	2	3.47	2	3.45	100.0%	2	3.27	100.0%
(blank)	44	2.43	37	2.48	84.1%	23	2.65	52.3%
Cohort Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%

Table 13. Retention Rates By Verbal SAT Score (2003 FY Cohort)

	Fall 2003		Spring 2004			Fall 2004		
Verbal SAT	N	Mean Sem GPA	N	Mean Sem GPA	Pct Retention	N	Mean Sem GPA	Pct Retention
Below 350	18	1.77	18	1.78	100.0%	15	2.25	83.3%
350-390	37	1.65	34	1.80	91.9%	21	2.22	56.8%
400-440	98	2.10	86	2.12	87.8%	62	2.41	63.3%
450-490	130	2.28	117	2.22	90.0%	82	2.68	63.1%
500-540	96	2.62	88	2.45	91.7%	63	2.82	65.6%
550-590	66	2.79	61	2.78	92.4%	42	2.98	63.6%
600-640	31	3.22	30	3.14	96.8%	26	3.21	83.9%
650-690	13	3.20	12	3.10	92.3%	9	3.44	69.2%
Over 700	4	3.71	4	3.62	100.0%	4	3.68	100.0%
(blank)	44	2.43	37	2.48	84.1%	23	2.65	52.3%
Cohort Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%



High School Performance and Impact on Retention

Both high school class rank and high school core GPA represent significant factors for students' academic performance in college and the rate at which they are retained for a second year. Unsurprisingly, there is a pronounced correlation between high school class rank and high school core GPA.[6] For the 103 students in the 2003 FY cohort graduating in the bottom half of their high school class, the one year retention rate was 43.7% and the mean first semester GPA was just 1.76. Collegiate academic performance and one year retention rates of students with a core high school GPA of 2.25 or less were similarly poor.

It is perhaps worth noting that almost all students' complete high school GPAs are on average about half a grade point higher than the high school core GPA in selected courses that USCA uses when considering students for admission. Given that entering students are often not privy to their high school calculated core GPA in the same way they are familiar with their overall high school GPA, many students may overestimate their academic abilities to perform well in college-level courses.

[6] Values of Pearson's *r*, a statistic which represents the correlation between these two variables, range between -0.756 and -0.815 for freshman cohorts entering between 2000 th

Correlation Between HS Class Rank and HS Core GPA Freshman Cohort 2000-2004

Year	Pearson's *r*
2000	-0.790
2001	-0.815
2002	-0.776
2003	-0.756
2004	-0.767

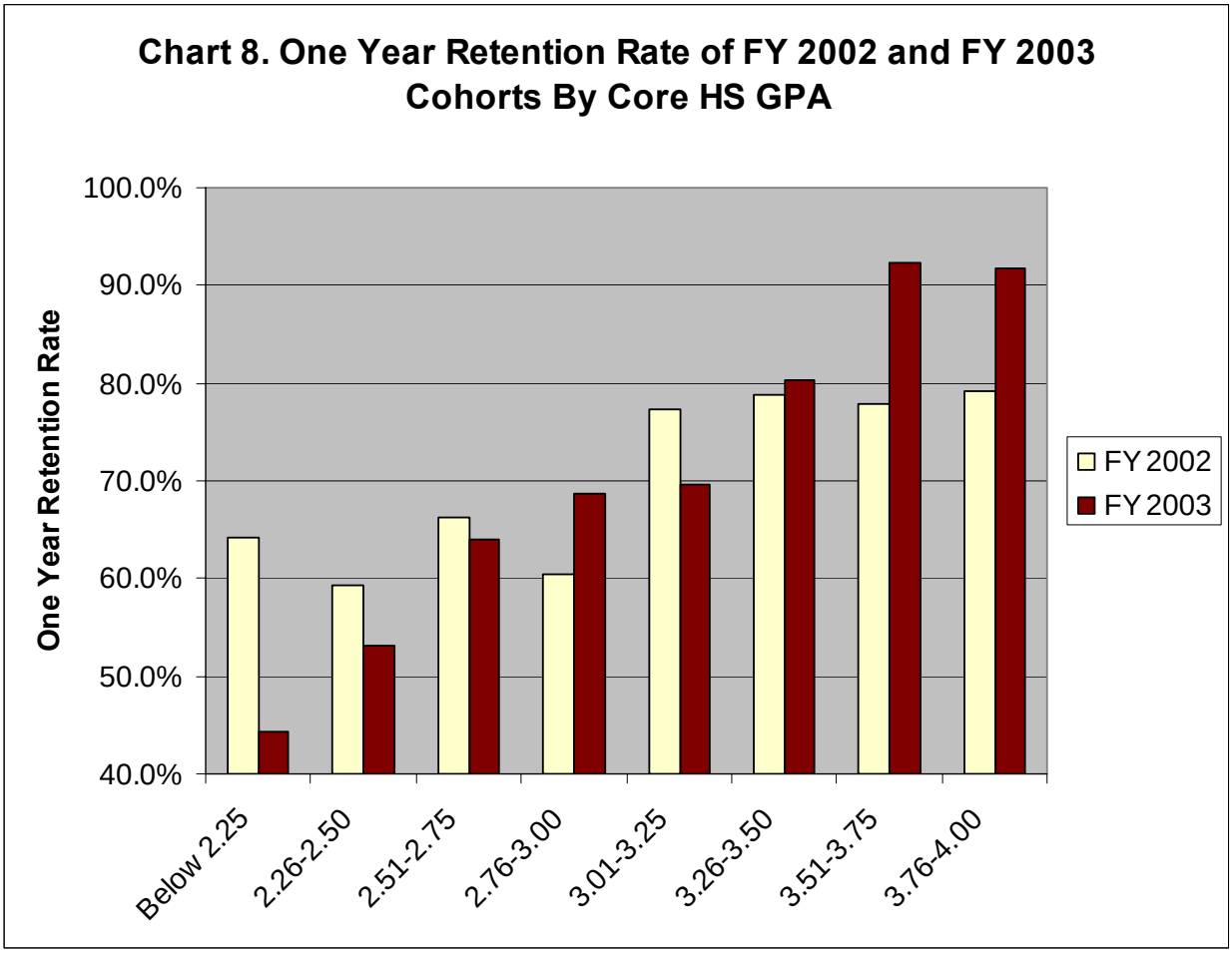
In effect, this level of correlation indicates that class rank (which includes all high school grades) accounts for about 60% of variation in high school core grade point average (which includes grades from 22 core courses). This high degree of correlation between these two variables indicates a significant level of multicolinearity, suggesting that it would not be appropriate to include both variables in a linear regression model, such as to predict collegiate GPA.

Table 14. Retention Rates By High School Class Rank (2003 FY Cohort)								
	Fall 2003		Spring 2004			Fall 2004		
HS Class Rank	N	Mean Sem GPA	N	Mean Sem GPA	Pct Retention	N	Mean Sem GPA	Pct Retention
top 5%	26	3.44	26	3.43	100.0%	24	3.40	92.3%
top 6-10%	37	3.19	35	3.05	94.6%	32	3.14	86.5%
top 11-20%	85	2.88	78	2.84	91.8%	61	3.17	71.8%
top 21-30%	92	2.44	88	2.32	95.7%	61	2.73	66.3%
top 31-40%	94	2.36	88	2.20	93.6%	60	2.57	63.8%
top 41-50%	74	2.14	64	1.99	86.5%	47	2.10	63.5%
top 51-60%	37	1.87	31	1.95	83.8%	17	2.29	45.9%
top 61-70%	41	1.86	35	1.84	85.4%	18	1.97	43.9%
top 71-80%	14	1.37	10	1.53	71.4%	3	2.28	21.4%
top 81-99%	11	1.53	9	1.74	81.8%	7	2.00	63.6%
(blank)	26	2.18	23	2.54	88.5%	17	2.97	65.4%
Cohort Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%

Increased matriculation at USCA of students with weaker high school academic records may account for some portion of the decline in the one year retention rate from the 2002 FY cohort to the 2003 FY cohort. While the number of students in the entering USCA freshman cohort who graduated in the top fifty percent of their high school class increased just slightly from 140 in 2002 to 148 in 2003, the number graduating in the bottom half of their high school class rose from 84 in 2002 (17.8% of cohort) to 103 in 2003 (19.2% of cohort). This increase of students with weak academic records is even more apparent in terms of high school core GPA. While the number of students with a core high school GPA over 3.0 essentially remained constant from 169 in 2002 to 165 in 2003, the number of students with a high school core GPA below 2.5 rose dramatically from 125 students in 2002 to 183 students in 2003, an increase of 46%.

Certainly, academic ability plays a large role in this disparity, but the differences between the high- and low-ranked students may also result from dispositions and habits internalized by students who were in the top fifth of their high school class that those toward the lower end of their class have not acquired. The self-image associated with being among the top students in one's high school class or being an "A" student may also play some role in later academic success in college.

Table 15. Retention Rates By High School Core GPA (2003 FY Cohort)								
	Fall 2003		Spring 2004			Fall 2004		
HS Core GPA	N	Mean Sem GPA	N	Mean Sem GPA	Pct Retention	N	Mean Sem GPA	Pct Retention
1.88-2.25	72	1.79	62	1.70	86.1%	32	2.06	44.4%
2.26-2.50	111	2.06	99	1.95	89.2%	59	2.34	53.2%
2.51-2.75	114	2.12	101	2.17	88.6%	73	2.37	64.0%
2.76-3.00	70	2.57	65	2.46	92.9%	48	2.84	68.6%
3.01-3.25	69	2.91	61	2.88	88.4%	48	3.05	69.6%
3.26-3.50	46	2.94	44	2.81	95.7%	37	3.06	80.4%
3.51-3.75	26	3.17	26	3.12	100.0%	24	3.16	92.3%
3.76-4.00	24	3.55	24	3.62	100.0%	22	3.63	91.7%
(blank)	5	2.08	5	2.51	100.0%	4	3.03	80.0%
Cohort Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%



While retention rates among groups of students graduating from four out of five local high schools (Aiken High School, Midland Valley High School, Silver Bluff High School, and South Aiken High School) in the 2002 FY cohort were generally high -- between 75% and 85% -- this pattern did not reemerge in the 2003 FY cohort, for which the retention rates of students from Aiken High School, South Aiken High School, and Silver Bluff High School were below the overall retention rate for the cohort, at 58.5%, 59.3%, and 62.5% respectively. Entering students in 2003 who had just graduated from Midland Valley High School still exhibited a remarkably high retention rate of 78.1%, although this was down from 85.7% from the year before.

The retention rate among students from North Augusta High School actually improved ten percentage points from 54.1% in the 2002 FY cohort to 64.7% in the 2003 FY cohort, suggesting that the 2002 findings may represent an anomalous group of students and also may challenge the hypothesis that these students are more likely to attend Augusta State University, where the tuition is lower than at USCA.[7] Further study of these students is required, however, to draw more definitive conclusions, and neither the method of analysis in this report nor in *Academic Tracking Report #3* is adequate to make firm inferences about price point in the higher education market in the Central Savannah River Area.

Table 16. Retention and Academic Performance By High School (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
High School Name	N	Mean PrGPA	Mean Sem GPA	N	Mean Sem GPA	Retn Pct	N	Mean Sem GPA	Retn Pct
SOUTH AIKEN HS	59	2.56	2.58	52	2.50	88.1%	35	3.00	59.3%
NORTH AUGUSTA HS	51	2.60	2.51	46	2.24	90.2%	33	2.44	64.7%
AIKEN HS	41	2.50	2.45	40	2.22	97.6%	24	2.50	58.5%
MIDLAND VALLEY HS	32	2.67	2.68	28	2.89	87.5%	25	3.17	78.1%
SILVER BLUFF HS	32	2.60	2.43	28	2.44	87.5%	20	2.59	62.5%
STROM THURMOND HS	23	2.73	2.65	20	2.77	87.0%	16	2.80	69.6%
ORANGEBURG WILKINS	14	2.50	1.93	14	2.02	100.0%	10	2.71	71.4%
PELION HS	13	2.78	2.75	13	2.58	100.0%	8	3.12	61.5%
BARNWELL HS	12	2.85	2.73	12	2.18	100.0%	10	2.85	83.3%
BATESBURG-LEESVILLE	11	2.61	2.94	8	2.77	72.7%	7	3.04	63.6%
GILBERT HS	10	2.63	2.52	8	3.14	80.0%	7	2.99	70.0%
HILTON HEAD HS	10	2.64	2.30	9	2.46	90.0%	6	2.66	60.0%
COLLETON COUNTY HS	8	2.38	2.08	8	1.73	100.0%	5	2.69	62.5%
RIDGE SPRING MONET	7	2.78	2.17	7	1.35	100.0%	3	2.56	42.9%
BEAUFORT HS	6	2.33	1.87	5	2.69	83.3%	4	3.03	66.7%
DUTCH FORK HS	6	2.45	2.56	6	2.53	100.0%	5	2.06	83.3%
EDISTO HS	6	2.48	2.34	5	1.94	83.3%	3	2.96	50.0%
ESTILL HS	6	2.36	1.53	6	1.26	100.0%	4	2.12	66.7%
WAGENER-SALLEY HS	6	2.87	2.25	6	2.06	100.0%	5	2.12	83.3%
WHITE KNOLL HS	6	2.71	1.85	5	2.31	83.3%	4	2.95	66.7%
BAMBERG-EHRHARDT	5	2.45	2.51	5	2.08	100.0%	3	1.62	60.0%
LOWER RICHLAND HS	5	2.45	1.43	3	1.84	60.0%	2	2.39	40.0%
SC HOME SCHOOL	5	3.31	3.49	5	3.62	100.0%	4	3.53	80.0%
SUMMERVILLE HS	5	2.47	2.86	3	2.38	60.0%	2	1.52	40.0%

[7] In Fall 2003, a total of 339 students from South Carolina (about 0.5% of total headcount) were enrolled at any level at Augusta State University; 312 of these were from Aiken or Edgefield counties (Stewart 2005, p. 35).

Relationship of Taking Tech Prep Courses in High School to Retention and Academic Success
A total of 54 students matriculated whose high school records had made substitutions for at least one college preparatory course to qualify for admission to USCA, such substitutions were technical college preparatory, or tech prep, courses. Substitution of tech prep courses for college prep courses constitutes a waiver of state mandated admission requirements, and among public four-year institutions in South Carolina, USCA typically records the highest rate of exceptions for tech prep courses each year. Among this group of students in the 2003 FY cohort, 32 students took just one tech prep course; 12 took two tech prep courses, and 10 students took between 3 and 7 tech prep courses. African American students were twice as likely as others to have used a tech prep course to qualify for admission; male students were 50% more likely than others to have used a tech prep course to qualify for admission.

Retention patterns and academic performance varied widely by the subject in which the tech prep course was taken as well as the point in the student's academic career when it was completed. Overall, findings indicate that students who use high school tech prep courses in English, math, or laboratory science to substitute for a college prep course either are retained at significantly lower rates or registered weaker academic performances for at least three semesters than did students who met all admission requirements. Students who used tech prep courses in social sciences or as electives to qualify for admission were more likely than others to be retained or to earn higher semester GPAs. While the number of students in each of these categories is small, these findings suggest that students without the full complement of college prep courses in English, math, and lab science may not have sufficient preparation to be likely to succeed at USCA.

Table 17. Retention and Academic Performance for Students Who Took At Least One Tech Prep HS Course

		Fall 2003				Spring 2004		Fall 2004		
Tech Prep Course	HS Year*	N	Mean Sem GPA	N in AEGL 101/ AMTH 108	Mean Grade AEGL 101/ AMTH 108	N	Mean Sem GPA	N	Mean Sem GPA	One Year Retention
English	1	3	1.36	3	1.67	3	1.00	1	2.54	33.3%
	2	5	1.70	5	1.60	4	1.52	2	2.35	40.0%
	3	11	1.95	11	2.32	10	1.57	7	1.87	63.6%
	4	12	2.11	11	2.09	10	1.74	7	1.65	58.3%
Math	1	3	2.25	2	1.00	3	2.11	0	--	0.0%
	2	10	2.01	7	1.71	10	1.96	7	2.55	70.0%
	3	0	--	--	--	--	--	--	--	--
	4	7	1.52	6	0.20	6	2.13	4	2.38	57.1%
Lab Science	1	9	1.52	--	--	9	1.17	4	2.66	44.4%
	2	12	2.00	--	--	11	1.91	7	2.27	58.3%
	3	6	2.00	--	--	5	1.71	2	2.86	33.3%
Social Science	1	3	2.44	--	--	3	2.86	3	2.95	100.0%
	2	7	1.55	--	--	7	1.60	6	2.29	85.7%
	3	1	2.25	--	--	1	1.80	1	2.56	100.0%
Elective	Any	5	3.12	--	--	4	3.79	4	3.70	80.0%

* Conventions of coding HS transcripts record the first year in which a course was taken as Year 1. Thus, except for math and English, for which there are four years, the numbers (1, 2, 3, 4) do not necessarily map onto freshman, sophomore, junior, and senior years.

Retention by Intended Major

Retention patterns by the intended major of students in the 2003 FY cohort varied widely by discipline, and significant changes by major were observed from students entering in the previous year. Of the majors with sufficient numbers of students to make reasonably valid claims, students in two majors exhibited high retention rates: Secondary Education (76.0%, + 5.6% from 2002) and Nursing (75.3%, + 9.6% from 2002). Students in two majors exhibited low retention rates: Psychology (50.0%, - 18.4% from 2002) and Business (52.6%, - 15.5% from 2002).

These changes among these four majors with high and low retention rates appear not to be related to the quality of academic inputs among entering first-year students. Indeed, the mean predicted GPA of the 76 Business majors entering in 2003 was more than a quarter of a grade point (0.28) higher than the 69 who entered in 2002, and the mean predicted GPA of the 20 Psychology majors entering in 2003 was almost a quarter of a grade point (0.21) higher than the 19 who entered in 2002. By contrast, the 93 Nursing majors entering in 2003 had a lower mean predicted GPA than the 51 entering in 2002 by almost one third (0.31) of a grade point. Given that these students primarily do not take courses in these majors (with perhaps the exception of APSY 101), these patterns of retention appear to belie findings about the positive correlation between retention rates and predicted GPA.

Table 18. One Year Retention Rate and Academic Performance by Intended Major, Sorted by Retention Rate, High to Low (2003 FY Cohort)

	Fall 2003		Spring 2004			Fall 2004		
Intended Major	N	Sem GPA	N	Sem GPA	Pct Retn	N	Sem GPA	Pct Retn
Math & Computer Science	7	2.90	7	2.40	100.0%	6	3.39	85.7%
English	6	2.97	5	3.35	83.3%	5	3.22	83.3%
Pre-Pharmacy	13	2.69	11	2.63	84.6%	10	2.49	76.9%
Education, Secondary*	25	2.55	25	2.42	100.0%	19	2.97	76.0%
Nursing (4-yr) **	93	2.33	85	2.54	91.4%	70	2.78	75.3%
Chemistry	4	3.61	4	3.69	100.0%	3	3.14	75.0%
History	4	2.52	4	2.59	100.0%	3	3.05	75.0%
Exercise Science	30	2.21	27	2.16	90.0%	21	2.42	70.0%
Fine Arts	22	2.84	21	2.58	95.5%	15	2.84	68.2%
Education, Elementary	26	2.59	21	2.49	80.8%	17	3.08	65.4%
Sociology	17	2.47	13	2.63	76.5%	11	2.62	64.7%
Biology	31	2.56	28	2.42	90.3%	20	2.91	64.5%
Engineering	25	2.72	24	2.34	96.0%	16	2.16	64.0%
Education, Early Childhood	22	1.96	21	2.22	95.5%	14	3.07	63.6%
Undecided	91	2.40	84	2.29	92.3%	53	2.49	58.2%
Communications	16	2.36	14	2.17	87.5%	9	2.86	56.3%
Political Science	9	2.12	9	2.36	100.0%	5	2.67	55.6%
Business	76	2.24	66	2.16	86.8%	40	2.52	52.6%
Psychology	20	2.11	18	2.18	90.0%	10	2.84	50.0%
Grand Total	537	2.41	487	2.38	90.7%	347	2.71	64.6%

* Includes one student majoring in Special Education

** Includes one student pursuing the RN completion track

Table 19. Retention By Major, Ordered Alphabetically (2002 FY Cohort Compared to 2003 FY Cohort)

	2002 FY Cohort					2003 FY Cohort				
	Fall 2002			Fall 2003		Fall 2003			Fall 2004	
Intended Major	N	Pct of Cohort	Pred. GPA	N	Pct Retn	N	Pct of Cohort	Pred. GPA	N	Pct Retn
Biology	46	9.8%	2.91	34	73.9%	31	5.8%	2.63	20	64.5%
Business	69	14.6%	2.63	47	68.1%	76	14.2%	2.79	40	52.6%
Chemistry	2	0.4%	3.24	0	0.0%	4	0.7%	2.51	3	75.0%
Communications	14	3.0%	2.61	9	64.3%	16	3.0%	3.01	9	56.3%
Education, Early Child.	19	4.0%	2.79	17	89.5%	22	4.1%	2.51	14	63.6%
Education, Elementary	36	7.6%	2.65	27	75.0%	26	4.8%	2.48	17	65.4%
Education, Secondary**	27	5.7%	2.67	19	70.4%	25	4.7%	2.78	19	76.0%
Engineering	27	5.7%	3.44	14	51.9%	25	4.7%	2.74	16	64.0%
English	4	0.8%	2.86	2	50.0%	6	1.1%	2.68	5	83.3%
Exercise Science	17	3.6%	2.35	11	64.7%	30	5.6%	3.04	21	70.0%
Fine Arts	12	2.5%	2.51	7	58.3%	22	4.1%	2.45	15	68.2%
History	4	0.8%	2.79	3	75.0%	4	0.7%	2.65	3	75.0%
Math & Computer Science	13	2.8%	2.72	9	69.2%	7	1.3%	2.64	6	85.7%
Nursing (4-yr)	51	10.8%	2.99	33	64.7%	93	17.3%	2.68	70	75.3%
Political Science	8	1.7%	2.55	4	50.0%	9	1.7%	2.66	5	55.6%
Pre-Pharmacy	4	0.8%	2.58	2	50.0%	13	2.4%	2.37	10	76.9%
Psychology	19	4.0%	2.78	13	68.4%	20	3.7%	2.86	10	50.0%
Sociology	13	2.8%	2.64	7	53.8%	17	3.2%	2.59	11	64.7%
Undecided	86	18.3%	2.48	63	73.3%	91	16.9%	2.69	53	58.2%
Grand Total	471	100.0%	2.72	321	68.2%	537	100.0%	2.58	347	64.6%

A significant decline was also observed in the retention rate of students who had not declared a major when they entered USCA. Among the 2002 FY cohort, students undecided about their majors had a mean predicted GPA of 2.48 (about half a standard deviation below the cohort mean) and were retained at a rate of 73.3%. By contrast, among students in the 2003 FY cohort, those who were undecided about their major upon entry to college had a mean predicted GPA of 2.69 (a fifth of a standard deviation above the cohort mean) and were retained at a rate of 58.2%.

The wide dispersal of students among majors should prompt caution when interpreting these findings, especially in light of the large changes in some majors from the 2002 FY cohort. Further research is necessary before a meaningful pattern may emerge.

Psychometric Characteristics that Impact Retention

Participation in the Cooperative Institutional Research Program (CIRP) Freshman Surveys represents a significant element of efforts to assess effectiveness of programs designed to enhance the first year experience at USCA. While summary statistics are disseminated each time the survey is completed, this study represents the first examination of the impact that various psychometric characteristics as well as behavior patterns, time usage, and other factors at the time of matriculation have on subsequent collegiate academic performance. Analysis of retention and academic performance data provided by entering students on the freshman CIRP survey revealed five broad factors that influence retention rates at statistically significant levels:

- Perceived academic ability and preparation, including the completion of remedial coursework in high school
- Time usage and behaviors in high school
- Commitment to the institution
- Motivations for going to college
- Other attitudes and values

Table 20. Measures of Association: Values of Eta Squared†, Ranked by Effect on Retention Within Category

	Pr GPA		F 2003 Sem GPA		F 2004 Sem GPA		One Year Retention	
Academic Factors								
Mathematical Ability	0.108	***	0.049	***	0.020		0.056	***
Academic Ability	0.206	***	0.077	***	0.078	***	0.036	**
Make at Least a B Average	0.080	***	0.043	***	0.045	**	0.028	***
Had Remedial Work in High School:								
Math	0.008		0.002		0.002		0.012	*
Science	0.008	*	0.001		0.002		0.011	*
Time Use/Behaviors in Past Year								
Partying (Avg. Hours Per Week)	0.055	***	0.023		0.102	***	0.035	*
Drank Wine or Liquor in Past Year	0.035	***	0.018	**	0.027	**	0.023	***
Studying/Homework (Avg. Hours Per Week)	0.035	*	0.042	**	0.022		0.021	
Studied with Other Students	0.002		0.004		0.001		0.014	*
Was Bored in Class	0.001		0.003		0.000		0.014	*
Commitment to Institution								
Transfer to Another College	0.017	*	0.007		0.031	*	0.027	**
First Visited This College	0.017	*	0.020	*	0.008		0.018	*
Good Academic Reputation	0.009		0.003		0.011		0.017	*
Motivations for Going to College								
To Learn More About Things	0.006		0.015	*	0.007		0.014	*
To Be Able to Make More Money	0.014	*	0.015	*	0.007		0.013	*
To Get a Better Job	0.027	**	0.031	***	0.025	*	0.007	
To Get Away from Home	0.013	*	0.019	**	0.010		0.000	
Other Attitudes and Values								
Increase Military Spending	0.001		0.016		0.003		0.033	**
Strengthen Religious Beliefs	0.011		0.018	*	0.022		0.023	*

† Eta squared is an ANOVA statistic similar to R squared. It shows proportion of variance accounted for by the variable. For instance, a value of 0.056 for eta squared indicates that the factor can account for 5.6% of variance.
* p<0.05; ** p<0.01; *** p<0.001

It is noteworthy that while the factors listed above were statistically significant, they did not account for large proportions of variation in the retention rate (typically only about 1-5%). Efforts to construct logistic regression models using these data yielded models that could predict which students were retained with 85-95% accuracy, but these models were inadequate for predicting non-retained students (accuracy levels of only 20-30%), and resulting accuracy of the models is not significantly better than the overall retention rate. Further research may improve the usefulness of these data. From a practical standpoint, however, the discussion and figures below illustrate more visibly how these psychometric and behavioral indicators relate to academic performance in college and the one year retention rate.

Perception of Academic Ability and Preparation

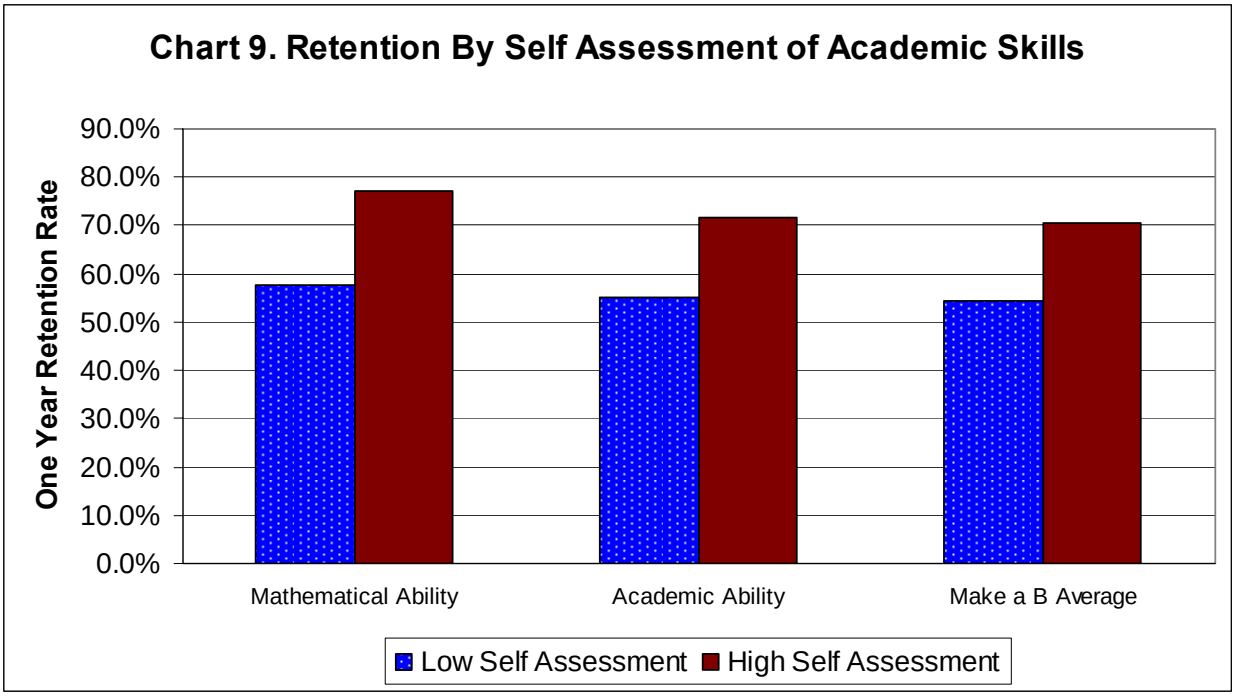
Several survey items addressed students' academic ability and preparation through self-reported measures, and while these factors are best measured by some of the actual academic inputs discussed in earlier sections, these self-perceptions offer some insight into how such internalizations affect collegiate performance. Self ratings of overall academic ability and mathematical ability along with students' estimation of the chances they would make at least a B average in college yielded statistically significant results.

Table 21. Retention and Academic Performance by Self-Assessment of Academic Ability (2003 FY Cohort)

Survey Item	N	Mean Pr GPA	Mean F 2003 Sem GPA	Mean F 2004 Sem GPA	Pct Retained to F 2004
Mathematical Ability					
Lowest 10%	23	2.57	2.36	2.77	60.9%
Below average	88	2.41	2.04	2.44	44.3%
Average	213	2.58	2.34	2.71	63.4%
Above average	115	2.80	2.65	2.72	76.7%
Highest 10%	43	2.80	2.74	2.96	79.1%
Academic Ability					
Lowest 10%	1	2.44	2.15	--	0.0%
Below average	7	2.58	2.66	2.67	57.1%
Average	199	2.41	2.08	2.39	55.0%
Above average	223	2.73	2.57	2.82	71.7%
Highest 10%	52	2.98	2.84	3.11	75.0%
Make at Least a B Average					
Very Little Chance	17	2.34	1.70	1.81	41.2%
Some Chance	173	2.50	2.23	2.53	56.9%
Very Good Chance	283	2.72	2.56	2.82	70.6%

For the 207 respondents who indicated their overall academic ability was average, below average, or in the lowest 10%, the retention rate was 55.1%, while the remaining 275 respondents, who indicated their academic ability was above average or in the highest 10%, were retained at a rate of 71.5%. Differences in retention rates among those with high and low self assessments of their mathematical ability were slightly more pronounced, with 77.2% of those indicating they were above average or in the top 10% in math persisting to a second year, while the remaining students who thought their math skills were average or worse were retained at a rate of 57.7%. For the 283 respondents (59.8%) who thought there was a good chance they would make at least a B average in college, the retention rate was 70.6%, while the remaining

40.2% of respondents who indicated there was just some chance or very little chance they would make a B average were retained at a rate of just 54.2%. Mean predicted GPAs roughly paralleled the self-assessment of academic abilities, indicating some congruence between self-reported and direct measures of academic skills.



Exactly 100 students reported that they took remedial classes of some sort in high school. Students who indicated they took remedial courses in mathematics and science in high school were retained at rates lower than those who did not indicate they had taken remedial classes in those subjects. A total of 58 entering students reported they took remedial math courses in high school, and students in this group were retained at a rate of only 50.0%. A total of 22 students reported they took remedial science in high school, and just 40.9% of these students returned the following year. Students who completed remedial work in English and foreign languages were also retained at rates 9-13% lower than those who did not, although because relatively low numbers of students reported remedial coursework in these fields, the analysis did not yield results that were statistically significant. Surprisingly, of the 100 students who indicated they took a remedial course of any sort, only 12 (or 12.0%) had tech prep courses listed in the database. Of the remaining 390 students, 44 (or 11.3%) had tech prep courses listed in the database. This even distribution is somewhat puzzling and may suggest any or all of the following: a) students do not perceive tech prep courses as remedial (indeed remedial courses may occupy a third category in some high schools); b) students who took the full battery of college prep courses also took some remedial courses; c) some verified errors in the coding in the Institutional Planning and Analysis Office at USC Columbia has confuted the data.

Table 22. Retention and Academic Performance by Remedial Coursework Ability (2003 FY Cohort)					
Survey Item	**N**	**Mean Pr GPA**	**Mean F 2003 Sem GPA**	**Mean F 2004 Sem GPA**	**Pct Retained to F 2004**
Had Remedial Coursework					
Math	58	2.52	2.51	2.56	50.0%
Science	22	2.44	2.22	2.62	40.9%

Time Usage and Behaviors in High School

How students reported they spent their time in high school was linked to one year retention rates in college at statistically significant levels for partying, drinking wine or liquor, studying with other students, and being bored in class. Time spent studying or doing homework in high school was significantly related to first semester academic performance, but the relationship of this factor to one year retention rates was outside the range of statistical significance.

Table 23. Retention and Academic Performance by Time Usage and Behaviors In high School (2003 FY Cohort)					
Survey Item	**N**	**Mean Pr GPA**	**Mean F 2003 Sem GPA**	**Mean F 2004 Sem GPA**	**Pct Retained to F 2004**
Partying (Avg. Hours Per Week)					
None	146	2.72	2.43	2.89	69.2%
< 1	60	2.71	2.64	2.84	70.0%
1-2	62	2.63	2.52	2.62	67.7%
3-5	96	2.55	2.25	2.68	61.5%
6-10	50	2.51	2.45	2.70	56.0%
11-15	29	2.42	2.04	1.79	48.3%
16-20	15	2.64	2.25	3.58	33.3%
Over 20	21	2.48	2.26	2.22	81.0%
Drank Wine or Liquor in Past Year					
Not at all	212	2.70	2.56	2.80	71.7%
Occasionally	212	2.60	2.33	2.71	61.8%
Frequently	55	2.44	2.18	2.26	49.1%
Studying/Homework (Avg. Hours Per Week)					
None	18	2.57	2.19	2.43	77.8%
< 1	89	2.56	2.17	2.76	51.7%
1-2	123	2.60	2.28	2.64	65.0%
3-5	145	2.60	2.45	2.65	67.6%
6-10	72	2.76	2.68	2.87	65.3%
11-15	19	2.57	2.47	2.90	68.4%
16-20	11	2.93	3.14	3.17	81.8%
Over 20	4	2.57	2.92	2.57	75.0%
Studied with Other Students					
Not at all	93	2.66	2.29	2.67	55.9%
Occasionally	308	2.61	2.41	2.72	64.3%
Frequently	84	2.62	2.50	2.67	75.0%
Was Bored in Class					
Not at all	19	2.67	2.67	2.76	73.7%
Occasionally	270	2.63	2.40	2.70	68.9%
Frequently	196	2.61	2.38	2.70	57.7%

Students who reported spending substantial time partying or drinking wine or liquor in high school were retained at USCA at lower rates than those who spent less time on these activities. For the 185 students who spent two hours or less partying each week in high school, the one year collegiate retention rate was 69.0%, while the retention rate for the 211 students who reported spending three hours or more per week partying, the retention rate was 58.2%. Similarly, students who reported not drinking wine or liquor at all in high school were retained in college at rate of 71.7% with a mean first semester GPA of 2.56. Students who drank wine or liquor occasionally in high school were retained at a rate that was 10 percentage points lower at 61.8%, with a mean first semester GPA of 2.33. Those who reported that they drank wine or liquor frequently in high school were retained at a rate of just 49.1% with a mean first semester GPA of 2.18. A similar pattern was observed with the frequency of drinking beer during high school, although the relationship to retention was not statistically significant. If students in their first semester of college drank wine or liquor at the same or greater frequency than in high school, then it may be reasonable to infer a relationship between drinking habits in college and academic performance as well as one year retention.

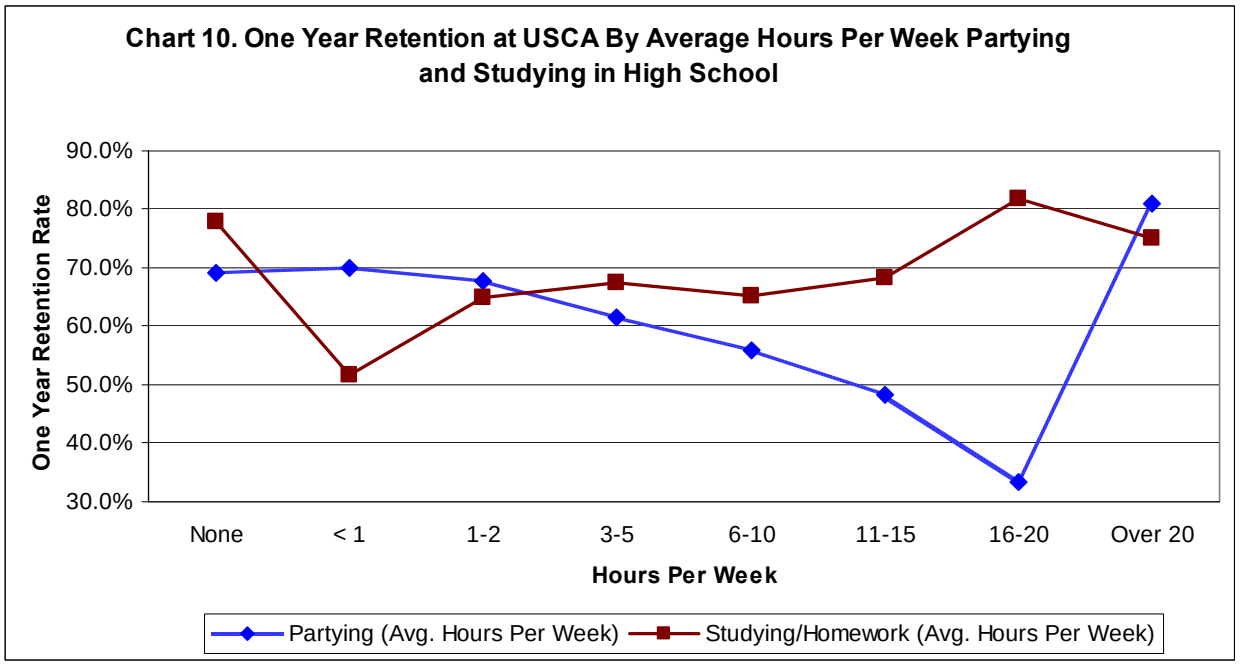
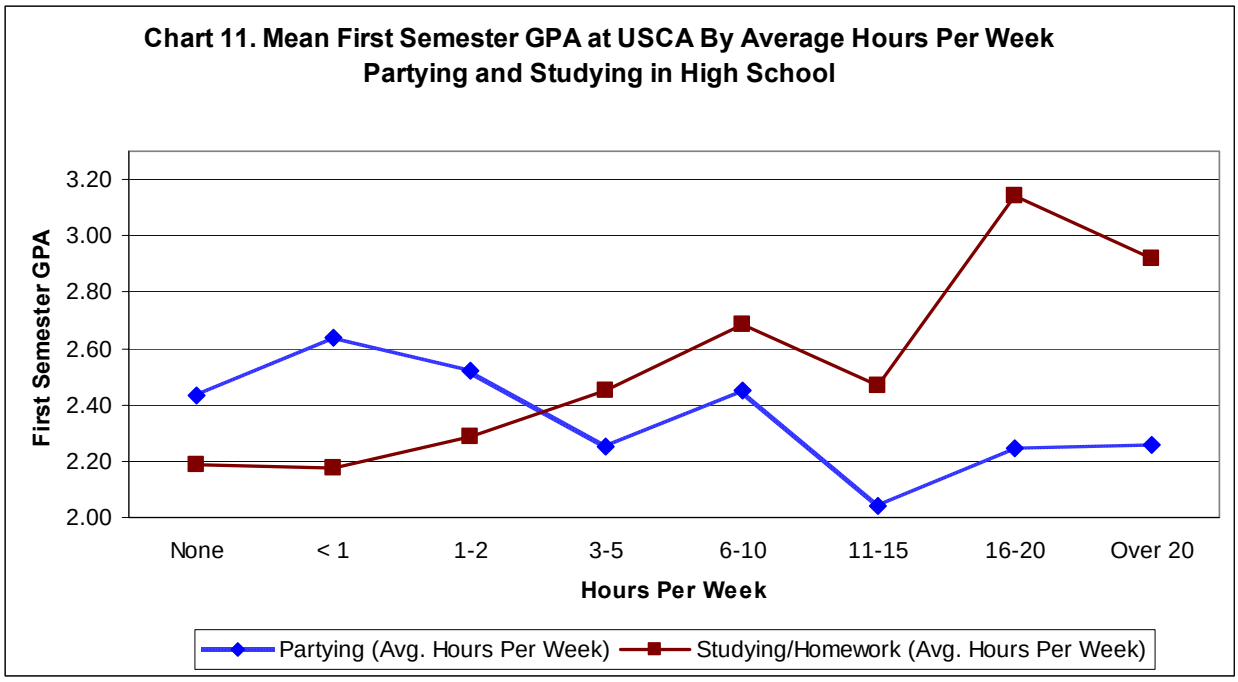
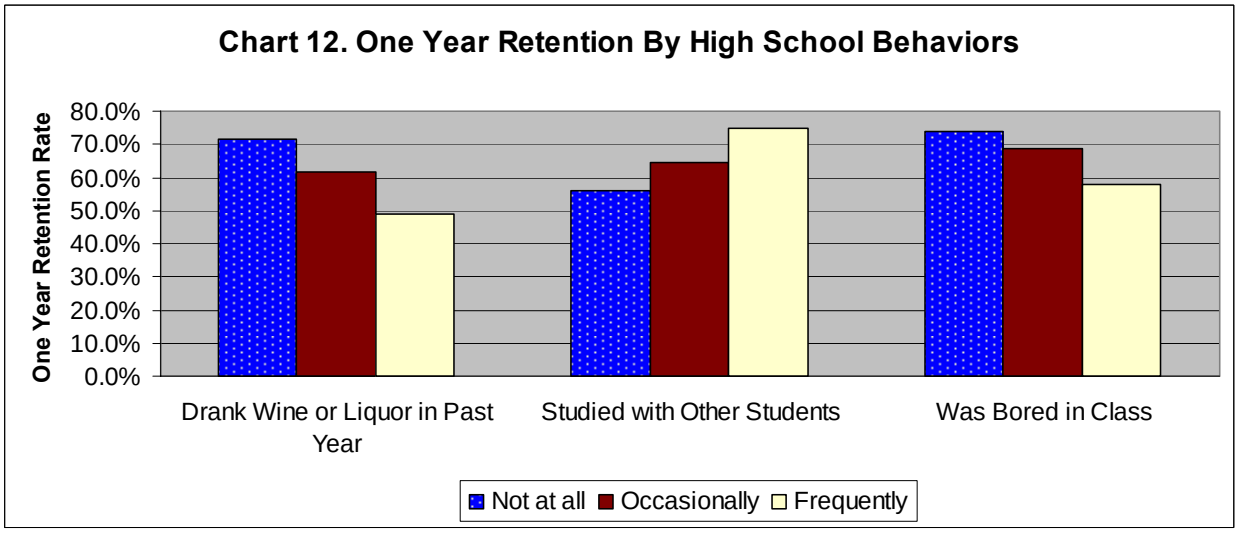


Chart 10 illustrates how retention rates by hours per week spent partying in high school is almost a mirror image of the retention rates by hours spent studying in high school. The high retention rates for students who in high school spent zero hours per week studying and over 20 hours per week partying contradict the trend lines and indeed the retention rates of these groups appear counterintuitive. These 32 students (six were in each group) very likely have either developed coping strategies that allow them to succeed academically while devoting little time or effort to their studies or changed their behaviors significantly as college students.



Studying with other students in high school was linked to above average one year retention rates in college, while being bored in class in high school was linked to below average one year retention rates. Respondents who reported studying with other students frequently in high school were retained at a rate of 75.0%; those who studied with other students occasionally were retained at a rate of 64.3%; and those who did not study with other students at all were retained at a rate of 55.9%. For students who reported not being bored in class at all in high school (there were only 19 such respondents), the retention rate was 73.7%; for those who reported being bored in class occasionally, the retention rate was 68.9%; and for those who reported being bored frequently in class in high school, the retention rate was 57.7%. Both of these indicators suggest the importance of engagement in the high school for subsequent college engagement and retention. Focus on classroom engagement as well as collaborative learning in and out of the classroom in both high school and college could improve collegiate retention rates.



Commitment to Institution

Retention rates were higher among students who indicated they were more committed to attending USCA than those who showed lower levels of commitment. Statistically significant differences between retained and departing students were observed on three items related to institutional commitment: probability of transfer, when students first visited USCA's campus, and the importance of USCA's good academic reputation.

Planning to transfer to another institution was the most significant indicator of student attrition after one year – almost half (46.2%) of the students who indicated there was a "very good chance" they would transfer to another institution did not return to USCA for a second year. Interestingly enough, among this group of students, the mean predicted GPA was actually lower than students who thought it was less probable they would transfer, suggesting that as a group, the students who have plans to transfer are both less committed to attending USCA as well as less well prepared academically. For those who indicated that there was "some chance" they would transfer, the retention rate was just 61.5%, while for those who indicated that there was "no chance" or "very little chance" they would transfer, the retention rate was 72.6%. This level of difference in retention rates may indicate that this survey item could provide a useful indicator for enrollment management.

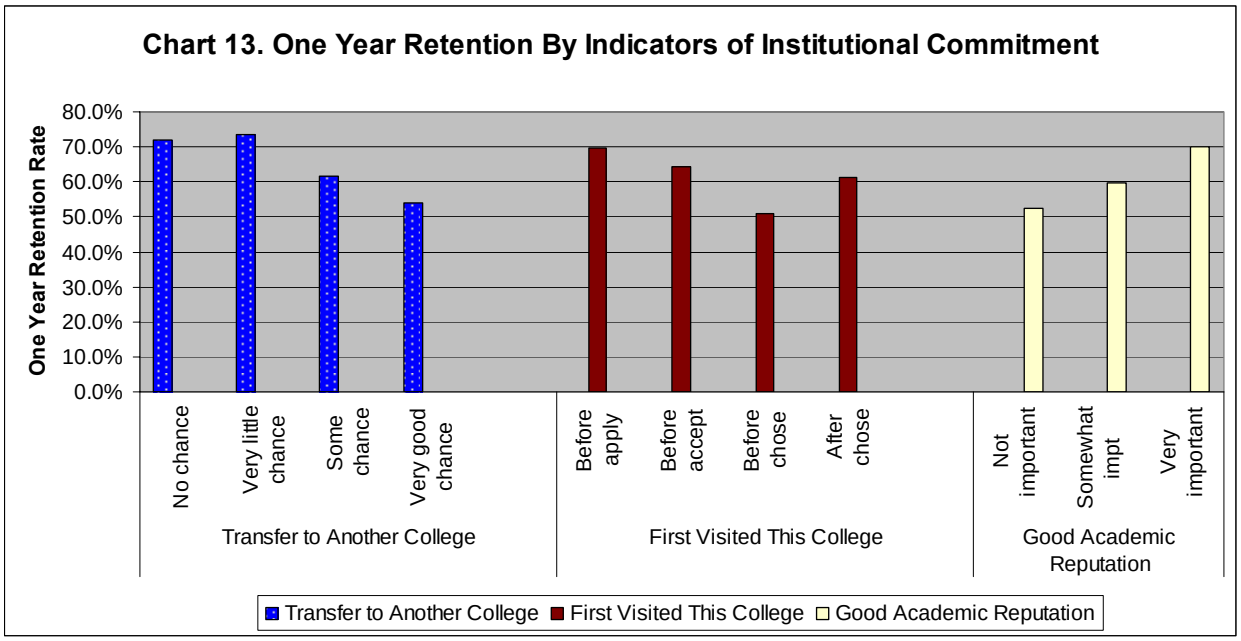
Table 24. Retention and Academic Performance by Commitment to the Institution (2003 FY Cohort)

Survey Item	N	Mean Pr GPA	Mean F 2003 Sem GPA	Mean F 2004 Sem GPA	Pct Retained to F 2004
Transfer to Another College					
No chance	114	2.64	2.28	2.72	71.8%
Very little chance	120	2.68	2.41	2.85	73.3%
Some chance	121	2.65	2.50	2.75	61.5%
Very good chance	119	2.53	2.45	2.41	53.8%
First Visited This College					
Before apply	235	2.68	2.53	2.76	69.6%
Before accept	54	2.56	2.29	2.65	64.3%
Before chose	65	2.56	2.25	2.79	50.8%
After chose	129	2.57	2.24	2.58	61.2%
Good Academic Reputation					
Not important	44	2.50	2.24	2.37	52.3%
Somewhat important	179	2.61	2.43	2.73	59.8%
Very important	261	2.64	2.40	2.73	70.1%

The 235 students who reported they visited USCA before they applied for admission also exhibited modestly higher one year retention rates (69.6%) compared to students who visited campus at a later point in the admissions process (57.9%). Students who visited campus before they applied for admission also had a higher mean predicted GPA than other students. These early campus visitors also earned higher first semester GPAs than other students.

High importance of USCA's academic reputation in deciding to matriculate at USCA also was associated with a relatively high retention rate. A total of 261 students indicated that the university's good academic reputation was "very important to them" in deciding to attend USCA, and seven out of ten (70.1%) of these students persisted to the second year. By contrast,

44 students indicated that good academic reputation was "not important" to them in deciding to attend USCA, and only about half (52.3%) of this group was retained to Fall 2004. Similarly, the 179 students who reported that good academic reputation was "somewhat important" were retained at a rate of 59.8%. This survey item too may be a useful indicator for enrollment management. These findings suggest that efforts to improve the quality of learning and to raise the academic profile of USCA may have some effect in attracting students who are more likely to stay at the institution.



Responses to choice of this institution did not indicate meaningful differences in retention patterns or academic performance, although students who chose USCA as their first or second choice had slightly higher predicted GPAs than those for whom USCA was third choice or below.

Motivations for Going to College

Four survey items that asked students about their reasons or motivations for going to college yielded statistically significant differences in one year retention rates and academic performance. These survey questions asked students to rate the importance of a range of reasons why they are going to college; the four significant items were:

- To Learn More About Things
- To Be Able to Make More Money
- To Get a Better Job
- To Get Away from Home

In terms of effect on retention, the most significant of these items was "To Learn More About Things." Students who indicated that learning more about things was a "very important" reason for going to college were retained at a rate of 68.2%, while students who indicated this reason

was "somewhat important" or "not important at all" were retained at a rate almost 11 points lower of 57.3%.

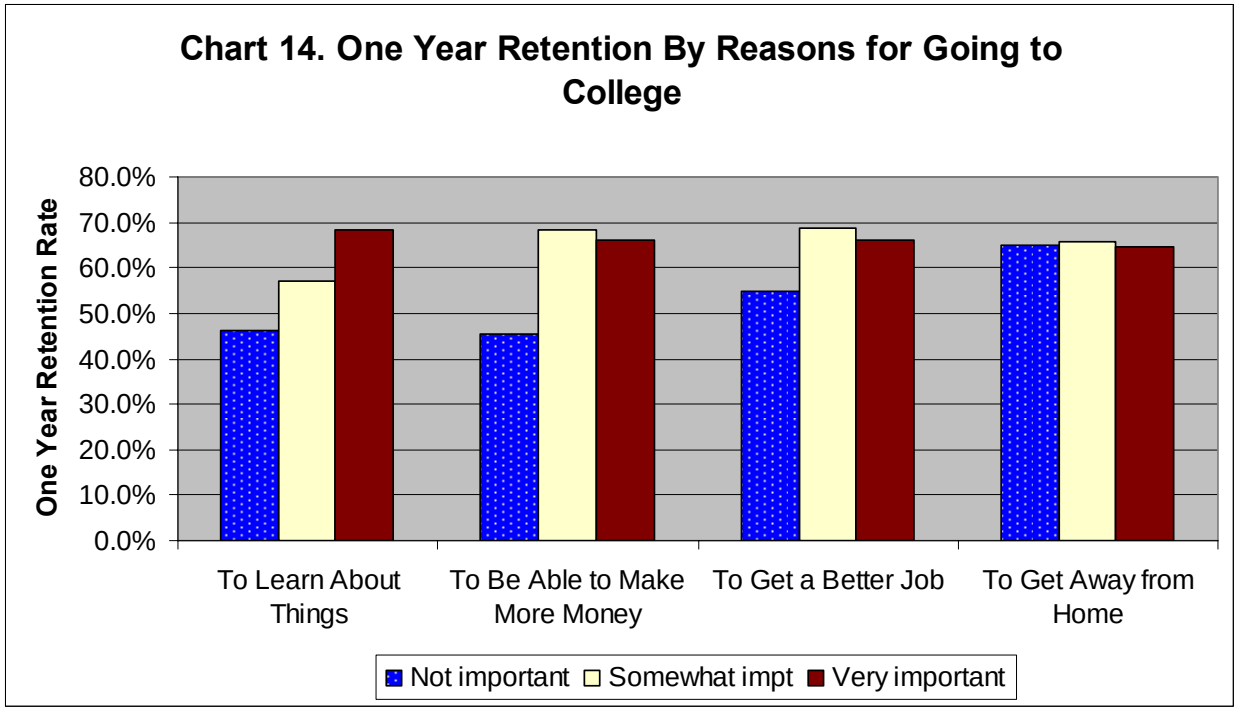
Table 25. Retention and Academic Performance by Motivations for Going to College (2003 FY Cohort)

Survey Item	N	Mean Pr GPA	Mean F 2003 Sem GPA	Mean F 2004 Sem GPA	Pct Retained to F 2004
To Learn More About Things					
Not important	13	2.75	2.30	2.98	46.2%
Somewhat important	119	2.58	2.20	2.58	57.1%
Very important	352	2.63	2.48	2.73	68.2%
To Be Able to Make More Money					
Not important	33	2.49	2.03	2.81	45.5%
Somewhat important	92	2.71	2.57	2.84	68.5%
Very important	353	2.62	2.41	2.66	66.3%
To Get a Better Job					
Not important	71	2.46	1.99	2.33	54.9%
Somewhat important	61	2.70	2.60	2.79	68.9%
Very important	352	2.64	2.45	2.75	66.2%
To Get Away from Home*					
Not important	230	2.67	2.55	2.77	64.8%
Somewhat important	154	2.61	2.32	2.72	65.8%
Very important	93	2.54	2.21	2.52	64.5%

* Note large differences in academic performance but similar retention rates, suggesting that desire to get away from home can mitigate some of the negative effects of weak academic performance on retention rates.

Financial and career reasons for attending college also showed some modest effect on retention rates. Students who indicated that the ability to make more money was "not important" in their decision to go to college were retained at a rate of just 45.5%, while others for whom money was a more important factor for going to college were retained at a rate of 66.7%. While the effect of career factors on retention was not statistically significant, a similar pattern was apparent, with 54.9% of those indicating that it was "Not important" to get a better job in their decision to go to college returning for a second year. By contrast, students for whom getting a job was a "Somewhat" or "Very Important" reason for attending college were retained at a rate of 66.6%. While careerism is at times maligned as an unfortunate characteristic of college students nationwide, it nevertheless represents a modest motivator for staying in college.

There was neither a statistical nor a practical difference in the retention rates by the importance of getting away from home in the decision to go to college, although it may be noteworthy that students who indicated it was very important to get away from home, and more often lived in the residence halls, earned lower grades (mean first semester GPA = 2.21) than students for whom this was not an important reason even while they were retained at the same rate as students for whom this was not an important reason. Such findings may suggest that in a larger study when controlling for semester grade point average, the motivation to leave home does provide students with some incentive to stay in college at higher rates.



Other Attitudes and Values

Two other attitudes and values were observed to have a statistically significant linkage to one year retention rates. Students who disagreed or strongly disagreed that the federal government should increase spending on the military were retained at higher rates (71.4%) than those who agreed with increased levels of military spending (58.8%). This finding may seem somewhat surprising since students whose political leanings were conservative or far right were retained at 66.9% while students who characterized their political orientation as liberal or far left were retained at 58.5%. However, following their self-interests, young individuals who have opted to attend college may simply be more likely to support fiscal policies that direct resources toward education rather than the military, and the lower retention rate of students who support higher levels of military funding could indicate that some of these non-returning students may view the military as a feasible alternative to attending college full-time.

Another somewhat interesting finding that rose to the level of statistical significance ($p<0.05$) was that the students who thought that there was "some chance" or a "very good chance" that they would strengthen their spiritual beliefs while in college were retained at higher rates (69.0% one year retention rate) than those who indicated there was little or no chance they would strengthen their religious beliefs in college (55.2% one year retention rate). This finding could indicate that among those who thought their spiritual beliefs would grow stronger there is a greater level of interest in personal development across multiple arenas. It could also indicate that exploration of religion and values could appeal to student interests across the curriculum.

Relationship of Retention to Financial Aid and Parental Income

The relationship between financial aid and parental income to student persistence at USCA is complicated, and the findings of this study are a tentative first glimpse of some of the complexities involved. There were statistically significant relationships observed, however, between one year retention between parental income as well as how students planned to pay for their first year of college.

Table 26. Measures of Association: Values of Eta Squared†, Ranked by Effect on Retention (2003 FY Cohort)

	Pr GPA		F 2003 Sem GPA		F 2004 Sem GPA		One Year Retention	
Financial Factors								
Parental Income	0.046		0.054		0.121	*	0.045	
Sources to Cover FY Educational Expenses								
Family Resources	0.125	***	0.079	***	0.112	***	0.035	*
My Own Resources	0.022		0.033	*	0.052	*	0.016	
Aid Which Need Not Be Repaid	0.128	***	0.041	**	0.089	***	0.013	
Aid Which Must Be Repaid	0.077	***	0.038	*	0.058	*	0.010	

† Eta squared is an ANOVA statistic similar to R squared. It shows proportion of variance accounted for by the variable. For instance, a value of 0.056 for eta squared indicates that the factor can account for 5.6% of variance.
* p<0.05; ** p<0.01; *** p<0.001

Table 27. Retention and Academic Performance by Parental Income (2003 FY Cohort)

Survey Item	N	Mean Pr GPA	Mean F 2003 Sem GPA	Mean F 2004 Sem GPA	Pct Retained to F 2004
Less than $10,000	15	2.64	2.07	3.12	46.7%
$10,000-$14,999	14	2.56	2.18	2.71	50.0%
$15,000-$19,999	19	2.59	1.78	1.98	42.1%
$20,000-$24,999	18	2.62	2.51	2.52	72.2%
$25,000-$29,999	18	2.75	2.42	3.25	72.2%
$30,000-$39,999	31	2.69	2.31	2.63	80.6%
$40,000-$49,999	53	2.67	2.61	2.84	60.4%
$50,000-$59,999	34	2.63	2.62	2.86	73.5%
$60,000-$74,999	63	2.57	2.36	2.82	68.3%
$75,000-$99,999	58	2.71	2.58	2.60	69.0%
$100,000-$149,999	50	2.67	2.55	2.93	60.0%
$150,000-$199,999	6	2.66	2.46	3.02	66.7%
$200,000-$249,999	7	2.33	1.95	1.51	71.4%
$250,000 or more	16	2.32	1.97	2.18	43.8%

Overall, students who parents had very low or very high annual incomes were retained at lower rates than students whose parents earned incomes closer to the 2002 median income for a family of four in South Carolina of $56,110 (Office of Research and Statistics, South Carolina Budget and Control Board, 2005). For the 79 students who reported their parents earned more than $100,000 per year, the retention rate was 58.2%; for the 48 students who reported their parents earned less than $20,000 per year, the retention rate was just 45.8%. For students whose parents earned between $20,000 and $100,000, the retention rate was 69.5%. In all likelihood, students

from families in the higher income ranges may have a wider array of educational options and have more freedom to choose to attend other institutions. Students from the lower income ranges earned somewhat lower first semester GPAs than other students in the cohort

The relationship between financial aid first year students expect to receive, as reported on the CIRP Freshman Survey, and their persistence to the second year is inextricably intertwined with the significant levels of merit-based aid awarded to students in South Carolina. Students who reported receiving high amounts of aid that did not need to be repaid – a category that would include both need-based Pell Grants as well as merit-based Palmetto, Life, and Hope Scholarships – were retained at higher rates than students who expected not to receive such aid. However, it is important to recognize that these students receiving merit-based aid also entered USCA with better test scores and better high school records, and so it is not possible to attribute higher retention rates exclusively to academic preparation or financial assistance. Conversely, students who did not receive merit-based aid were more likely to draw upon personal or family resources as well as to take out loans to pay for college.

Table 28. Retention and Academic Performance by Expected Financial Sources To Pay for the First Year of College (2003 FY Cohort)

Survey Item	N	Mean Pr GPA	Mean F 2003 Sem GPA	Mean F 2004 Sem GPA	Pct Retained to F 2004
Family Resources					
None	82	2.72	2.61	3.04	68.3%
< $1,000	153	2.77	2.65	2.87	69.9%
$1,000-$2,999	77	2.53	2.19	2.61	64.9%
$3,000-$5,900	52	2.44	2.10	2.47	42.3%
$6,000-$9,999	22	2.33	1.65	1.94	68.2%
$10,000 +	22	2.43	2.44	2.31	59.1%
My Own Resources					
None	127	2.67	2.61	2.92	71.7%
< $1,000	162	2.67	2.45	2.78	65.4%
$1,000-$2,999	51	2.51	2.05	2.41	54.9%
$3,000-$5,900	7	2.65	2.27	3.29	71.4%
$6,000-$9,999	2	2.43	2.70	2.12	100.0%
$10,000 +	0	--	--	--	--
Aid Which Need Not Be Repaid					
None	47	2.43	2.20	2.46	63.8%
< $1,000	22	2.45	2.02	3.08	59.1%
$1,000-$2,999	103	2.53	2.40	2.52	60.2%
$3,000-$5,900	174	2.73	2.55	2.87	71.3%
$6,000-$9,999	50	2.92	2.84	3.24	66.0%
$10,000 +	18	2.76	2.41	2.55	77.8%
Aid Which Must Be Repaid					
None	198	2.74	2.60	2.89	69.7%
< $1,000	29	2.53	2.25	2.78	65.5%
$1,000-$2,999	78	2.52	2.37	2.55	66.7%
$3,000-$5,900	26	2.48	1.97	2.35	65.4%
$6,000-$9,999	9	2.49	2.15	2.56	44.4%
$10,000 +	4	2.28	2.15	3.60	50.0%

First Semester Academic Performance and First Year Retention

Consistent with previous research, retention rates were significantly higher for students who earned high first semester GPAs. Retention rates begin to decline when first semester GPA is below 2.0 and drop significantly when semester GPAs are below 1.5. The number of A's earned in first courses as well as number of D's, F's, and W's earned in first semester courses were significant factors related to the retention rate.

The mean first semester GPA for the 2003 first year cohort was 2.41 (Std. Dev. = 1.01), with 168 students, or just under a third (31.2%) of the class earning below a 2.0 GPA. A total of 91 students in this low-performing group earned a semester GPA of over 1.20, however, and under the current probation and suspension policy would *not* have been placed on academic probation or suspension or received any official notice about unsatisfactory academic performance. On the high end of the spectrum, 178 students or about one third of the cohort (33.1%) earned a first semester GPA of 3.0 or higher. It is important to observe that while semester GPA represents the best available measure of academic performance, it also is greatly indicative of adjustment to college, decision-making skills, amount of time spent on academic work, and other factors that may influence the grades students earn in their courses.

Table 29. One Year Retention By First Semester GPA (2002 FY Cohort and 2003 FY Cohort)

	2002 FY Cohort						2003 FY Cohort					
	Fall 2002		Spring 2003		Fall 2003		Fall 2003		Spring 2004		Fall 2004	
	N	Pct of Cohort	N	Pct Retn	N	Pct Retn	N	Pct of Cohort	N	Pct Retn	N	Pct Retn
Complete WD	2	0.4%	0	0.0%	0	0.0%	7	1.3%	0	0.0%	0	0.0%
0.00-0.49	19	4.0%	6	31.6%	2	10.5%	24	4.5%	11	45.8%	2	8.3%
0.50-0.99	19	4.0%	10	52.6%	5	26.3%	27	5.0%	19	70.4%	4	14.8%
1.00-1.49	34	7.2%	31	91.2%	14	41.2%	53	9.9%	46	86.8%	25	47.2%
1.50-1.99	70	14.9%	59	84.3%	34	48.6%	57	10.6%	53	93.0%	35	61.4%
2.00-2.49	73	15.5%	72	98.6%	55	75.3%	95	17.7%	91	95.8%	65	68.4%
2.50-2.99	95	20.2%	92	96.8%	72	75.8%	93	17.3%	89	95.7%	66	71.0%
3.00-3.49	80	17.0%	78	97.5%	69	86.3%	103	19.2%	100	97.1%	80	77.7%
3.50-4.00	79	16.8%	77	97.5%	70	88.6%	78	14.5%	78	100.0%	69	88.5%
Cohort Total	471	100.0%	425	90.2%	321	68.2%	537	100.0%	487	90.7%	344	64.1%

Nevertheless, academic performance as measured by first semester GPA was again the most prominent single predictor of student persistence among entering freshmen. Retention to the second semester is a curve that resembles a logarithmic or hyperbolic sine function of first semester GPA, and retention to the second year more resembles a linear relationship to first semester GPA, regardless of performance in second semester performance (in fact second semester mean GPAs typically do not exhibit significant differences for groups of students in a given first semester GPA range). For the 178 students who earned at least a 3.0 first semester GPA, the one year retention rate was 83.7%. By contrast, the 30 students who earned a first semester GPA below 1.0 were retained at a rate of just 20.0%, and the 110 students whose first semester GPA was between 1.0 and 1.99 had a retention rate of 54.5%. The seven students in the 2003 first year cohort who withdrew entirely during the first semester did not return within three semesters. Further, mean semester GPA was observed to decline slightly over the first three

semesters, and most of the apparent increase in academic performance among initially low-performing groups may be attributed to attrition rather than significant improvement in course grades. These findings reinforce results from *Academic Tracking Report #3* and point clearly toward the critical role of academic success in the first semester as an indicator or student persistence to the second year.

Chart 15. Retention of 2002 and 2003 FY Cohorts By 1st Semester GPA

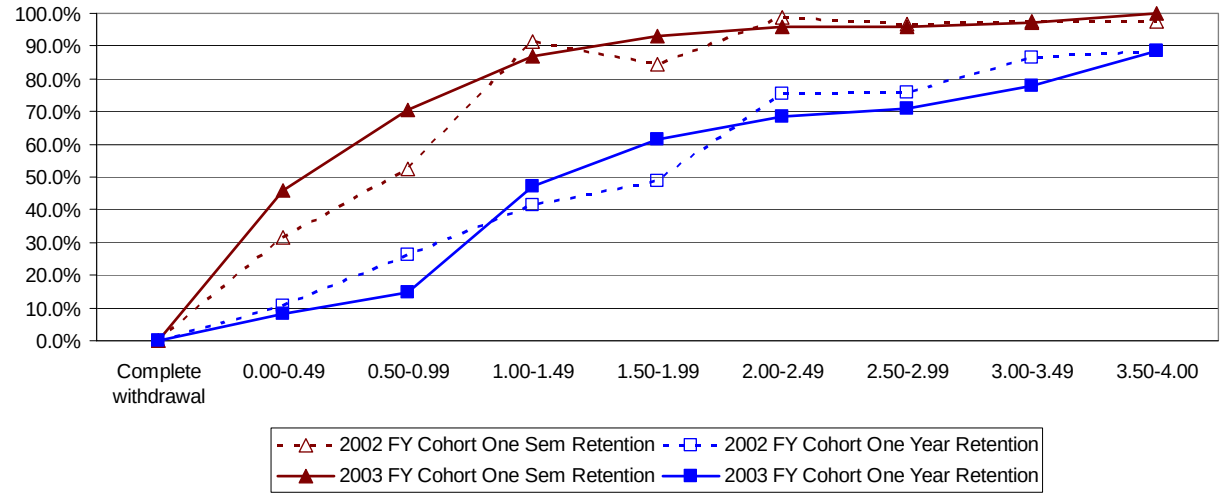


Chart 16. Histogram of Fall 2003 Semester GPA for Retained Students (N=346)

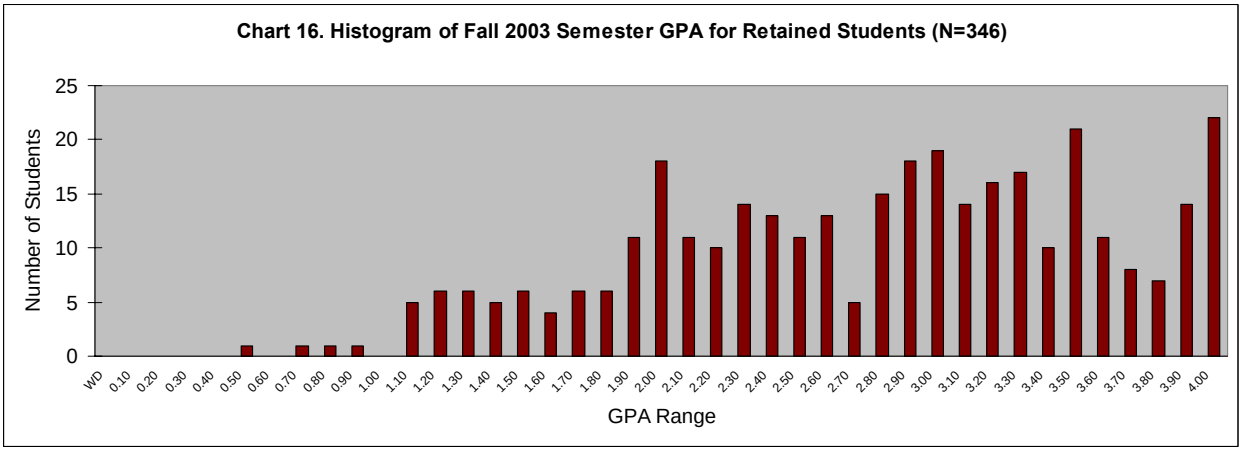
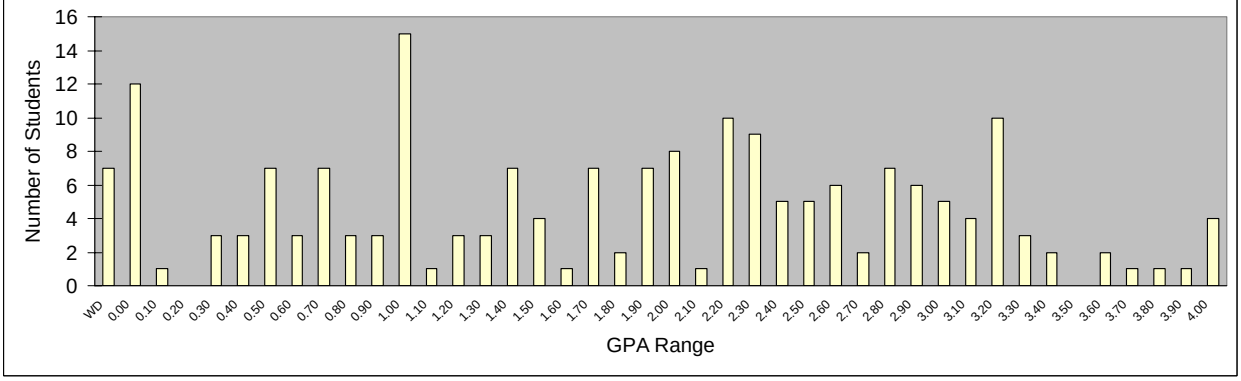


Chart 17. Histogram of Fall 2003 Semester GPA for Nonreturning Students (N=191)



Consistent with findings from previous research, within first semester GPA ranges of 0.50, the level of academic performance in the first semester of students in these groups was generally indicative of academic performance in the following two terms. Of the 52 students in the lowest performing groups, only six were retained to a third semester, and the mean semester GPA of these students was still below 2.0. Performance and retention rates at these low levels may indicate that academic suspension following 12 attempted hours below 1.0 may in fact be an appropriate sanction and would prevent these students from adding to the sizeable deficit in their undergraduate grade point averages. Of the 110 students who earned a first semester GPA between 1.0 and 1.99, however, 70 were retained, and these students exhibited modest improvement in their academic performances. The mean semester GPA for students in these groups increased to about 2.2 for their third semester. Interestingly enough, semester GPAs for students in the four 0.5 first semester GPA ranges above 2.0 either remained constant or declined over three semesters.

Table 30. Retention and Academic Performance by First Semester GPA (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
Fall 2003 GPA	N	Mean Sem GPA	Pct of Cohort	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
Complete WD	7	--	1.3%	0	--	0.0%	0	--	0.0%
0.00-0.49	24	0.17	4.5%	11	0.68	45.8%	2	1.58	8.3%
0.50-0.99	27	0.72	5.0%	19	1.27	70.4%	4	1.56	14.8%
1.00-1.49	53	1.22	9.9%	46	1.47	86.8%	25	2.19	47.2%
1.50-1.99	57	1.76	10.6%	53	1.64	93.0%	35	2.22	61.4%
2.00-2.49	95	2.20	17.7%	91	2.03	95.8%	65	2.24	68.4%
2.50-2.99	93	2.74	17.3%	89	2.37	95.7%	66	2.58	71.0%
3.00-3.49	103	3.20	19.2%	100	2.89	97.1%	80	2.93	77.7%
3.50-4.00	78	3.79	14.5%	78	3.65	100.0%	69	3.59	88.5%
Cohort Total	537	2.41	100.0%	487	2.38	90.7%	346	2.71	64.4%

First Semester Course Grades by Demographic Factors and Retention

Also consistent with findings from previous research, patterns of academic performance and persistence to a second year varied by race or ethnicity (see Tables 28 and 29). Black or African American students in the cohort were more likely to persist in the face of low grades than were white students with grades in the same range. Among white students, failing to earn a first semester GPA over 2.0 significantly impacted the decision to return. The average one-year retention rate of all white students in the 2003 FY cohort earning a first semester GPA below 2.0 was 30.9% (for the 2002 FY cohort the retention rate for this group was 29.3%), and for the 37 white students who earned a fist semester GPA below 1.0 only two of them (5.4%) returned to complete their third semester. The retention rate for white students earning over 2.0, however, was 73.7% (for the 2002 FY cohort the retention rate for this group was 80.6%).

By contrast, black or African American students earning a first semester GPA between 1.0 and 1.99 had a one year retention rate of 65.2%, although much like white students, only 3 (20.0%) African American or Black students who earned first semester GPAs below 1.0 returned for a second year. The retention rates of African American or black students are generally higher than

those of whites at every GPA range, which is why the overall retention rate of African American or Black students is higher that the retention rate for white students. This difference is masked to some extent because a significant number of black or African American students earned low first semester grades (61 out of 123 earned a first semester GPA below 2.0 and the mean Fall 2003 semester GPA for all African Americans was 1.96). This low level of academic performance among significant numbers of African American or black students, however, may foreshadow lower graduation rates among this racial or ethnic group and likely places them at risk of dropping out of USCA before earning a bachelor's degree.

Table 31. Retention and Academic Performance of White Students by First Semester GPA (2003 FY Cohort)

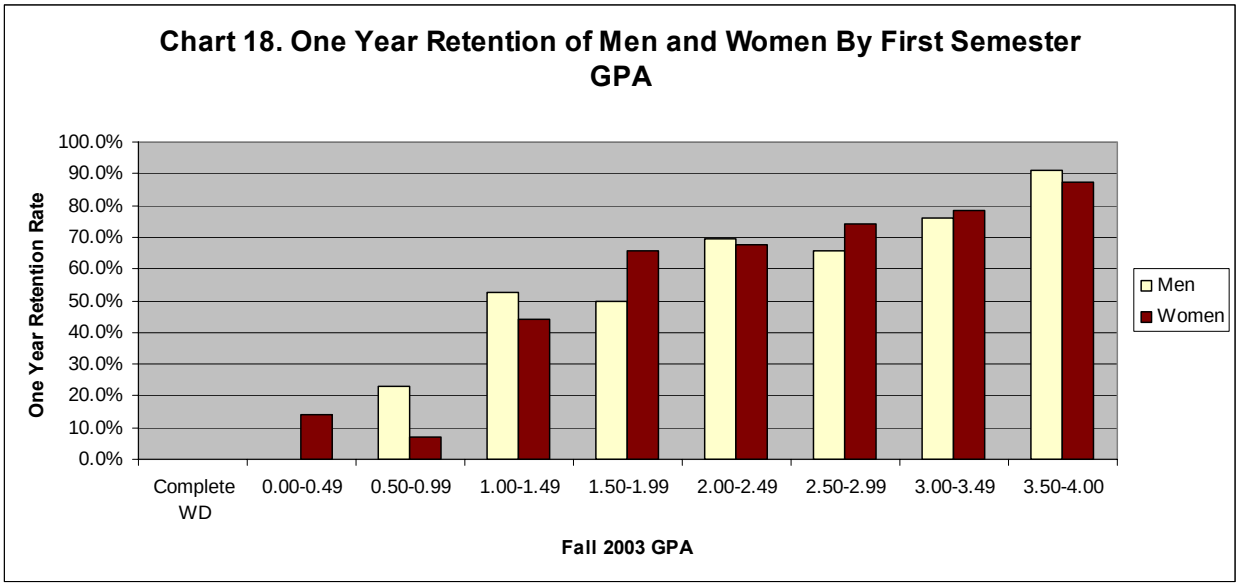
	Fall 2003			Spring 2004			Fall 2004		
Fall 2003 GPA	N	Mean Sem GPA	Pct of Cohort	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
Complete WD	6	--	1.6%	0	--	0.0%	0	--	0.0%
0.00-0.49	18	0.17	4.7%	7	0.69	38.9%	1	1.43	5.6%
0.50-0.99	13	0.71	3.4%	7	0.96	53.8%	1	1.21	7.7%
1.00-1.49	26	1.22	6.8%	19	1.42	73.1%	9	2.06	34.6%
1.50-1.99	31	1.77	8.1%	28	1.70	90.3%	18	2.16	58.1%
2.00-2.49	57	2.19	14.9%	54	2.03	94.7%	33	2.29	57.9%
2.50-2.99	78	2.74	20.4%	74	2.29	94.9%	52	2.51	66.7%
3.00-3.49	81	3.20	21.1%	78	2.91	96.3%	63	2.89	77.8%
3.50-4.00	73	3.79	19.1%	73	3.67	100.0%	65	3.58	89.0%
Total	383	2.58	100.0%	340	2.54	88.8%	242	2.81	63.2%

Table 32. Retention and Academic Performance of African American or Black Students by First Semester GPA (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
Fall 2003 GPA	N	Mean Sem GPA	Pct of Cohort	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
Complete WD	0	--	0.0%	0	--	--	0	--	--
0.00-0.49	3	0.29	2.4%	2	0.00	66.7%	1	1.73	33.3%
0.50-0.99	12	0.74	9.8%	10	1.43	83.3%	2	1.63	16.7%
1.00-1.49	26	1.21	21.1%	26	1.57	100.0%	16	2.27	61.5%
1.50-1.99	20	1.74	16.3%	19	1.49	95.0%	14	2.28	70.0%
2.00-2.49	31	2.22	25.2%	30	1.98	96.8%	25	2.30	80.6%
2.50-2.99	9	2.74	7.3%	9	2.84	100.0%	9	2.78	100.0%
3.00-3.49	20	3.19	16.3%	20	2.86	100.0%	16	3.00	80.0%
3.50-4.00	2	3.77	1.6%	2	4.00	100.0%	1	3.91	50.0%
Total	123	1.96	100.0%	118	1.99	95.9%	84	2.47	68.3%

Although previous research indicated that weaker academic performance of men overall did not seem to explain their overall lower retention rates in the 2002 FY cohort, lower first semester GPAs of men may be linked more firmly to lower semester GPAs. Among the 2003 FY cohort, just over a sixth (17.1%) of men earned a first semester GPA above 3.0, while over a quarter

(27.0%) of women earned a first semester GPA over 3.0. Even though men in the 3.5-4.0 semester GPA range were retained at just slightly higher rates, than women, the relatively low number of men who earned high grades likely accounts for some of the gender gap in the retention rates.



First Semester Course Grades and Retention Patterns

In addition to the linear relationship observed between first semester GPA and student persistence, especially earning a grade of A in just one or two courses resulted in significantly higher retention rates, while earning no grades of A resulted in much lower retention rates. For instance, students who earned just one course grade of A (n=120) had a one-year retention rate of 71.5% 70.5%, well above the cohort average of 64.5%, but students who earned two to four A's (n=54) (n=125) had a retention rate of 85.2%. While these retention rates for the 2003 FY cohort are comparable to those for similar students in the 2002 FY cohort, the proportion of the entering class in 2003 that earned two A's was only 10.1%, while for the 2002 FY cohort, the percentage of the class that earned two A's in the first semester was 23.7%.

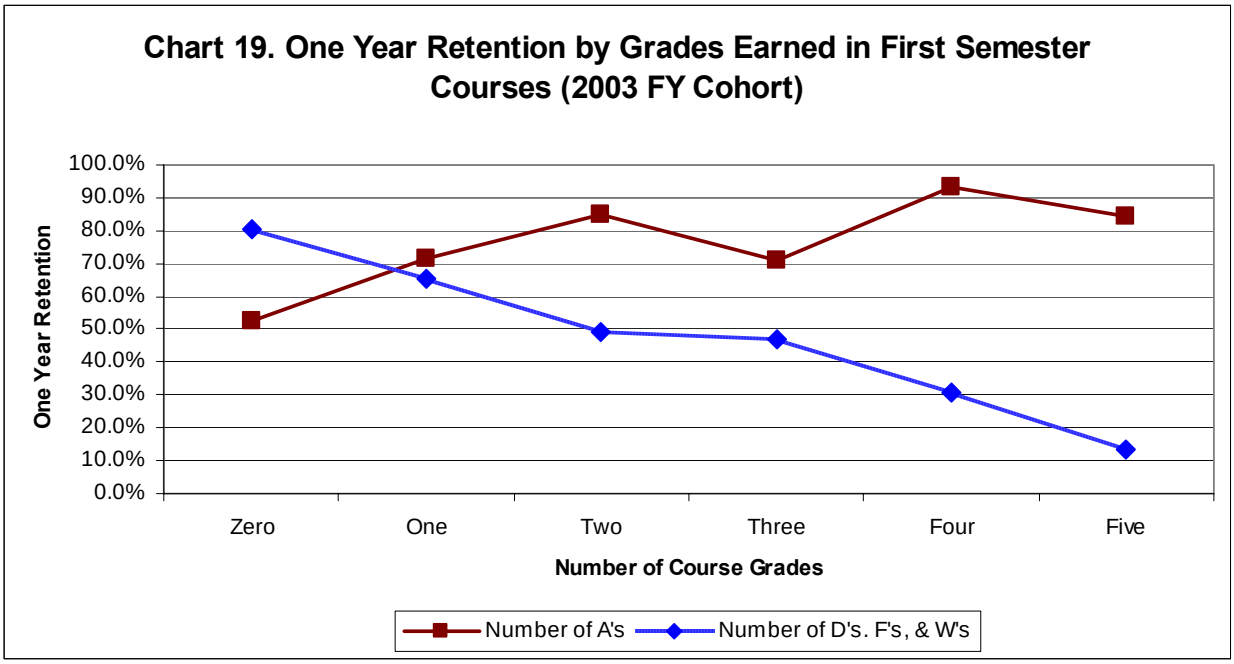
Table 33. One Year Retention by Number of A's Earned in First Semester Courses (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Sem GPA	Pct of Cohort	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
Zero A's	283	1.76	52.7%	239	1.82	84.5%	148	2.30	52.3%
One A	120	2.73	22.3%	117	2.50	97.5%	86	2.66	71.7%
Two A's	54	3.19	10.1%	54	2.88	100.0%	46	2.99	85.2%
Three A's	31	3.44	5.8%	28	3.27	90.3%	22	3.37	71.0%
Four A's	30	3.80	5.6%	30	3.69	100.0%	28	3.55	93.3%
Five A's	19	3.93	3.5%	19	3.80	100.0%	16	3.70	84.2%
Grand Total	537	2.41	100.0%	487	2.38	90.7%	346	2.71	64.4%

Conversely, the retention rate was substantially lower for students who earned grades of D, F, or W in their first semester. For students who completed their first semester with no major blemishes on their transcripts, the one-year retention rate was 80.2% (a full 7% lower than in 2002 for the same group of students). As might be expected, retention rates were substantially lower for students who earned several D's, F's or W's; indeed, the 107 students who earned two or more of these marks had a one-year retention rate of 41.2%, and this figure drops to below 30% for three or more D's, F's, or W's. These findings again indicate that improving academic success, especially by assisting students failing one or more courses, could help raise retention rates, especially because more than half (52.9%) of the 2003 FY cohort earned at least one D, F, or W in a first semester class. Students who experience academic difficulties to the point that they earn under a "C" in several classes may become discouraged by their lack of success and make the decision not to return to USCA.

Table 34. One Year Retention by Number of D's, F's, or W's Earned in First Semester Courses (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Sem GPA	Pct of Cohort	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
Zero D's, F's or W's	253	3.15	47.1%	244	2.89	96.4%	203	2.97	80.2%
One D, F, or W	107	2.48	19.9%	103	2.25	96.3%	70	2.53	65.4%
Two D's, F's or W's	73	1.80	13.6%	65	1.64	89.0%	36	2.29	49.3%
Three D's, F's or W's	47	1.36	8.8%	40	1.63	85.1%	22	2.18	46.8%
Four D's, F's or W's	42	0.74	7.8%	27	1.38	64.3%	13	1.92	31.0%
Five D's, F's or W's	15	0.26	2.8%	8	1.13	53.3%	2	2.33	13.3%
Cohort Total	537	2.41	100.0%	487	2.38	90.7%	346	2.71	64.4%



Performance in Specific First Semester Courses and Retention

Retention patterns by enrollment in specific Fall 2003 courses were in many cases not consistent with the patterns observed among the 2002 FY cohort. For instance, while there was a 78.6% retention rate of freshmen who took ABIO 102 in Fall 2002 (N=45, mean Pr GPA = 2.85), freshmen who took ABIO 102 in Fall 2003 (N=69, mean Pr GPA=2.68) were retained at a rate of just 58.0%. Retention rates of students who took ASUP 101 in Fall 2003 were also lower than they were for students who took the course the previous year, and gender and race differences were less noticeable. These findings indicate that what courses students take may be less predictive of retention to a second year than the level at which they perform in these courses.

Table 35. One Year Retention by Enrollment in Top 12 First Semester Courses, Sorted by Enrollment (2003 FY Cohort)

	Fall 2003				Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Course Grade	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
AEGL 101	470	2.60	2.39	2.35	426	2.33	90.6%	295	2.66	62.8%
AMTH 108	259	2.57	2.27	2.30	233	2.20	90.0%	156	2.63	60.2%
ASCY 101	220	2.57	2.10	2.27	194	2.36	88.2%	138	2.72	62.7%
APSY 101	208	2.69	2.48	2.45	187	2.47	89.9%	140	2.78	67.3%
AHST 101	133	2.62	2.24	2.31	113	2.49	85.0%	84	2.85	63.2%
ATHE 161	98	2.59	2.48	2.36	89	2.29	90.8%	59	2.66	60.2%
ASUP 101	93	2.54	3.18	2.49	87	2.40	93.5%	64	2.70	68.8%
ABIO 232	75	2.62	2.03	2.24	68	2.34	90.7%	54	2.69	72.0%
ABIO 101	70	2.58	2.48	2.41	63	2.29	90.0%	46	2.77	65.7%
ABIO 102	69	2.68	1.68	2.13	59	2.37	85.5%	40	2.76	58.0%
ACHM 101	54	2.68	2.09	2.50	50	2.56	92.6%	43	2.78	79.6%
APLS 201	50	2.66	2.13	2.38	47	2.22	94.0%	33	2.71	66.0%

Table 36. One Year Retention by Enrollment in Top 12 First Semester Courses (2002 FY Cohort Compared to 2003 FY Cohort)

	2002 FY Cohort							2003 FY Cohort							Difference	
	Fall 2002				Fall 2003			Fall 2003				Fall 2004				
	N	Mean Pr GPA	Mean Course Grade	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Pr GPA	Mean Course Grade	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	Δ 3rd Sem GPA	Δ Pct Retn
ABIO 101	30	2.74	2.52	2.44	19	2.41	63.3%	70	2.58	2.48	2.41	46	2.77	65.7%	0.36	2.4%
ABIO 102	42	2.85	2.01	2.51	33	2.89	78.6%	69	2.68	1.68	2.13	40	2.76	58.0%	-0.13	-20.6%
ABIO 232	19	2.61	1.68	1.97	15	2.72	78.9%	75	2.62	2.03	2.24	54	2.69	72.0%	-0.03	-6.9%
ACHM 101	36	2.63	2.33	2.37	28	2.79	77.8%	54	2.68	2.09	2.50	43	2.78	79.6%	-0.01	1.8%
AEGL 101	403	2.66	2.41	2.40	267	2.65	66.3%	470	2.60	2.39	2.35	295	2.66	62.8%	0.01	-3.5%
AHST 101	72	2.73	2.10	2.45	45	2.77	62.5%	133	2.62	2.24	2.31	84	2.85	63.2%	0.08	0.7%
AMTH 108	236	2.59	2.44	2.32	158	2.56	66.9%	259	2.57	2.27	2.30	156	2.63	60.2%	0.07	-6.7%
APLS 201	39	2.70	2.32	2.21	29	2.45	74.4%	50	2.66	2.13	2.38	33	2.71	66.0%	0.26	-8.4%
APSY 101	224	2.66	2.12	2.43	151	2.72	67.4%	208	2.69	2.48	2.45	140	2.78	67.3%	0.06	-0.1%
ASCY 101	153	2.64	2.33	2.46	104	2.66	68.0%	220	2.57	2.10	2.27	138	2.72	62.7%	0.06	-5.3%
ASUP 101	82	2.71	3.39	2.55	61	2.71	74.4%	93	2.54	3.18	2.49	64	2.70	68.8%	-0.01	-5.6%
ATHE 161	79	2.72	2.70	2.50	58	2.68	73.4%	98	2.59	2.48	2.36	59	2.66	60.2%	-0.02	-13.2%

While the overall retention rate of students in the 2003 FY cohort who took ASUP 101 Strategies for Academic Achievement was 68.8%, which was 4.3% higher than the cohort's retention rate of 64.5%, this higher level of retention in the course does not rise to the level of statistical significance, as was observed among the previous year's cohort, for which the retention rate was 74.4%. Students who earned a grade of A in the course in Fall 2003, however, did earn a mean semester GPA of 3.18, outperforming their mean predicted GPA of 2.69 by almost half a grade point. When removing the grade earned in ASUP 101 from students semester GPAs (since a disproportionate number of students earned A's in this one credit course), mean semester GPAs were still at a respectable 3.12. It is quite possible that students who earn A's in ASUP 101 internalize the skills they need for academic success in other courses, although it is also possible that these students, who all voluntarily elect to take the course, are motivated to succeed in college anyway. Further research is required to assess the extent to which students master specific learning outcomes in ASUP 101 and other courses to determine their effectiveness and impact on retention rates.

Table 37. One Year Retention of Students Enrolled in ASUP 101 By Course Grade (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	27	2.69	3.18	26	3.08	96.3%	22	3.21	81.5%
B+	14	2.55	2.66	13	2.29	92.9%	11	2.63	78.6%
B	31	2.48	2.37	31	2.11	100.0%	23	2.26	74.2%
C+	9	2.37	1.85	7	2.00	77.8%	4	2.58	44.4%
C	7	2.32	1.27	6	1.63	85.7%	3	2.41	42.9%
D+	0	--	--	--	--	--	--	--	--
D	3	2.28	0.86	2	1.10	66.7%			0.0%
F	0	--	--	--	--	--	--	--	--
W	2	3.34	3.75	2	3.59	100.0%	1	3.53	50.0%
All in course	93	2.54	2.49	87	2.40	93.5%	64	2.70	68.8%
Did not take course	444	2.64	2.39	400	2.38	90.1%	282	2.72	63.5%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Retention rates by grades earned in the top twelve courses with the highest freshman enrollment appear in the Appendix.

Second Semester Academic Performance and One Year Retention

Consistent with findings from previous research, GPAs in the first semester were typically indicative of academic performance in the second semester. Students who were successful in the first semester tended also to be successful in the second semester, and overall grade point averages for groups of students remained constant or declined marginally. Slightly lower academic performance in the second semester is a typical pattern for entering students.

A total of 486 students from the 2003 FY cohort (90.5% of the original group) began their second semester at USCA in Spring 2004; eight students withdrew completely before the end of the term in addition to the seven who completely withdrew during the Fall 2004 semester, for a total of 15 complete withdrawals from the university (2.8% of the cohort). Only one of these students had returned to USCA in Fall 2004, and this lone student withdrew from that semester as well. The mean second semester GPA for students in the cohort was 2.38, down just slightly from 2.41 for the first semester. About a third of the remaining students (32.2%) again earned a semester GPA below 2.0. Retention rates of the 98 students with a second semester GPA below 1.5 were markedly low at just 35.7%, while students with a second semester GPA between 1.5 and 1.99 were retained at almost twice that rate to the next Fall, with a retention rate of 69.6%. For students earning a second semester GPA above 2.0, the retention rate to Fall 2004 was 83.0%, with nearly nine out of ten students (89.6%) with a second semester GPA above 3.5 returning for a third semester.

Table 38. One Year Retention By Second Semester GPA (2003 FY Cohort)

	Fall 2003		Spring 2004		Fall 2004		
	N	Mean Sem GPA	N	Mean Sem GPA	N	Mean Sem GPA	Retn Pct
0.00-0.49	28	1.52	28	0.12	2	1.87	7.1%
0.50-0.99	25	1.67	25	0.72	11	1.37	44.0%
1.00-1.49	45	1.67	45	1.25	22	2.17	48.9%
1.50-1.99	56	1.93	56	1.72	39	2.06	69.6%
2.00-2.49	83	2.28	83	2.23	66	2.36	79.5%
2.50-2.99	79	2.70	79	2.73	60	2.77	75.9%
3.00-3.49	85	3.07	85	3.20	74	3.02	87.1%
3.50-4.00	77	3.61	77	3.77	69	3.55	89.6%
No Spring 04 Sem GPA	59	1.30	59	--	--	--	--
Cohort Total	537	2.41	537	2.38	347	2.71	64.6%

Of the 161 students who earned below a 2.0 first semester GPA, 35 (21.7%) of these students earned a second semester GPA above 2.0, but the retention rate for this group was 88.6%, suggesting that about one out of five students in academic trouble during their first semester was able to perform at adequate levels or better in the second semester.

Mean cumulative GPAs did not differ significantly from academic performance in each semester, with just under a third (30.9%) of the cohort remaining in Spring 2004 earning a cumulative GPA under 2.0. When students who departed USCA following the first term are included in this calculation, just over a third (33.5%) of the cohort had a cumulative GPA below 2.0 at the point of separation from the university.

Table 39. One Year Retention By Spring 2004 Cumulative GPA (2003 FY Cohort)

	Fall 2003		Spring 2004		Fall 2004		
	N	Mean Sem GPA	N	Mean Sem GPA	N	Mean Sem GPA	Retn Pct
0.00-0.49	6	0.29	6	0.11	--	--	0.0%
0.50-0.99	28	0.94	28	0.67	3	2.08	10.7%
1.00-1.49	49	1.48	49	1.02	19	1.70	38.8%
1.50-1.99	64	1.82	64	1.60	47	2.09	73.4%
2.00-2.49	88	2.32	88	2.15	66	2.32	75.0%
2.50-2.99	91	2.76	91	2.66	70	2.66	76.9%
3.00-3.49	94	3.22	94	3.23	80	3.10	85.1%
3.50-4.00	66	3.81	66	3.76	59	3.61	89.4%
No Spring 04 Sem GPA	51	1.15	51	--	3	1.15	5.9%
Cohort Total	537	2.41	537	2.38	347	2.71	64.6%

Conclusions

This analysis of one year retention rates for the 2003 FY cohort confirms and extends findings from earlier research on the entering cohort from the previous year, and the conclusions of this report again tend to reinforce national trends indicating that the quality of student learning is directly related to student persistence. Improving the depth and quality of students' learning (not simply awarding higher grades that are unmerited) will likely improve the first year retention rate as well as corresponding graduation rates.

1. Poor academic performance, especially in the first semester, is a common characteristic of half (49.5%) of the students in the 2003 FY cohort who did not return to USCA in Fall 2004. Further, earning even one course grade of D, F, or W was a significant risk factor for dropping out. More than one out of two students in the cohort earned one or more first semester course grades of D, F, or W, and only about one out of two of these students was retained to the following Fall. Early detection of poor academic performance *as soon as possible* during the first semester, such as mid- to late-September through a unified and pervasive early warning system could perhaps successfully address this issue. Additionally, following the identification of these students early in the first semester, intervention strategies would need to be developed and implemented to improve their success for the rest of the term.

2. Findings from this study seem to reinforce the currency of efforts to examine specific courses in which students earn grades of D, F, and W at high rates. In cases where retention rates for a specific course are significantly higher or lower than the previous year, academic units might review which faculty members taught these courses. Some differences in course performance and student retention may be attributable to teaching styles. Further development of assessment strategies that are directly linked to student learning outcomes is also necessary to target areas for student improvement.

3. Students who graduated in the bottom 50% of their high school class performed poorly at USCA with a first semester GPA of only 1.76, and only about two out of five of them were retained to Fall 2004. Students in this category made up about 20% of the entering class in 2003. These students could conceivably benefit from additional support and instruction about how to successfully navigate the academic and social challenges of college, such as through a structured program for provisionally admitted students. It may also be appropriate to examine the impact of limiting or curtailing admission of students who are ranked in the bottom deciles of their high schools upon graduation. Additional focus on academic success strategies may benefit all students.

4. As a closely related point, students with comparatively weaker academic records appear to comprise a significant portion of enrollment growth in recent entering classes. Better data management could make it possible to manage enrollment growth more intentionally through additional monitoring of applicant pool quality. Setting recruitment and/or yield targets for specific quality segments may increase the number of students likely to succeed at USCA who matriculate.

5. This study indicates that students in their high school preparation who substitute tech prep courses for college prep courses in English, math, and lab science on average earn low collegiate GPAs (below 1.90) and were retained at a rate of just 52.6%. These low rates of success would seem to indicate that admissions policies allowing substitution of these tech prep courses be reviewed.

6. Leading indicators for attrition should continue to be developed and monitored. In addition to academic inputs, this study identifies some items on the CIRP survey that indicate students who have an increased likelihood to leave the university. These include: self perception of overall academic ability and mathematical ability, partying and drinking in high school as well as studying and intellectual engagement in high school; institutional commitment, including plans to transfer; and strong motivation to learn as well as to make more money as reasons for attending college. Further research should also be conducted to verify the extent to which these indicators may apply to future cohorts.

7. Significantly more detailed research about the relationship between financial aid, family income, and academic success needs to be conducted. The development of indicators such as quality points earned per dollar of merit-based and need-based aid received could assist significantly in understanding how economic factors impact academic success and retention.

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Appendix

The following tables present one year retention rates and semester GPAs for students in the 2003 FY cohort enrolled in the 12 most popular courses in Fall 2003 (listed by most enrolled to least enrolled). When comparing these figures to other reports, it is important to observe that these table do not include all students enrolled in the courses for the Fall 2003 term but rather they include only full-time, first-year, baccalaureate-seeking students.

Table A-1. One Year Retention of Students Enrolled in AEGL101 By Course Grade (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	59	2.99	3.51	59	3.36	100.0%	46	3.35	78.0%
B+	47	2.73	3.10	45	2.81	95.7%	35	2.88	74.5%
B	99	2.64	2.73	94	2.59	94.9%	72	2.78	72.7%
C+	65	2.62	2.44	59	2.30	90.8%	41	2.45	63.1%
C	81	2.50	2.06	78	1.76	96.3%	49	2.37	60.5%
D+	30	2.39	1.76	29	1.72	96.7%	20	2.15	66.7%
D	34	2.38	1.56	31	1.83	91.2%	16	2.21	47.1%
F	46	2.34	0.68	25	1.26	54.3%	10	2.09	21.7%
W	9	2.31	2.10	6	1.96	66.7%	6	2.43	66.7%
All in course	470	2.60	2.35	426	2.33	90.6%	295	2.66	62.8%
Did not take course	67	2.83	2.84	61	2.75	91.0%	51	3.03	76.1%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-2. One Year Retention of Students Enrolled in AMTH 108 By Course Grade (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	46	2.98	3.35	45	2.98	97.8%	35	3.31	76.1%
B+	20	2.60	2.91	19	2.57	95.0%	15	2.82	75.0%
B	45	2.60	2.72	42	2.46	93.3%	32	2.64	71.1%
C+	16	2.47	2.38	14	2.05	87.5%	10	2.24	62.5%
C	58	2.48	2.21	54	1.86	93.1%	35	2.32	60.3%
D+	6	2.35	2.20	5	2.77	83.3%	4	1.95	66.7%
D	17	2.45	1.40	13	1.70	76.5%	10	2.21	58.8%
F	43	2.34	0.94	34	1.39	79.1%	12	2.22	27.9%
W	8	2.50	2.20	7	2.02	87.5%	3	2.76	37.5%
All in course	259	2.57	2.30	233	2.20	90.0%	156	2.63	60.2%
Did not take course	278	2.68	2.52	254	2.54	91.4%	190	2.78	68.3%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-3. One Year Retention of Students Enrolled in ASCY 101 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	14	3.26	3.76	14	3.68	100.0%	14	3.42	100.0%
B+	21	2.86	3.21	21	3.19	100.0%	19	3.31	90.5%
B	47	2.69	3.00	45	2.72	95.7%	34	3.03	72.3%
C+	20	2.50	2.43	18	2.45	90.0%	14	2.54	70.0%
C	36	2.50	2.16	33	2.17	91.7%	21	2.33	58.3%
D+	17	2.44	1.93	16	2.24	94.1%	11	2.11	64.7%
D	36	2.34	1.48	30	1.42	83.3%	18	2.08	50.0%
F	25	2.37	0.86	15	1.41	60.0%	6	2.52	24.0%
W	4	2.23	1.13	2	1.31	50.0%	1	1.60	25.0%
All in course	220	2.57	2.27	194	2.36	88.2%	138	2.72	62.7%
Did not take course	317	2.67	2.50	293	2.39	92.4%	208	2.71	65.6%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-4. One Year Retention of Students Enrolled in APSY 101 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	33	3.13	3.54	32	3.53	97.0%	29	3.42	87.9%
B+	20	2.83	3.23	19	2.96	95.0%	15	3.29	75.0%
B	48	2.74	2.97	47	2.75	97.9%	37	2.95	77.1%
C+	20	2.58	2.41	19	2.05	95.0%	14	2.53	70.0%
C	43	2.55	2.08	40	1.95	93.0%	31	2.04	72.1%
D+	7	2.54	1.52	6	1.68	85.7%	5	2.26	71.4%
D	16	2.51	1.47	14	1.51	87.5%	4	2.59	25.0%
F	18	2.30	0.50	8	1.39	44.4%	4	2.13	22.2%
W	3	2.54	1.65	2	2.47	66.7%	1	2.81	33.3%
All in course	208	2.69	2.45	187	2.47	89.9%	140	2.78	67.3%
Did not take course	329	2.59	2.38	300	2.32	91.2%	206	2.67	62.6%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-5. One Year Retention of Students Enrolled in AHST 101 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	28	2.99	3.59	27	3.54	96.4%	22	3.48	78.6%
B+	10	2.79	3.16	10	3.11	100.0%	10	3.14	100.0%
B	22	2.78	2.81	22	2.57	100.0%	17	2.87	77.3%
C+	6	2.66	2.45	5	2.33	83.3%	3	3.44	50.0%
C	22	2.46	2.09	18	2.13	81.8%	14	2.46	63.6%
D+	5	2.15	1.66	4	2.11	80.0%	3	1.84	60.0%
D	14	2.49	1.56	11	1.70	78.6%	10	2.25	71.4%
F	24	2.30	0.76	14	1.32	58.3%	4	2.06	16.7%
W	2	2.19	2.19	2	1.18	100.0%	1	1.97	50.0%
All in course	133	2.62	2.31	113	2.49	85.0%	84	2.85	63.2%
Did not take course	404	2.63	2.44	374	2.34	92.6%	262	2.67	64.9%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-6. One Year Retention of Students Enrolled in ATHE 161 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	31	2.86	3.41	29	3.12	93.5%	22	3.28	71.0%
B+	4	2.57	2.63	4	1.66	100.0%	2	2.74	50.0%
B	19	2.64	2.67	19	2.44	100.0%	14	2.64	73.7%
C+	1	2.18	2.23	1	1.13	100.0%	1	1.23	100.0%
C	16	2.46	2.16	15	2.04	93.8%	11	2.04	68.8%
D+	0	--	--	--	--	--	--	--	--
D	9	2.32	1.33	7	1.69	77.8%	5	2.23	55.6%
F	16	2.31	0.92	13	1.27	81.3%	4	1.93	25.0%
W	2	2.49	0.50	1	0.17	50.0%			0.0%
All in course	98	2.59	2.36	89	2.29	90.8%	59	2.66	60.2%
Did not take course	439	2.64	2.42	398	2.40	90.7%	287	2.72	65.4%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-7. One Year Retention of Students Enrolled in ASUP 101 By Course Grade (2003 FY Cohort)*

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	27	2.69	3.18	26	3.08	96.3%	22	3.21	81.5%
B+	14	2.55	2.66	13	2.29	92.9%	11	2.63	78.6%
B	31	2.48	2.37	31	2.11	100.0%	23	2.26	74.2%
C+	9	2.37	1.85	7	2.00	77.8%	4	2.58	44.4%
C	7	2.32	1.27	6	1.63	85.7%	3	2.41	42.9%
D+	0	--	--	--	--	--	--	--	--
D	3	2.28	0.86	2	1.10	66.7%			0.0%
F	0	--	--	--	--	--	--	--	--
W	2	3.34	3.75	2	3.59	100.0%	1	3.53	50.0%
All in course	93	2.54	2.49	87	2.40	93.5%	64	2.70	68.8%
Did not take course	444	2.64	2.39	400	2.38	90.1%	282	2.72	63.5%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

* Reproduces Table 37 above.

Table A-8. One Year Retention of Students Enrolled in ABIO 232 By Course Grade (2003 FY Cohort)

	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	5	3.00	3.68	5	3.65	100.0%	5	3.47	100.0%
B+	1	2.34	2.39	1	2.39	100.0%	1	2.47	100.0%
B	22	2.84	3.03	21	2.59	95.5%	18	3.10	81.8%
C+	4	2.80	2.94	4	3.30	100.0%	4	2.53	100.0%
C	20	2.58	2.19	20	2.00	100.0%	14	2.69	70.0%
D+	4	2.41	1.53	4	2.01	100.0%	3	2.87	75.0%
D	5	2.38	1.31	3	1.69	60.0%	3	1.87	60.0%
F	13	2.29	0.91	9	1.72	69.2%	6	1.31	46.2%
W	1	2.30	0.63	1	2.23	100.0%	0	--	0.0%
All in course	75	2.62	2.24	68	2.34	90.7%	54	2.69	72.0%
Did not take course	462	2.63	2.44	419	2.39	90.7%	292	2.71	63.2%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-9. One Year Retention of Students Enrolled in ABIO 101 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	4	3.33	3.49	4	3.54	100.0%	4	3.41	100.0%
B+	8	3.22	3.46	8	3.31	100.0%	8	3.44	100.0%
B	16	2.62	2.90	16	2.65	100.0%	11	2.68	68.8%
C+	12	2.47	2.36	11	2.13	91.7%	7	1.88	58.3%
C	22	2.35	1.90	19	1.63	86.4%	14	2.79	63.6%
D+	1	2.33	2.67	1	2.72	100.0%	1	2.64	100.0%
D	1	2.10	0.31	1	0.00	100.0%	0	--	0.0%
F	4	2.27	0.29	2	0.67	50.0%	1	2.00	25.0%
W	2	2.28	3.08	1	2.71	50.0%	0	--	0.0%
All in course	70	2.58	2.41	63	2.29	90.0%	46	2.77	65.7%
Did not take course	467	2.63	2.41	424	2.39	90.8%	300	2.71	64.2%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-10. One Year Retention of Students Enrolled in ABIO 102 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	6	3.31	3.85	6	3.84	100.0%	6	3.58	100.0%
B+	5	2.91	3.23	5	3.17	100.0%	5	2.49	100.0%
B	7	2.97	3.16	6	3.14	85.7%	5	3.42	71.4%
C+	5	2.80	2.61	5	2.63	100.0%	5	1.73	100.0%
C	8	2.65	2.16	5	2.20	62.5%	4	2.99	50.0%
D+	1	2.18	2.23	1	1.13	100.0%	1	1.23	100.0%
D	10	2.70	1.71	9	1.98	90.0%	7	2.70	70.0%
F	19	2.38	1.05	15	1.66	78.9%	4	2.72	21.1%
W	8	2.49	2.03	7	1.99	87.5%	3	2.56	37.5%
All in course	69	2.68	2.13	59	2.37	85.5%	40	2.76	58.0%
Did not take course	468	2.62	2.45	428	2.38	91.5%	306	2.71	65.4%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-11. One Year Retention of Students Enrolled in ACHM 101 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	7	3.17	3.60	7	3.61	100.0%	7	3.44	100.0%
B+	1	2.46	3.27	1	3.54	100.0%	1	3.54	100.0%
B	8	2.84	3.06	8	2.88	100.0%	8	2.79	100.0%
C+	5	2.47	2.75	5	2.87	100.0%	5	2.72	100.0%
C	16	2.76	2.61	14	2.55	87.5%	12	2.84	75.0%
D+	3	2.64	1.75	3	1.75	100.0%	2	2.49	66.7%
D	4	2.39	1.78	4	2.38	100.0%	4	2.63	100.0%
F	8	2.38	1.00	6	1.32	75.0%	4	1.62	50.0%
W	2	2.28	3.04	2	1.60	100.0%	0	--	0.0%
All in course	54	2.68	2.50	50	2.56	92.6%	43	2.78	79.6%
Did not take course	483	2.62	2.40	437	2.36	90.5%	303	2.70	62.7%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%

Table A-12. One Year Retention of Students Enrolled in APLS 201 By Course Grade (2003 FY Cohort)									
	Fall 2003			Spring 2004			Fall 2004		
	N	Mean Pr GPA	Mean Sem GPA	N	Mean Sem GPA	Pct Retn	N	Mean Sem GPA	Pct Retn
A	7	3.24	3.61	7	3.28	100.0%	7	3.59	100.0%
B+	4	2.54	3.13	4	3.30	100.0%	2	3.45	50.0%
B	7	2.66	2.73	7	2.99	100.0%	7	2.88	100.0%
C+	4	2.58	2.83	4	2.40	100.0%	2	2.96	50.0%
C	8	2.61	2.15	7	1.95	87.5%	5	2.05	62.5%
D+	4	2.68	2.17	4	2.21	100.0%	4	2.10	100.0%
D	3	2.30	1.84	3	1.46	100.0%	3	1.81	100.0%
F	9	2.48	1.06	8	0.83	88.9%	1	2.56	11.1%
W	4	2.60	2.44	3	1.45	75.0%	2	2.32	50.0%
All in course	50	2.66	2.38	47	2.22	94.0%	33	2.71	66.0%
Did not take course	487	2.62	2.41	440	2.40	90.3%	313	2.72	64.3%
Cohort Total	537	2.63	2.41	487	2.38	90.7%	346	2.71	64.4%