

What do 2014 New Student Survey Responses Tell Us about Persistence into the Third Term?

Prepared by Cinnamon Danube, Institutional Research and Decision Support, Spring 2016

Executive Summary:

This analysis builds on [previous analyses](#) that examined whether student background/demographic factors, midterm grades, and fall 2014 New Student Survey (NSS) responses were related to first semester academic achievement and second semester persistence. **This analysis focused on predicting third semester persistence** (defined as third term enrollment at UC Merced) and included UC Merced (UCM) GPA at the end of the first term as a predictor. Table 1 summarizes the findings. Bold text indicates relationships that remained robust when all variables were included in the same regression analysis and so likely represent the most promising risk factors and/or targets for intervention. For example, students who indicated a greater likelihood of leaving UCM (Plans to leave UCM) tended to have lower third term persistence. Additionally, when all variables were included in the same analysis, plans to leave was still robustly associated with lower persistence (note bold text), suggesting that plans to leave is a good predictor of leaving. **The most promising factors for identifying students at risk of not returning for their third term appear to be: lower first term UCM GPAs, uncertainty about one’s degree objective, and plans to leave UCM.**

Table 1. 2014 NSS Analysis Summary: Variables Related to Third Term Persistence

Demographic/Background Factors	Relationship with Persistence to Third Term
First Generation	Not First Gen > First Gen
SAT-R total	Higher Persistence
High School GPA	Higher Persistence
UC Merced Academic Factors	
Poor First Term (Fall 2014) Midterm Grade ^a	Lower Persistence
First Term (Fall 2014) GPA	Higher Persistence
Survey Scale/Items	
Uncertainty about degree objective	Lower Persistence
Feeling connected to UCM	Higher Persistence
Academic self-efficacy	Higher Persistence
Plans to leave UCM	Lower Persistence
Likelihood of to getting involved at UCM	Higher Persistence
Resource use: visited instructor or TA	Higher Persistence
Resource use: visited Students First Center	Lower Persistence
Habits: engaging in effective study skills	Higher Persistence
Habits: engaging in healthy behaviors	Higher Persistence
Habits: engaging in extracurricular activities	Higher Persistence
Habits: preparing for and attending classes	Higher Persistence
Obstacles: adjustment/fit	Lower Persistence
Obstacles: academic preparation/environment	Lower Persistence

Note: bolded text indicates variables that were robustly associated with the outcomes when all variables were included in the same analyses. These variables accounted for 33% of the variance in academic persistence. ^a defined as receiving at least one D or F grade at midterm. Specific survey items and items

that comprised survey scales can be found in Appendix A. First Generation is defined as neither parent having earned a Bachelor's degree.

Overview of Survey Administration and Dataset:

The 2014 New Student Survey (NSS) was administered in the fall to all new, incoming students after midterm grade reports and closed the last week of classes. The survey had 593 respondents (36% response rate). Transfer students (9%; $n = 56$) were not included in analyses because midterm grade reports are not collected for transfer students, which left a working dataset comprised of 537 entering freshmen, referred to as "respondents" from here on. Survey responses were combined with data on (a) midterm grades¹, (b) fall 2014 academic achievement (end of first term GPA), and (c) persistence to the fall of 2015 (enrollment into the third term).

Research Question:

Which responses to NSS questions and UCM academic factors (midterm grade data, end of first term GPA) were the best predictors of persistence/retention into the fall 2015 semester (third term) after accounting for student background/demographic factors? Survey questions spanned topics such as: academic self-efficacy, plans to remain at UC Merced, use of resources, academic habits, and perceptions of academic barriers/obstacles (see Appendix A).

Best Predictors of Persistence Into the Third Term:

All background/demographic factors, UCM academic factors, and survey responses significantly associated with third semester academic success at the bivariate level (summarized in Tables 2 and 3 in Appendices A and B) were included in a regression analysis. Including all predictors in the same analysis improves on examining bivariate associations because it allows one to determine the best predictors of the outcome.

Prior to conducting the regression analysis, all predictors were first correlated to examine potential multicollinearity issues (i.e., high correlations among predictor variables). Retained variables were then included in a stepwise logistic regression equation with demographic/background variables in Block 1 and UCM academic factors and survey variables in Block 2. Block 2 results revealed which UCM academic factors and survey response variables were significantly associated with persistence into the third semester after accounting for the background\demographic variables. Both the Block 1 and Block 2 models were significant, and adding the survey predictors to the model in Block 2 accounted for an increase in the predictive power of the model, with **the final model accounting for 33% of the variance in persistence**². Table 1 above shows a summary of the relationships in the final model, with bold text to indicate the significant predictors of persistence. Refer to Table 4 in Appendix C for the logistic regression odds ratios.

Summary:

¹ Data provided by Elizabeth Boretz. Poor midterm grade was defined as receiving at least one D or F grade at midterm.

² Block 1 $\chi^2(3) = 21.09$, $p < .001$, Cox & Snell $R^2 = .05$; Block 2 $\chi^2(17) = 167.69$, $p < .001$, Cox & Snell $R^2 = .33$.

What factors best predicted persistence?

- Students with higher **first term UC Merced GPAs** were more likely to return for a third term.
- Students with **uncertainty about their degree objective** (e.g., said they did not intend to earn a degree or were unsure) were less likely to return for a third term.
- Students who said they had **plans to leave UC Merced** (e.g., transfer before graduating) were less likely to return for a third term.

Limitations

This analysis has an important limitation - only 35% of new freshmen responded to the survey. While the sample tended to be demographically representative (e.g., first-generation status, race/ethnicity, etc.), females and students who performed better academically (i.e., had higher high school GPAs and first semester UCM end of term GPAs) were more likely to complete the survey, indicating that the results may best apply to females and higher academically performing students.

Appendix A: Survey Scales/Items and their Associations with Persistence to the Third Term

Each survey item and scale is described below in addition to their bivariate associations with persistence into the third term (defined as enrollment at UC Merced into the third term). Tables 1 and 2 summarize significant associations.

Uncertainty about Degree Objective

Students indicated “what is the highest degree you eventually intend to obtain”, with 19% indicating “unsure/none”, 19% “bachelors”, 28% “masters”, and 34% “doctoral.” Students who said they were “unsure” or who had no plans to obtain a degree were less likely to persist compared to students who had specific plans.

Feeling Connected to UC Merced

Students who said they felt more connected with UC Merced on a 1 (*very disconnected*) to 4 (*very connected*) scale were more likely to persist.

Academic Self-Efficacy

Students responded to 7 items (below) about their academic self-efficacy (e.g., how sure are you that you can succeed academically at UC Merced) on a 1 (*very unsure*) to 4 (*very sure*) scale, which were averaged such that higher scores indicated higher academic self-efficacy. Students tended to say they felt “somewhat” to “very” academically efficacious. The higher a student’s academic self-efficacy, the more likely s/he was to persist.

How sure are you that you can do each of the following:

1. Succeed academically at UC Merced
2. Do well on problems and tasks assigned in my courses
3. Do well on my most difficult course
4. Persevere even when I face academic challenges and obstacles
5. Improve my current skills and abilities
6. Find resources that will help me overcome academic challenges and obstacles (e.g., tutors, instructors, advisors)
7. Effectively use resources that will help me overcome academic challenges and obstacles (e.g., tutors, instructors, advisors)

Plans to Leave UC Merced, Get Involved, and Change Majors/Careers at UCM

Students indicated “how likely are you to” engage in several behaviors on a 1 (*very unlikely*) to 5 (*very likely*) scale.

Plans to Leave

Students responded to 3 items (below) about their plans to leave UCM (e.g., how likely are you to leave UCM at the end of this semester), which were averaged such that higher scores indicated a greater likelihood of leaving. Students tended to say they were “somewhat” to “very unlikely” to leave. The more likely students were to say they might leave, the less likely they were to persist.

1. Transfer to another college before graduating
2. Leave UC Merced at the end of this semester
3. Leave UC Merced at the end of this academic year

Plans to Get Involved

Students responded to 2 items (below) about their plans to get involved in research or an internship at UCM, which were averaged such that higher scores indicated a greater likelihood of getting involved. Students tended to say they were “unsure” to “somewhat likely” to get involved. The more likely students were to say they would get involved, the more likely they were to persist.

1. Participate in research activities with a faculty member at UC Merced
2. Participate in an internship at UC Merced

Plans to Change Majors/Careers

Students responded to 2 items (below) about their likelihood of changing majors or careers at UCM, which were averaged such that higher scores indicated a greater likelihood of changing majors/careers. Students tended to say they were “unsure” to “somewhat unlikely” to change majors/careers. The likelihood of changing majors/careers was not associated with persistence.

1. Change your major at UC Merced
2. Change your choice of career while at UC Merced

Use of Campus Resources

Students responded to 17 items (below) about the frequency of their use of campus resources. Neither the total number of unique resources used nor how often resources were used was associated with persistence. When use of campus resources was examined individually (*yes* or *no*), 2 were associated with outcomes of interest. Ever having **visited an instructor or teaching assistant** was positively associated with persistence, with 88% having done so. Ever having **visited the Students First Center** was negatively associated with persistence, with 60% having done so. A likely interpretation of this finding is that students who are struggling academically or in general are most likely to visit the Students First Center. Additionally, all significant associations were small such that they may not be meaningful.

1. Instructor or teaching assistant (office hour, appointment, etc.)
2. Workshops (study skills, time management, writing)
3. Free tutoring (courses, writing)
4. DARTS: Degree Attainment for Returning and Transfer Students
5. Peer Advisors
6. Peer Success Mentors
7. Academic Advisors
8. Disability Services
9. Counseling and Psychological Services
10. Health and Wellness Services
11. Residence Life Staff/programs
12. Career Services/Professional Advancement

13. STEM Resource Center
14. Students First Center
15. Library Services
16. Recreational programs (e.g., outdoor trips, intramural sports)
17. The Recreation Center

Academic and Personal Habits

Students indicated how often they engaged in 22 positive academic and personal habits (below), which were taken from advice given at the ASCEND conference, on a 1 (*not at all*) to 5 (*all the time*) scale. These questions formed 5 scales for which items were averaged with higher scores indicating that higher engagement in the behaviors in that category. **Engaging in effective study skills** (e.g., avoided distractions during study sessions), which students typically reported doing “occasionally” to “frequently,” was positively associated with persistence. **Engaging in healthy behaviors** (e.g., followed a regular sleep schedule), which students typically reported doing “rarely” to “occasionally,” was positively associated with persistence. **Engaging in extracurricular activities** (e.g., participated in major/academic-related clubs, organizations, or activities), which students typically reported doing “rarely” to “occasionally,” was positively associated with persistence. **Preparing for and attending classes** (e.g., turned in course assignments on time), which students typically reported doing “frequently” to “all the time,” was positively associated with persistence. However, **engaging in scheduling activities** (e.g., made a weekly schedule, including weekends, to help manage my time), which students typically reported doing “occasionally” to “frequently,” was not associated with persistence. Though largely significant, the magnitudes of these associations were quite small.

Engaging in effective study skills

1. Monitored course progress and made changes when needed
2. Allowed more study/work time for difficult classes and assignments
3. Engaged with material during study sessions (i.e., I didn’t just skim)
4. Avoided distractions during study sessions (e.g., texting friends, checking Facebook)
5. Reviewed material before and after class
6. Asked questions when I didn’t understand something
7. Set reasonable goals and expectations for myself
8. Followed a regular study schedule
9. Read my course syllabi

Engaging in healthy behaviors

10. Followed a regular eating schedule
11. Followed a regular exercise schedule
12. Ate healthy food
13. Followed a regular sleep schedule

Engaging in extracurricular activities

14. Got involved in organized activities outside the classroom (e.g., athletics, clubs, work)
15. Participated in major/academic-related clubs, organizations, or activities

16. Spent time with peers who support my academic success
17. Participated in a study group

Preparing for and attending classes

18. Turned in course assignments on time
19. Went to my classes
20. Went to my classes prepared (e.g., having read assignments)

Engaging in scheduling activities

21. Made a weekly schedule, including weekends, to help manage my time
22. Recorded my class deadlines

Academic Obstacles and Barriers

Students indicated how often 23 issues (below) had been obstacles to their coursework or academic success during their first semester on a 1 (*not at all*) to 5 (*all the time*) scale. These questions formed 6 scales for which items were averaged and indicated that the student more often experienced the issues in that category as obstacles. Only **adjustment/fit obstacles** (e.g., feeling out of place or like you just don't fit on campus) and **academic preparation/environment obstacles** (e.g., inadequate study skills) were negatively associated with persistence. The remaining scales, including **competing responsibility obstacles** (e.g., other competing responsibilities, e.g., athletics, clubs, internship), **coping with expectations obstacles** (e.g., being able to cope with expectations of parents and family), **expenses/transportation obstacles** (e.g., finding affordable student housing), and **weak spoken English/writing skills obstacles** (e.g., weak writing skills) were not associated with persistence. On average, students reported experiencing these obstacles "rarely" to "occasionally," with the exception of weak spoken English/writing skills obstacles, which were experienced "not at all" to "rarely." Though there were several significant associations, the magnitude tended to be quite small.

Adjustment/fit obstacles

1. Feeling out of place or like you just don't fit on campus
2. Second guessing whether UC Merced was the right choice for you
3. Feeling depressed, stressed, or upset
4. Difficulty making new friends at UC Merced
5. Being away from family and friends: being "homesick"

Academic preparation/environment obstacles

6. Inadequate study skills (e.g., knowing how to start, how to get help, organize material)
7. Poor study behaviors (e.g., wait until last minute, easily distracted, too much social time, too much web surfing)
8. Difficulty adjusting to college-level work (e.g., coursework, exams, papers)
9. Bad study environment (e.g., noisy roommate, poor Internet access, inadequate computer/software)
10. Poor library research skills
11. Weak math skills

12. Infrequent/poor quality feedback from instructors

Expenses/transportation obstacles

13. Finding affordable housing while a student at UC Merced

14. Paying for expenses

15. Transportation or parking issues

Competing responsibility obstacles

16. Other competing responsibilities (e.g., athletics, clubs, internship)

17. Competing job responsibilities (i.e., paid employment)

18. Competing family responsibilities

19. Personal difficulties with family, intimate relationships, or friends

Coping with expectations obstacles

20. Being able to cope with expectations of parents and family

21. Being able to cope with the values and expectations of friends when they differ from your own

Weak spoken English/writing skills obstacles

22. Weak writing skills

23. Weak spoken English skills

Attendance of Student Affairs Programs

Because Summer Orientation and ASCEND conference attendance were mandatory, with 91% and 94% of respondents, respectively, reporting they attended, attendance could not be used as a predictor in analyses. However, only 60% of students reported that they **attended at least one Weeks of Welcome (WOW) Event** such that attendance could be examined. However, WOW attendance was not associated with persistence.

Summary

Table 1 above summarizes the UC Merced academic factor and survey items/scales that were associated with persistence to the third term. Though many associations between survey responses and persistence were significant, many were quite small. Refer to Table 2 for reliability and descriptive information about the scales/items and results of all bivariate correlation analyses. The “Relationship with Persistence to Third Term” column, in particular, displays the bivariate correlations between each academic factor and survey item/scale – positive values indicate a positive association with persistence (more likely to be retained) and negative values a negative association with persistence (more likely to leave).

Table 2. UC Merced Academic Factor and NSS Scale Reliabilities, Descriptive Information, and Results of Bivariate Correlation Analyses

	Scale Reliability	Percentage OR Average (SD) & Scale	Relationship with Persistence to Third Term
UC Merced Academic Factors			
Poor First Term (Fall 2014) Midterm Grade ^a	--	40.4% yes	r(535) = -.25, p < .001
First Term (Fall 2014) GPA	--	2.73 (.76)	r(535) = .50, p < .001
Survey Scale/Items			
Uncertainty about degree objective	--	19.4% yes	r(535) = -.11, p < .01
Feeling connected to UCM	--	2.86 (.66) 1-4 scale	r(534) = .14, p = .001
Academic self-efficacy	7 items; $\alpha = .90$	3.27 (.58) 1-4 scale	r(523) = .26, p < .001
Plans to leave UCM	3 items; $\alpha = .77$	1.87 (.89) 1-5 scale	r(522) = -.29, p < .001
Likelihood of to getting involved at UCM	2 items; r(522) = .65, p < .001	3.76 (.89) 1-5 scale	r(522) = .14, p < .01
Resource use: visited instructor or TA	--	88.1% yes	r(510) = .13, p < .01
Resource use: visited Students First Center	--	59.8% yes	r(505) = -.09, p < .05
Habits: engaging in effective study skills	9 items; $\alpha = .87$	3.50 (.73) 1-5 scale	r(500) = .12, p = .01
Habits: engaging in healthy behaviors	4 items; $\alpha = .78$	2.84 (.89) 1-5 scale	r(499) = .12, p < .01
Habits: engaging in extracurricular activities	4 items; $\alpha = .71$	2.79 (.98) 1-5 scale	r(500) = .09, p < .04
Habits: preparing for and attending classes	3 items; $\alpha = .68$	4.41 (.52) 1-5 scale	r(500) = .20, p < .001
Obstacles: adjustment/fit	5 items; $\alpha = .83$	2.54 (1.02) 1-5 scale	r(479) = -.12, p = .01
Obstacles: academic preparation/environment	7 items; $\alpha = .79$	2.62 (.77) 1-5 scale	r(480) = -.14, p < .01

Note: dashed lines denote a single item/indicator such that scale reliability was not applicable. ^a defined as receiving at least one D or F grade at midterm (0 = no, 1 = yes).

Appendix B: Demographic/Background Factors and their Associations with Persistence to the Third Term

In addition to examining associations among UCM academic factors, survey items/scales, and persistence, demographic and background factors were also considered and are shown in Table 3.

Table 3: Summary of Demographic/Background Factor Associations with Persistence to the Third Term

Demographic/Background Factors	Relationship with Persistence to Third Term
On or off-campus housing	--
Gender	--
Race	--
Pell Eligible/Low Income	--
First Generation	Not first gen > First gen
English Only as first language	--
School first semester	--
Enrolled in at least 15 credits first semester	--
SAT-R total	Higher Persistence
High School GPA	Higher Persistence
AWPE score	--

Note: dashed lines indicate no association. First Generation is defined as neither parent having earned a Bachelor's degree.

Appendix C: Results of Regression Analyses Predicting Persistence to the Third Term

Table 4. Final Logistic Regression Model Predicting Persistence (Third Term Enrollment)

Block 1: Demographic/Background Factors	Odds Ratio and Significance
First Generation	.57, p = .44
SAT-R total	1.00, p = .67
High School GPA	.40, p = .36
Block 2: UC Merced Academic Factors and Survey Factors	
Poor First Term (Fall 2014) Midterm Grade ^a	.92, p = .90
First Term (Fall 2014) GPA ^b	22.58, p < .001
Uncertainty about degree objective	.23, p = .01
Feel connected with UCM	1.50, p = .33
Academic self-efficacy	1.81, p = .18
Plans to leave UCM	.38, p < .001
Likelihood of getting involved at UCM	1.22, p = .47
Resource use: visited instructor or TA	3.74, p = .06
Resource use: visited Students First Center	.816, p = .73
Habits: engaging in effective study skills	.52, p = .16
Habits: engaging in healthy behaviors	1.07, p = .86
Habits: engaging in extracurricular activities	1.04, p = .90
Habits: preparing for and attending classes	.96, p = .95
Obstacles: adjustment/fit ^c	.40, p = .87

Note: bolded text indicates predictors that attained statistical significance. ^a defined as receiving at least one D or F grade at midterm (0 = no, 1 = yes). ^b Though poor first term midterm grade and first term GPA were moderately correlated, the patterns of significance in the model remained the same when both were included, and so both variables were retained. ^c Though both adjustment/fit obstacles and academic preparation/environment obstacles were associated with persistence at the bivariate level (Tables 1 and 2), due to multicollinearity only one could be included in the model. The pattern of findings was the same regardless of which variable was included in the model – neither were significant predictors. First Generation is defined as neither parent having earned a Bachelor’s degree.