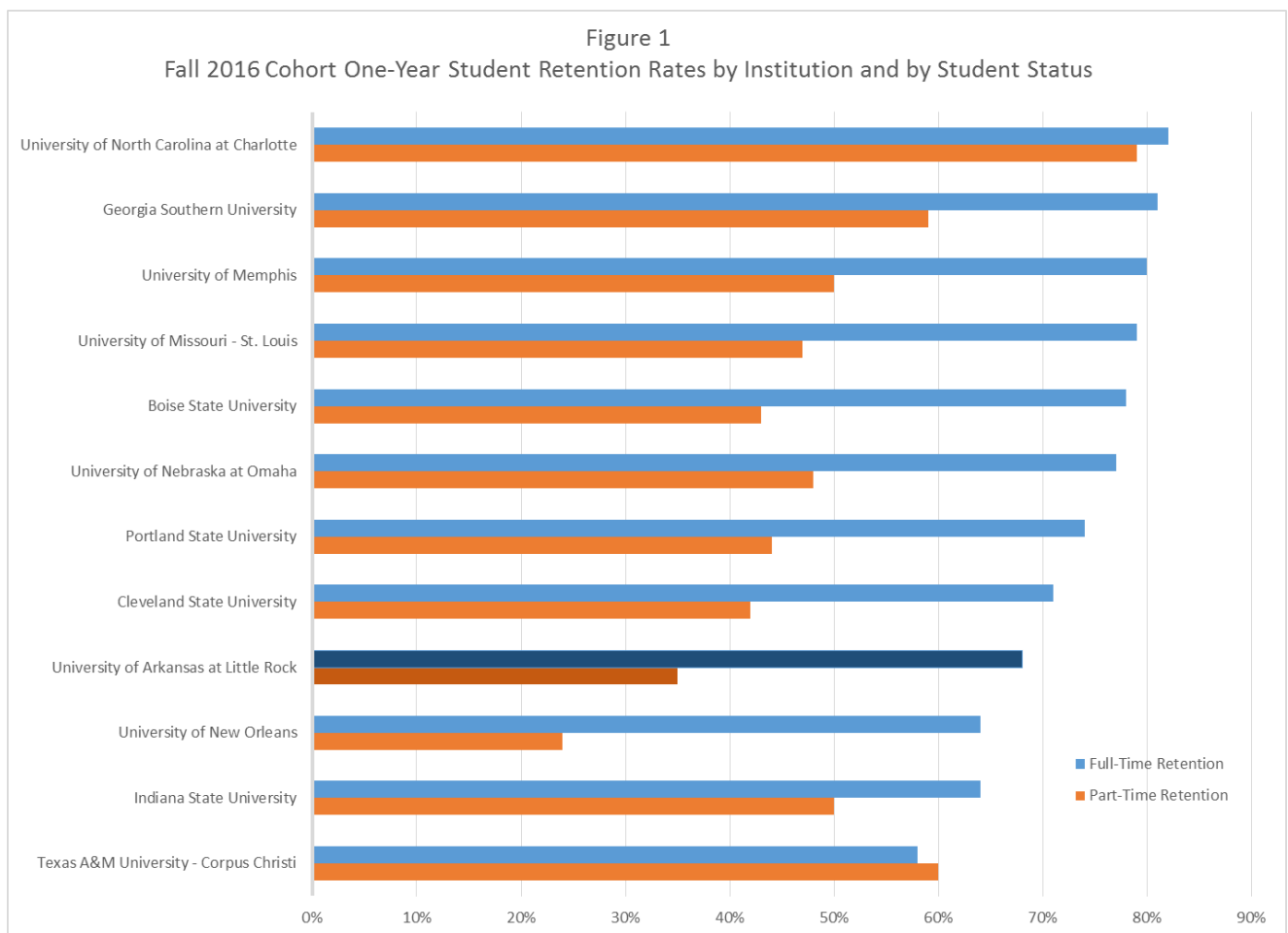


Report to the Faculty Senate
***Ad Hoc* Retention Committee**

July 23, 2019

Background

Enrollment at University of Arkansas at Little Rock has fallen from a peak of 13,176 students in fall 2010 to 10,515 students in fall 2018, a decline of twenty percent. Given this environment, it has become more important that UA Little Rock seek ways of improving student retention. Compared to its peer institutions, UA Little Rock tends to lag behind in student retention. Figure 1 shows the one-year student retention rates for the Fall 2016 cohort for UA Little Rock and eleven of its peer institutions. UA Little Rock ranks in the bottom half in full-time student retention with a rate of 68%, compared to an 82% full-time student retention rate at the University of North Carolina at Charlotte. And UA Little Rock ranks near the bottom in its one-year part-time student retention rate, which for the Fall 2016 cohort was 35% (compared to 79% for UNC-Charlotte). This suggests that significant room for improvement exists in UA Little Rock's student retention.



In October 2018, the Faculty Senate appointed an *ad hoc* committee on student retention at UA Little Rock. Our members include both faculty and staff in academic and student affairs, and we have had active participation and support from Daryl Rice on behalf of academic advising,

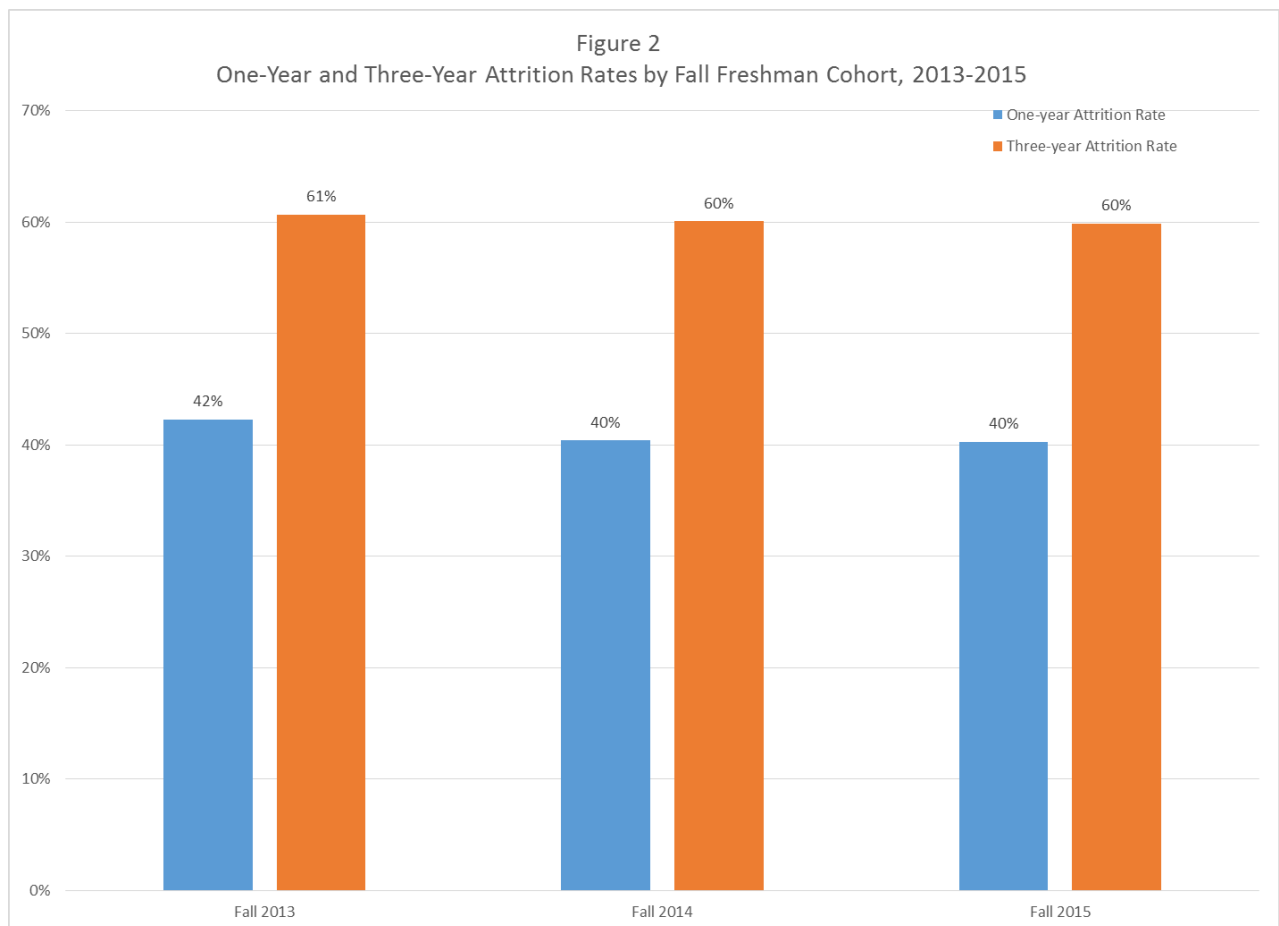
Richard Harper in Student Affairs, and Cody Decker and Blane Stroud in the Office of Institutional Research, among many others. Appendix A lists the committee's membership. The committee's charge is to:

- Review the level of coordination between academic and non-academic units to ensure that programs and services (i.e., first-year experience, centralized advising, early warning system, midterm grades, and college-level initiatives) are meeting the needs of students and faculty;
- Review student retention models in the college student retention literature as well as retention initiatives at universities with similar student composition;
- Review current legislation and policies related to student retention and completion for gaps, inconsistencies, or outdated language;
- Collect student data from a broad cross-section of students through focus groups, forums, or surveys to identify processes and activities (i.e. financial aid workshops, academic advising, faculty interaction) that support students with aim of increasing student retention towards completion
- Collect data from full-time and part-time faculty to identify processes and activities that support instruction, advising, and student retention towards completion.

This report aims to inform the Senate about the nature and scope of student attrition at UA Little Rock over the past 5 years; report on the work of student retention and student success committees at UA Little Rock; and make recommendations for Senate action.

Which Students Are Most Vulnerable to Attrition?

Student retention refers to the number of students at UA Little Rock in a given cohort who both did not graduate and who are still enrolled in courses at UA Little Rock. A one-year retention rate, then, would refer to the percentage of students in a given cohort who did not graduate and who were still taking classes at UA Little Rock in the following academic year. Conversely, student attrition refers to the number of students in a given cohort who did not graduate and who are no longer enrolled in courses at UA Little Rock. Student persistence refers to the number of students in a given cohort who either graduated or who are still taking courses at UA Little Rock. The analysis we carry out primarily focuses on student attrition, i.e. numbers of students who leave UA Little Rock without graduating.

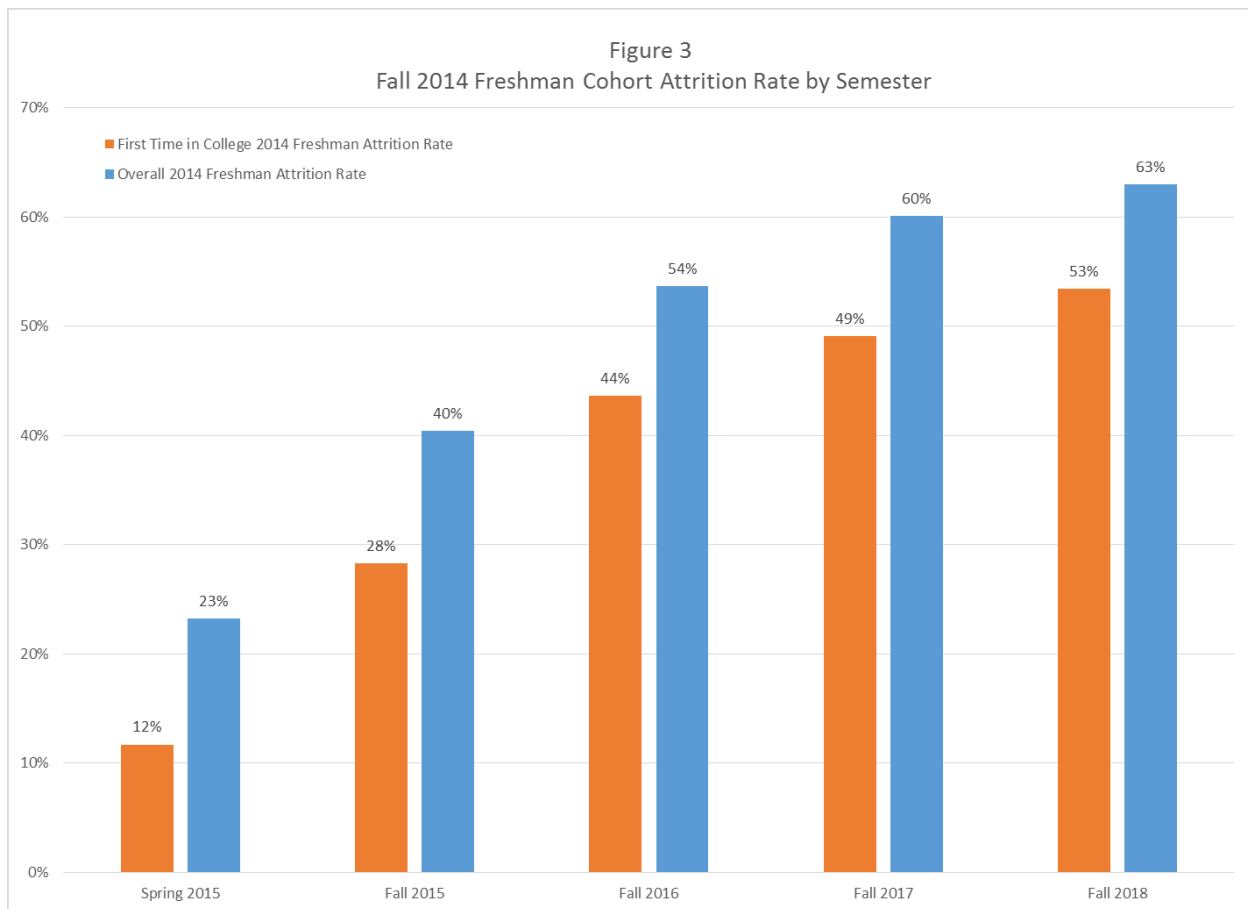


OIR provided descriptive data on student retention and attrition since 2013 across a number of dimensions, including:

- Student cohort
- Student level
- Age

- Gender
- Race and ethnicity
- Unmet financial need
- Academic performance

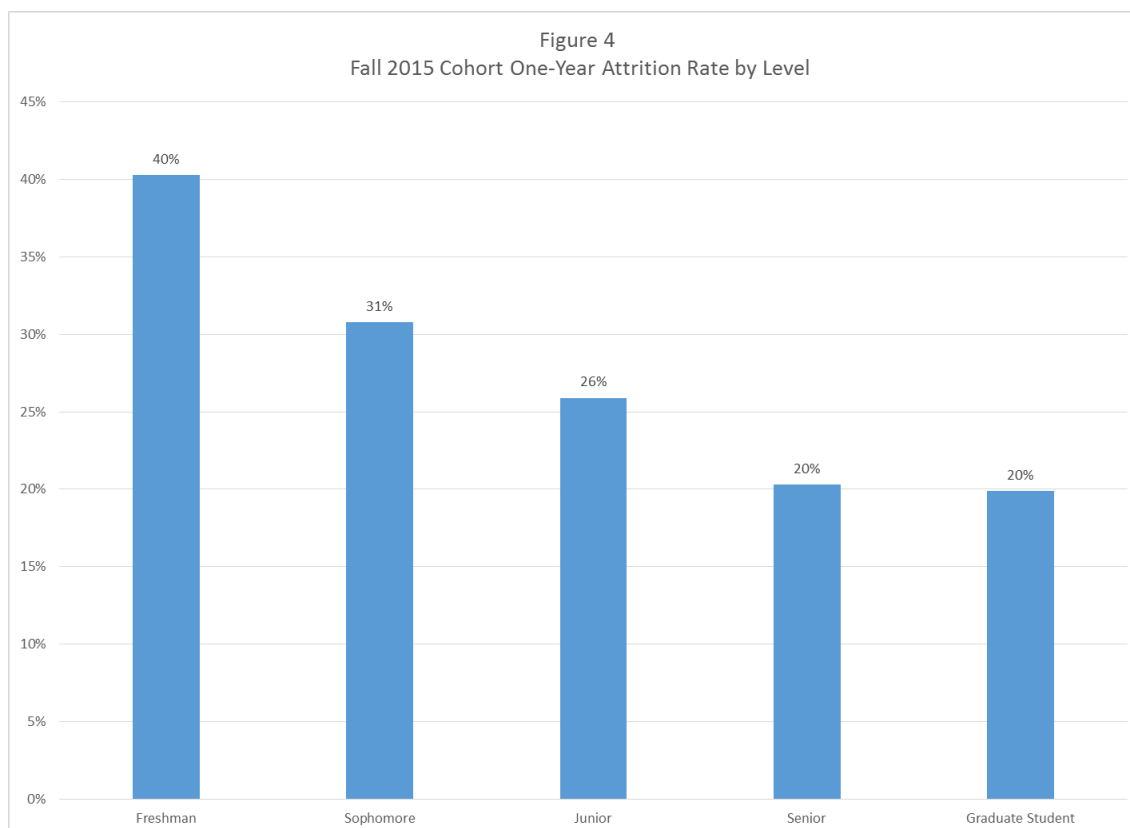
Figure 2 reports on one-year and three-year attrition rates for the freshman cohorts in beginning in Fall 2013, 2014, and 2015. The one-year attrition rate represents the percentage of the freshman cohort that had not graduated and was still taking courses at UA Little Rock the following fall, and the three-year attrition rate represents the percentage of the freshman cohort that had not graduated and was still taking courses at UA Little Rock three years later (e.g. for fall 2013, those still taking courses at UA Little Rock in fall 2016). The data first suggest that attrition rates are largely unchanged across these three cohorts. The one-year freshman attrition rate for the Fall 2013 cohort was 42%, while that for the Fall 2015 cohort was 40%. Similar patterns hold for three-year attrition rates. Second, the data suggest that attrition is greater in the first year of a freshman's experience than in the following two years. About two-thirds of the freshmen who will drop out in their first three years will do so in their first year. This suggests that attrition is primarily a phenomenon that occurs in a student's first year at UA Little Rock.



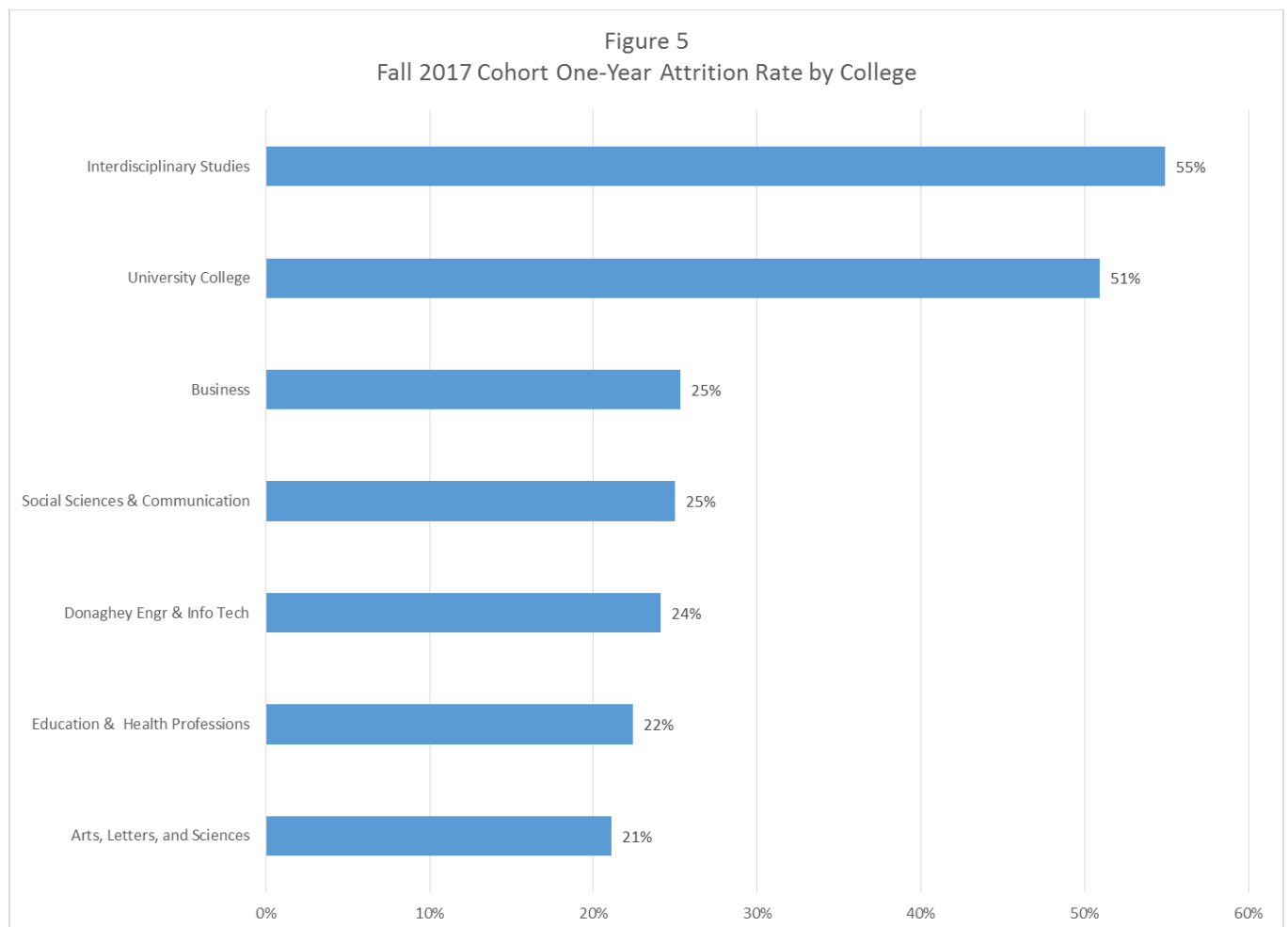
Another relevant dimension to student attrition is the point in the student lifecycle at which students tend to leave UA Little Rock. To examine this, Figure 3 shows attrition rate for the Fall 2014 freshman cohort by semester, both for first-time-in-college freshmen and for the

entire freshman cohort that semester. First, the figure suggests that first-time freshmen are about 10 percentage points less likely to drop out than the freshmen cohort as a whole. This appears to be the case at every point, including attrition in the first semester. This suggests that first-time in college freshmen are less vulnerable to attrition than other freshmen in their first semester, though after this may be as vulnerable as other UA Little Rock students to dropping out. Second, figure 2 suggests that the vast majority of entering freshmen who will drop out will do so in the first two years at UA Little Rock. In particular, nearly one-quarter of freshmen beginning Fall 2014 did not re-enroll for their second semester, and an additional 17 percent did not re-enroll for Fall 2015. Fourteen percent left by the start of Fall 2016. This affirms that students are most vulnerable to attrition in their first two years at UA Little Rock.

An additional way to look at attrition during a student's tenure at UA Little Rock is to compare attrition rates by student level. Figure 4 reports student one-year attrition by level for the Fall 2015 cohort. As one might expect, juniors, seniors and graduate students were less vulnerable to attrition. Only 20% of seniors and graduate students stopped taking classes by Fall 2016 without having completed their degree. But 40% of freshmen and 31% of sophomores enrolled in Fall 2015 had stopped taking classes at UA Little Rock by Fall 2016. This is consistent with what we might expect. Students who are most vulnerable to attrition tend to leave earlier, leaving more resilient students at higher levels. At the same time, the costs of completing the degree become lower as students rise in level, providing more incentive to complete the degree. This suggests again that freshmen and, to a lesser extent, sophomores are most vulnerable to attrition.

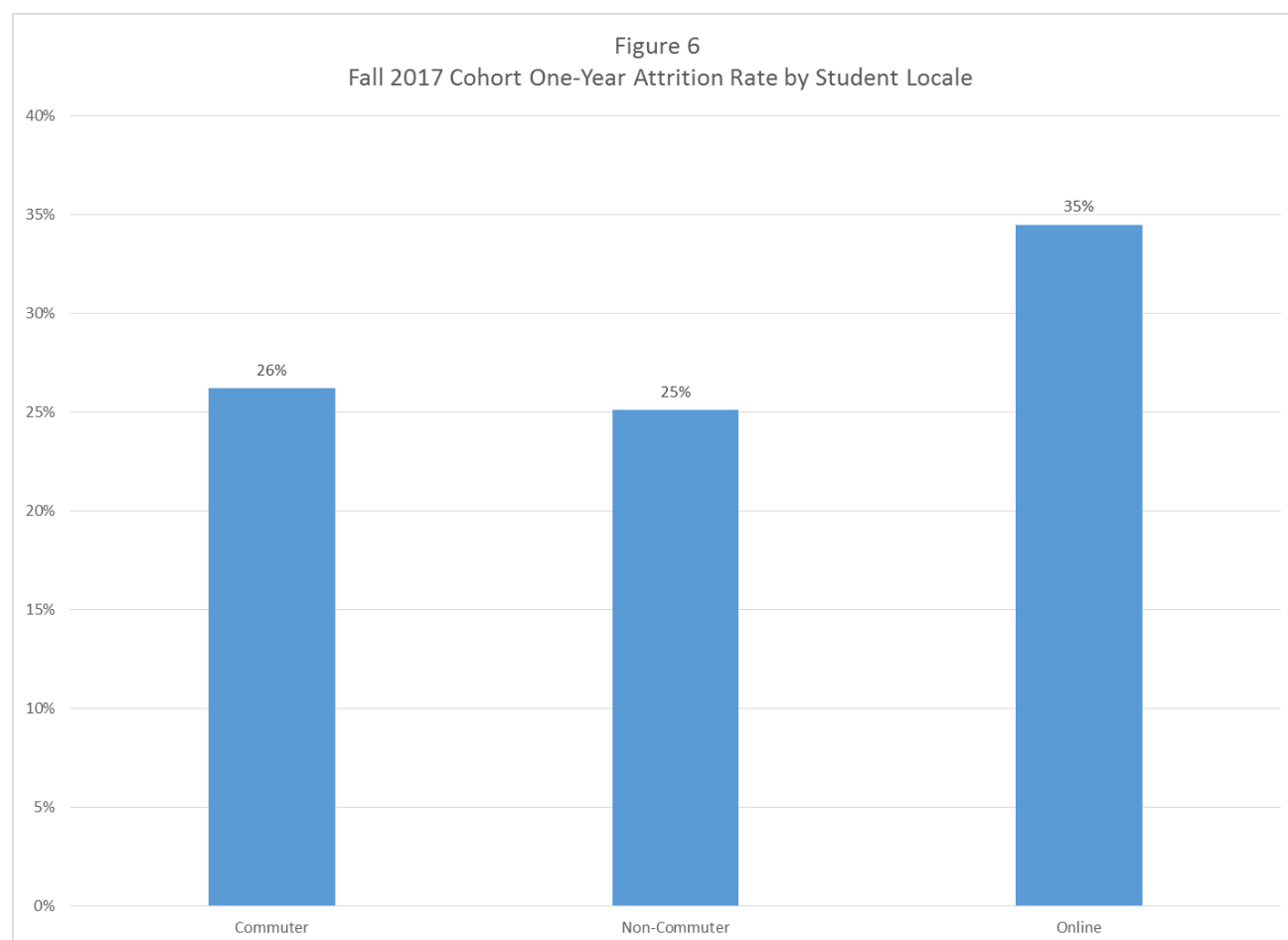


College and academic programs at UA Little Rock play a key role in providing academic support for students and thus may be in a position to address student attrition. Consequently, it is important to recognize differences in attrition across the colleges. Figure 5 describes one-year student attrition rate by college for the Fall 2017 cohort. In general, the figure suggests that differences in attrition rates are relatively small across the main academic colleges (Arts, Letters, and Sciences; Business; Education and Health Professions; Engineering, and Social Sciences and Communication). Since most students declare a major and identify with a college in their sophomore or junior years, it is not surprising that the attrition rates are lower in these colleges than in University College, the home for freshmen and students who have yet to declare a major. Notably though, the attrition rate for students in interdisciplinary studies is comparable to that for freshmen and sophomores. It should be noted that interdisciplinary studies includes a small number of students (95 for the Fall 2017 cohort).



Another factor related to attrition is student locale, i.e. whether a student is local and commuting to campus; lives on-campus; or is an online student. Figure 6 illustrates differences in the one-year student attrition rate for the Fall 2017 cohort by student locale. Attrition rates for

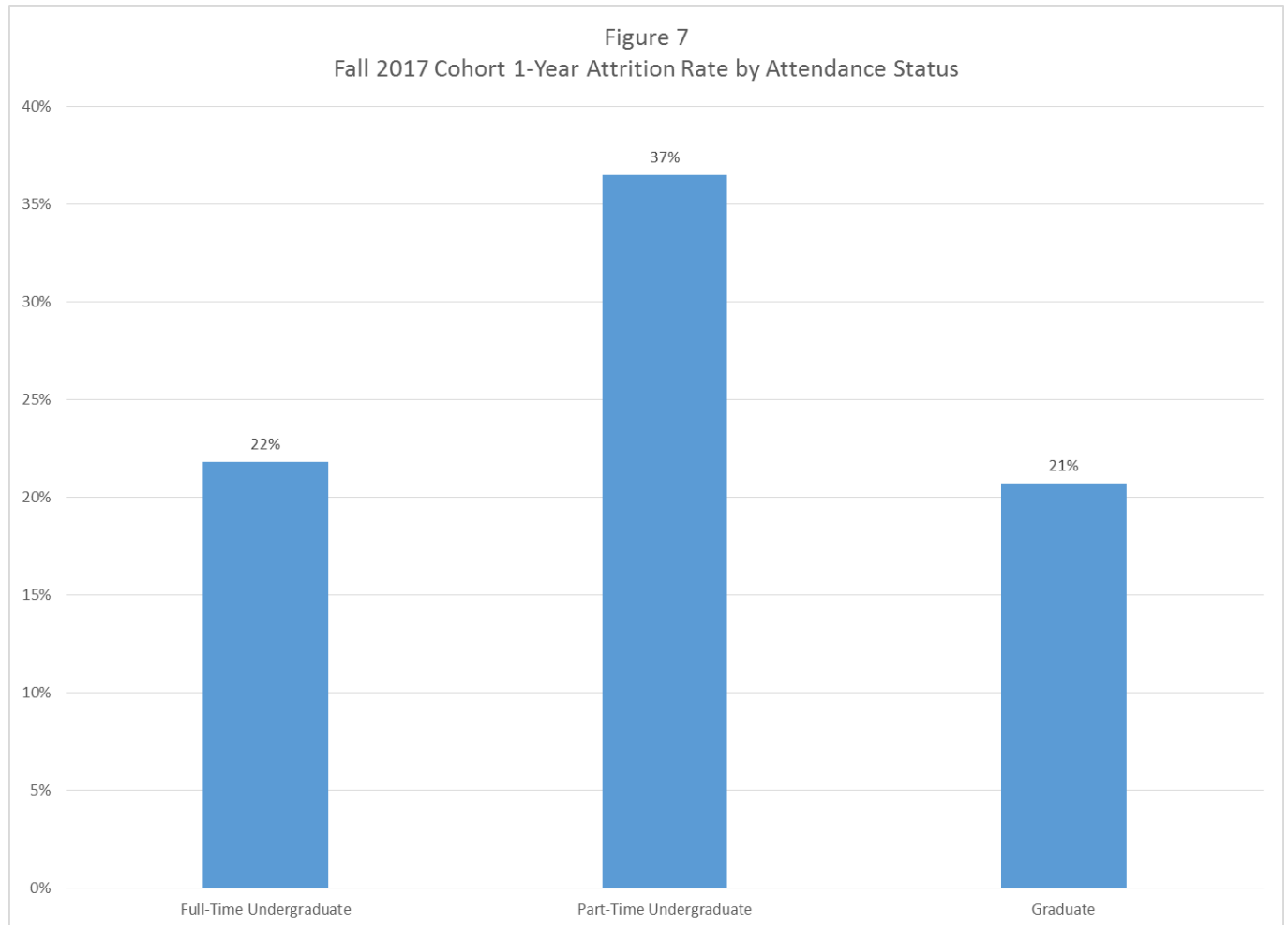
commuter and non-commuter students are similar (about 25% did not graduate and did not enroll in Fall 2018). The attrition rate for online students, however, is significantly higher at 35%.



In addition, student attendance status, i.e. whether a student attends full-time or part-time, is associated with attrition. Figure 7 reports one-year attrition rates for the fall 2017 cohort by attendance status. Notably, part-time undergraduate students had a significantly higher attrition rate (37%) than did full-time undergraduate students (22%) and graduate students (21%). This could be the case if students who are likely to transfer institutions at some point in the future are also more likely to take classes part-time.

Beyond a student's academic program and cohort, his or her demographic and socioeconomic status may affect attrition. Students of color, lower-income students, and first-generation students may be more vulnerable to college attrition. To measure this, figure 8 compares one-year attrition rates by race and ethnicity for the Fall 2017 cohort. This figure also includes the attrition rate for international students. Note that the categories used in this figure are not mutually exclusive. The chart indicates that African-American and Native American students have the highest attrition rates (32% and 31%, respectively). The attrition rates for White, Latino, and students of more than one race are somewhat lower than this, about 25%.

Attrition for Asian students is lowest, at 14%. Attrition for international students is about 16%. These results suggest, then, that significant racial and ethnic differences exist in student attrition.



Moreover, gender inequalities may contribute to student vulnerability to attrition. To examine this, Figure 9 compares one-year attrition rates by gender for the Fall 2017 cohort. The figure suggests that male and female students are equally vulnerable to attrition, each with an average attrition rate of 26%.

Figure 10 compares one-year attrition rates for the Fall 2017 cohort by age. Consistent with what we might expect, students under 20 years old (and thus disproportionately likely to be freshmen and sophomores) had a higher attrition rate (30%) than did students 20-24 (22%). The chart also suggests that attrition rates for students over 60 are somewhat higher than other age categories (33%). This could be that for many students in this category, a university degree is aspirational or recreational rather than for career advancement and so these students are less resilient than others to disruption to studies.

Figure 8
Fall 2017 Cohort One-Year Attrition Rate by Race, Ethnicity, and Nativity*

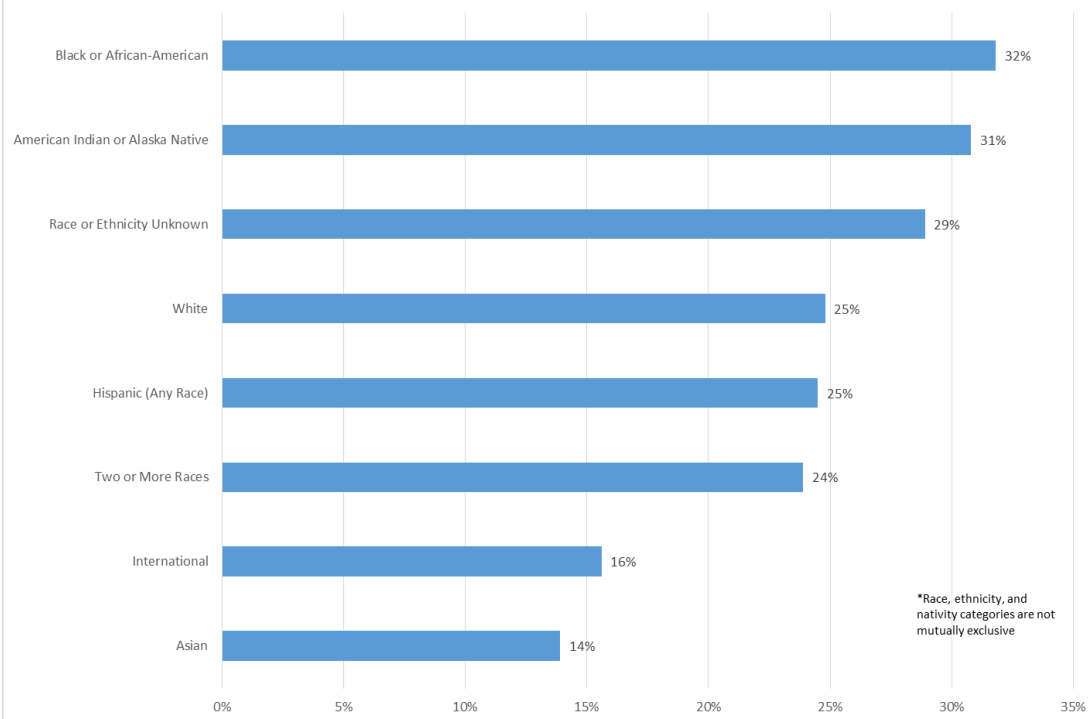
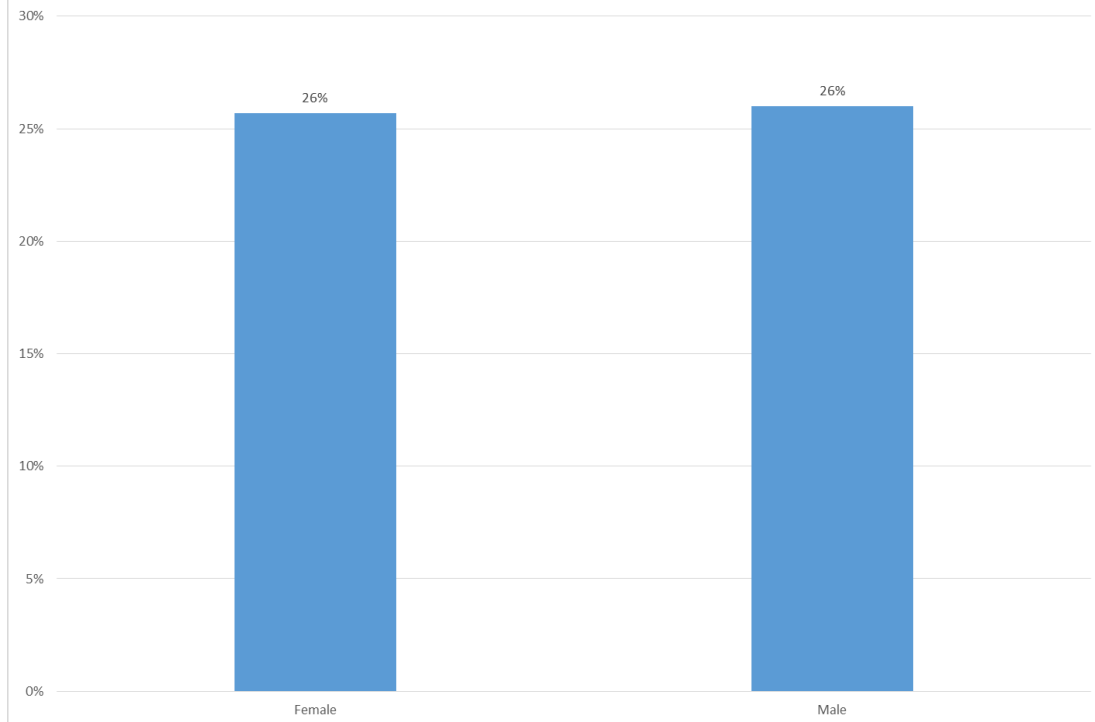
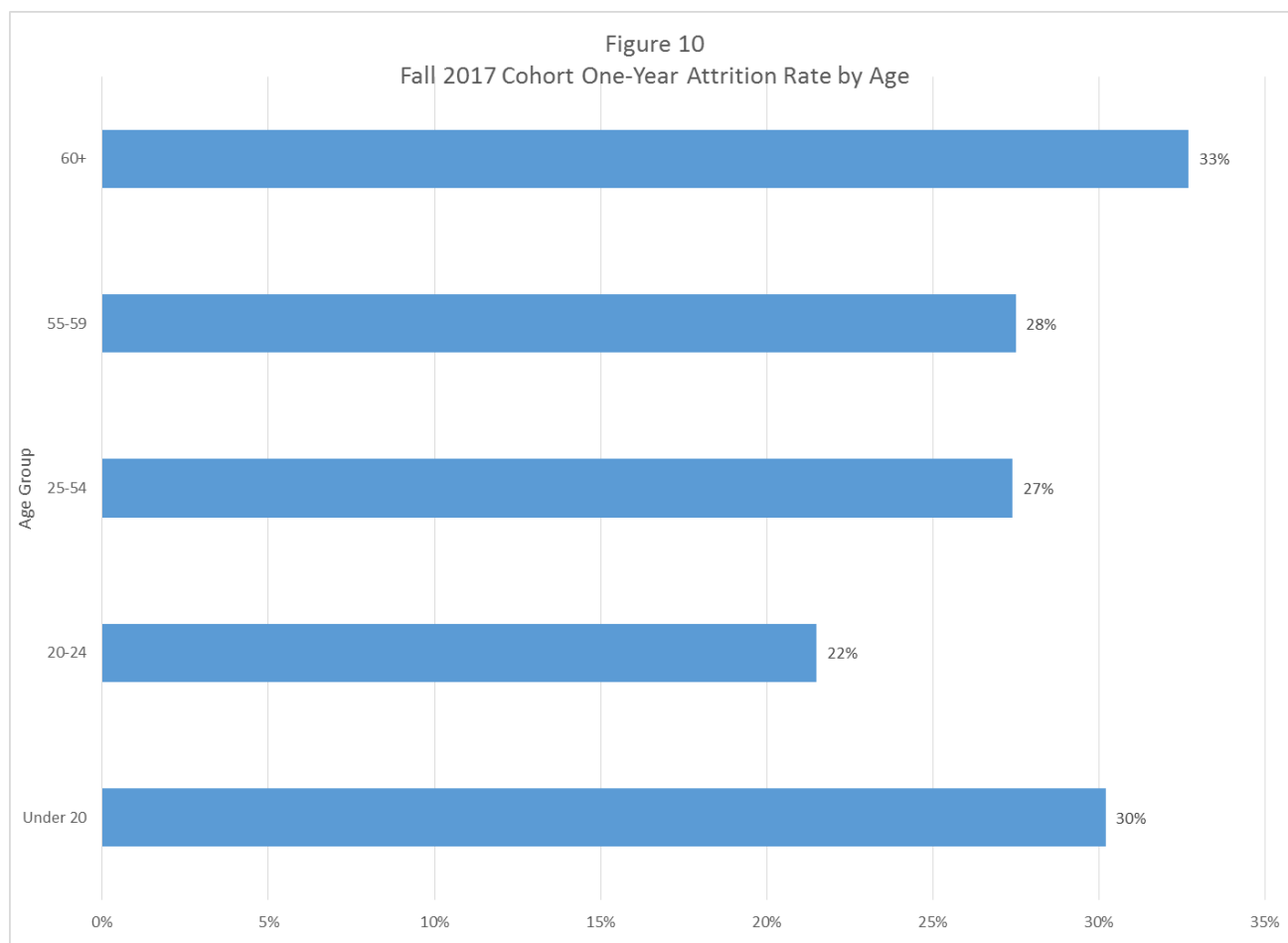


Figure 9
Fall 2017 Cohort One-Year Attrition Rate by Gender

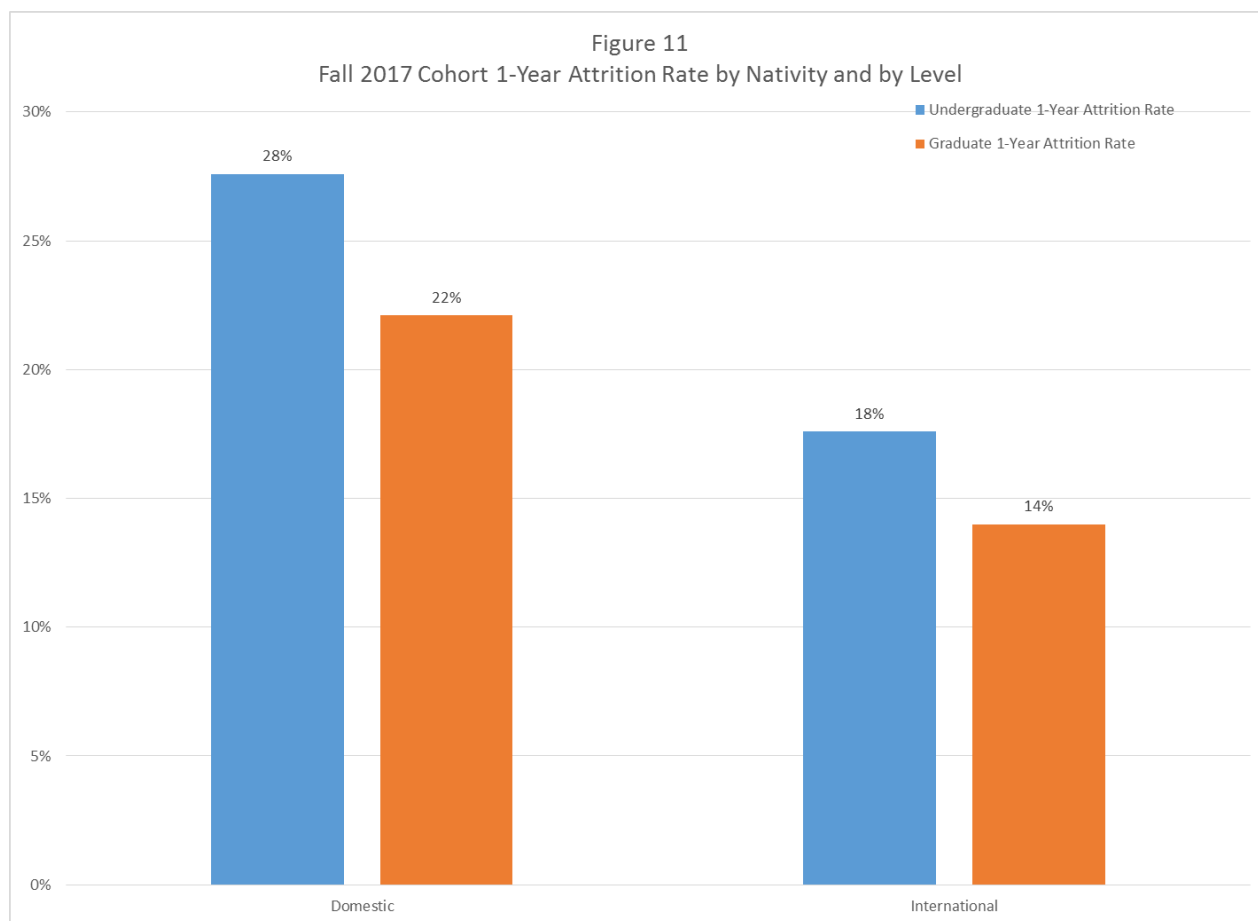




Nativity represents another significant way in which students may differ in their vulnerability to attrition. Figure 11 compares one-year attrition rates for the fall 2017 cohort for domestic and international students, for graduate and for undergraduate students. Graduate students in general have lower attrition rates than undergraduate students. For example, the attrition rate for domestic graduate students is 22%, compared to 28% for undergraduate students. Moreover, in general, international students have lower attrition than native students. For instance, international undergraduate students have an attrition rate of 18%, compared to 28% for native undergraduate students. Domestic undergraduate students, then, are more vulnerable to attrition than others.

To protect student privacy, the OIR data include no direct measures of student income. But the data do include a measure of student unmet financial need to meet college expenses, as determined by student responses to the Free Application for Federal Student Aid. Figure 12 reports one-year attrition rates for the fall 2017 cohort by unmet financial need. The data suggest that student attrition rate is about 20% for students with no unmet need or unmet need under \$5000. Students with unmet need between \$10,000 and \$20,000 had the highest level of attrition: about one-third of these students did not enroll the following year. Oddly, attrition rates among

those with more than \$25,000 were comparable to those with no unmet financial need, though it should be noted this is a small number of students (20 in the fall 2017 cohort).



Perhaps the cause most proximate to attrition is student academic performance. Students who fall into academic probation are particularly likely to lose access to federal financial aid and thus to leave the university. Moreover, work and family difficulties that result in academic problems may themselves create circumstances where a student must withdraw from school. Figure 13 reports one-year attrition rates for the fall 2015, fall 2016, and fall 2017 cohorts by academic status. As expected, students on academic probation (GPA < 2.0) were at much higher risk for dropping out than were students not on academic probation (about 80% in each year compared to 21%).

Figure 12
Fall 2017 Cohort 1-year Attrition Rate by Unmet Financial Need

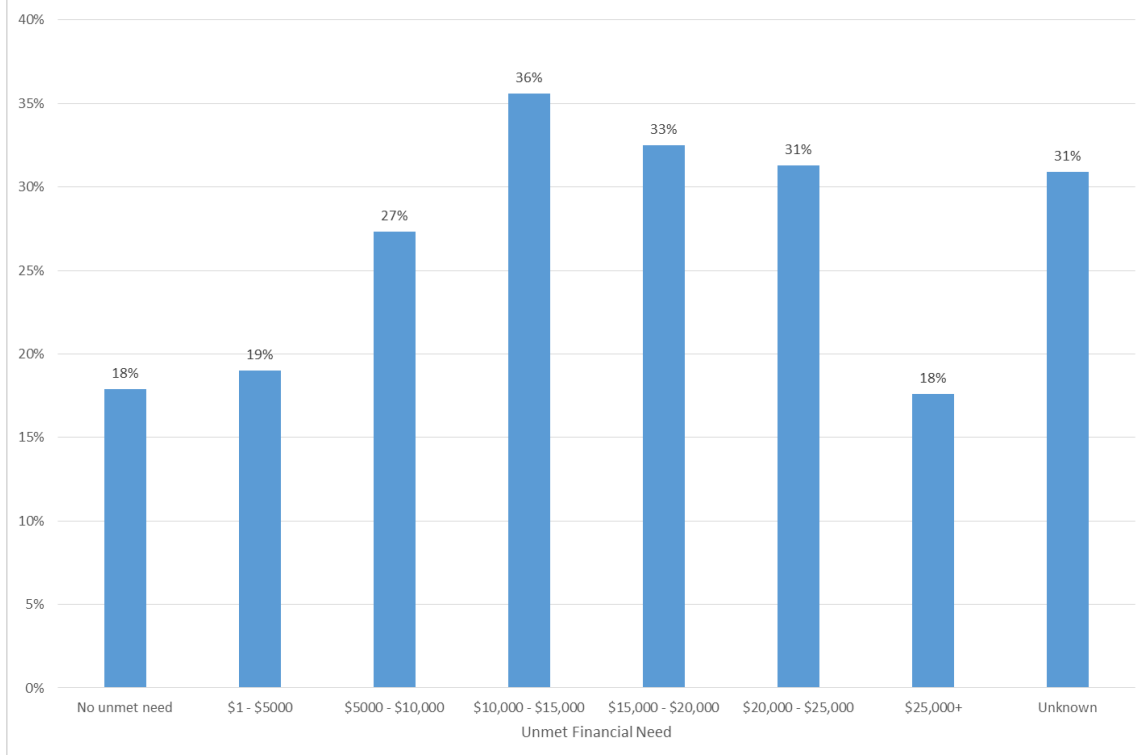
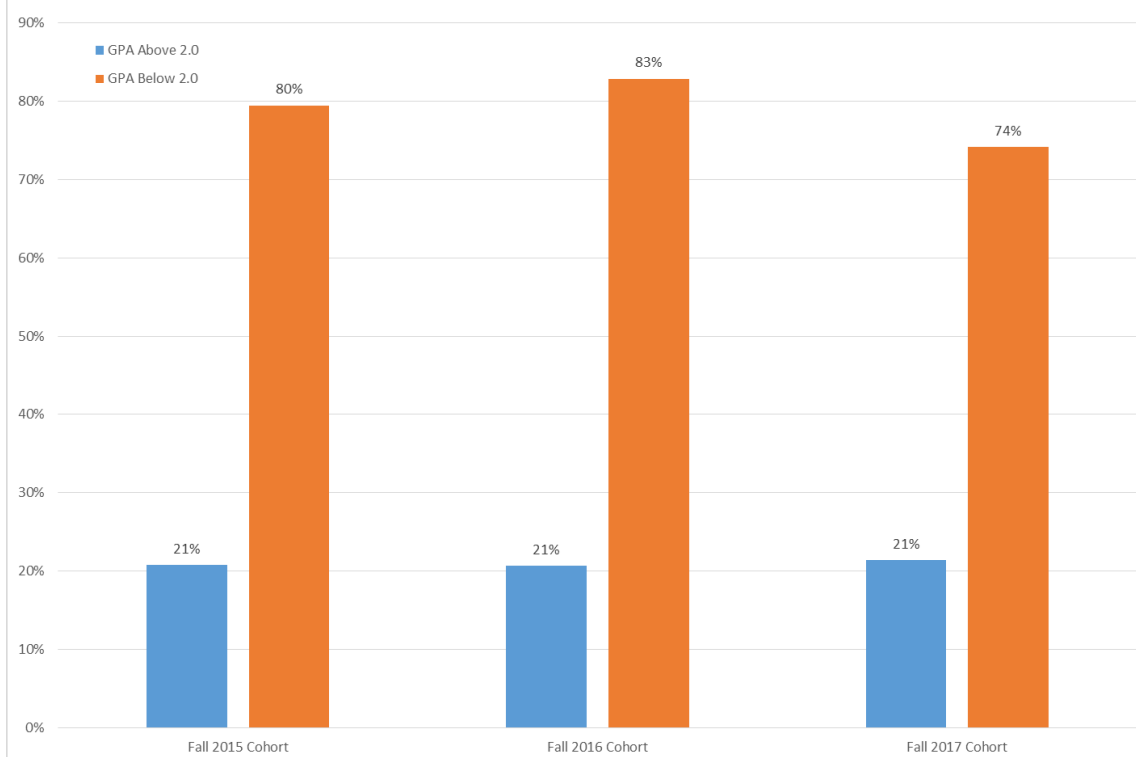


Figure 13
One-Year Attrition Rate by Academic Status and Cohort



Overall, the descriptive data suggest that some students are more vulnerable to attrition than others:

- 1) Freshmen** (and to a lesser extent, sophomores): 63% of the fall 2014 freshman cohort had left UA Little Rock without a degree four years later (Fall 2018). Most of that loss (two thirds) happened in the first year (40% of the 2014 fall freshman cohort was gone by fall 2015). Another 14% were gone by Fall 2016 (end of sophomore year)
- 2) Online students:** One-year attrition rate is 35%, compared to 25% for face to face students
- 3) Black and American Indian students:** One-year attrition rate is 32%, compared to 25% for white and Hispanic students
- 4) Students with unmet financial need greater than \$10,000:** One-year attrition is 36% for those with \$10,000 or more, compared to 19% for this under \$5000 in unmet need).
- 5) Part-time undergraduate students:** One-year attrition rate is 37% for part-time, compared to about 22% for full time undergraduate and graduate students.
- 6) Students with poor academic performance:** For students with GPA < 2.0, one-year attrition is 80%, compared to 20% for those with GPA > 2.0.

The general picture suggests that our problems in retention are primarily with freshmen, online, and part-time students. These students may be more vulnerable to poor academic performance and thus withdrawal from UA Little Rock.

Conversely, some students seem less vulnerable to attrition than others:

- 1) Graduate students:** One-year attrition is about 20%, relatively low compared to other parts of the student population.
- 2) Seniors:** This is perhaps not surprising. Less resilient students will drop out earlier, and as graduation is closer the costs for finishing the degree are smaller. Attrition rates for seniors are nearly the same as for graduate students.
- 3) Students in a major within an academic college:** One-year attrition rates did not vary much for students who were in one of the 5 programmatic colleges (21% for CALS, 25% for business and CSSC). These students are generally not freshmen.
- 4) International students:** One-year attrition rate of 22% for undergraduate international students, compared to 28% for undergraduate domestic students.

5) Asian students: One-year attrition rate of 14%, compared to 25% for white students and Hispanic students.

6) First time in college students: First-year attrition rate is 28%, compared to 40% for freshmen overall

7) Students with unmet financial need under \$5000: Attrition rate of 19%, compared to 36% for students with unmet financial need between \$10,000 and \$15,000.

8) Full-time students: Attrition rate of 22% compared to 37% for part-time students

9) Students with GPA > 2.0: Attrition rate of 21%, compared to 74% for students with GPA below 2.0.

We must be careful about drawing causal inference from these observations since factors such as student level, age, race, financial need, academic performance, online-status, and part-time vs. full-time status are likely to be correlated with each other. In the next section, we consider two sources of data to gain insight into the reasons why students leave UA Little Rock before completing their degrees. First, we summarize responses from two surveys of non-returning students, conducted in Fall 2013 and Fall 2018. Then, we analyze student-level retention and attrition data for Fall 2011 through Spring 2018. Both sets of analyses suggest that student academic performance is the most immediate factor contributing to student attrition, with factors related to socio-economic status, modality, and attendance status contributing directly and indirectly to attrition.

Reasons Students Give for Leaving UA Little Rock

Some insight into student attrition might be gained by asking non-returning students who did not graduate why they left. With this in mind, UA Little Rock's Survey Research Center carried out surveys of non-returning students in fall 2013 and fall 2018. The fall 2013 survey interviewed 804 students out of 2013 students identified as students who had attended UA Little Rock in fall 2012 or spring 2013, but had not graduated and had not enrolled in fall 2013. The study had a response rate of 41%, and a cooperation rate (people who participated if the SRC were able to reach them) of 81%. Of the 804 students contacted, 726 indicated they had left UA Little Rock before accomplishing their goal for enrolling. The majority of these students (59%) indicated that they planned to re-enroll in the future; an additional 17% indicated they were unsure if they would re-enroll.

In addition, these students were asked an open-ended question about the single most important reason why they did not re-enroll. The most commonly cited reasons related to costs or funding (23%) and/or to financial aid (10%); personal (16%) or health-related reasons (11%); or employment-related reasons (15%). Far fewer students cited complaints related quality of education or services at UA Little Rock: 6% indicated they transferred because they were not happy at UALR, and another 4% indicated that "problems with university processes" were a factor. The Fall 2013 report is included as Appendix B.

UA Little Rock's Survey Research Center conducted a similar survey of non-returning students in fall 2018. The survey interviewed 240 out of 854 students who had enrolled at UA Little Rock in fall 2017 or spring 2018 but did not graduate and did not re-enroll in fall 2018. These students were also asked to an open-ended question about the single most important reason why they did not re-enroll. The SRC's report does not categorize these reasons, but a review of the responses indicates that, as in 2013, the most commonly cited reasons for not re-enrolling are related to costs and to financial aid. Some representative reasons given include:

I am currently working a full time job as well as attending school which affected my GPA and in turn led to me losing my scholarships. I'm presently working to save enough money to retake the classes and improve my GPA to get my scholarships reinstated.

I did not have financial aid and waited to [sic] late to apply for scholarships

I had a baby so I needed to be closer to her so I tranfred to anotheerr [sic] school

I'm in the military, so to enroll I had to have a certain amount of time on my contract to enroll in classes, and I didn't have that time.

There's a personal situation going on. Not able to enroll this semester.

As in 2013, far fewer students cite reasons related to quality of education or services as the most important reason for not re-enrolling. The 2018 report is included as Appendix C, and a list of the responses given to the most important reason for not re-enrolling question is included as Appendix D.

Contributing Factors to Student Attrition at UA Little Rock

The descriptive data provided by OIR above highlights some important student characteristics associated with vulnerability to attrition. Notably, freshmen and sophomores, online and part-time students, Black and American Indian students, and students having academic difficulties are significantly more likely to leave UA Little Rock before completing their degrees than others. At the same time, it is important to recognize that factors such as student race and ethnicity and socio-economic status are themselves associated with attendance status, modality, and academic performance. In order to develop effective strategies to reduce attrition, then, it is important to measure the effects of the student's academic experience (i.e. modality, attendance status, and college) and academic performance on attrition, controlling for the student's demographic and socio-economic characteristics. In this way, one can more clearly identify which factors directly affect attrition and which merely are associated spuriously with attrition.

The non-returning survey data and the descriptive data in Figure 13 suggest that it is particularly important to disentangle the impact of student academic performance on attrition from other factors, such as modality, attendance status, and student socio-economic status and demographic characteristics. Both the 2013 and 2018 non-returning student surveys indicate that financial aid is a leading reason students do not return to UA Little Rock. These are likely difficulties brought on by poor academic performance, since academic probation may result in loss of student financial aid. The important role of poor academic performance on attrition is also suggested by Figure 13: 75-80% of students with GPA below 2.0, and therefore on academic probation, drop out within one year, compared to only 20% of students with GPA above 2.0. It seems likely, then, that academic probation and a resulting loss of financial aid are very common triggers to student attrition. Consequently, it is important to distinguish between how modality, attendance status, race and ethnicity, and socio-economic status affect academic performance (and thus indirectly affect attrition) and whether and how they may directly affect attrition, independent of student academic performance.

One strategy for accomplishing this is logistic regression analysis. UA Little Rock's Office of Institutional Research prepared a data set for the committee consisting of every student enrolled in each semester and summer term from Fall 2011 through Spring 2018, anonymized to protect student privacy. This data set makes it possible to determine in each semester whether each enrolled student re-enrolled the following semester, completed his/her degree, or did not re-enroll and did not complete his/her degree. Logistic regression provides a way to measure the effect of a set of student variables or characteristics on whether a student persisted (i.e. completed his or her degree in a given semester or re-enrolled in the following semester) or dropped out (did not graduate and did not re-enroll). The logistic regression model's coefficients measure the effect of each variable included in the model on persistence while holding constant the other variables in the model. As a result, the model coefficients measure the direct effect of each independent variable on persistence, the outcome variable.

We estimated two logistic regression models of student persistence in a given semester for all undergraduate students who are Arkansas residents. We exclude summer terms from both

analyses. The first model includes measures of eight key student characteristics that may affect her/his persistence:

- 1) Gender: a dummy variable indicating whether student is male (1) or female (0)
- 2) Race and ethnicity: represented as a set of dummy variables indicating student's race and ethnicity as indicated on his/her university application (White serves as the excluded reference category)
- 3) Age: Student's age at the beginning of the semester
- 4) Attendance Status: a dummy variable indicating whether student attended classes part-time (1) or full-time (0) that semester
- 5) Student level: a set of dummy variables indicating student's level at the beginning of the semester (freshman serves as the excluded reference category).
- 6) Modality: A set of dummy variables indicating whether student is taking courses face to face, online, or in a hybrid format that semester (Face-to-face serves as the excluded reference category).
- 7) College: A set of dummy variables indicating the college in which the student's primary major is located in that semester (College of Arts, Letters, and Sciences serves as the excluded reference category).
- 8) Chancellor's Leadership Corps: A dummy variable indicating whether student is a member of the Chancellor's Leadership Corps at the beginning of the semester (1 if yes, 0 if no).

Our second model adds two measures of academic performance to the model:

- 9) Number of Ds, Fs, and No Credits earned in the semester: a count of the number of courses in which students earned a grade of D, F, or No Credit.
- 10) Number of course withdrawals for the semester: a count of the number of courses from which the student withdrew in the semester

Both models also include a set of dummy variables representing the zip code from which the student originated (as indicated by his/her home address on the admissions application). This controls for factors that may affect student persistence that are associated with where s/he lived before attending UA Little Rock but are otherwise unmeasured in the statistical model. Our assumption is that these dummy variables help to control for student's socio-economic status since home zip code is strongly associated with income, poverty, employment opportunities, quality of K-12 education, and other factors that may affect attrition and academic performance.

In addition, the logistic regression model includes dummy variables representing each semester included in the data (with Fall 2011 serving as the excluded reference category). This controls for time-specific factors that may affect attrition among all students in a given semester. These dummy variables also provide a way to determine how unmeasured time-dependent factors have affected student attrition from 2011 through 2018, i.e. how much student attrition has changed independent of student-specific factors.

Since the unit of analysis in the data is student-semester, most students will be associated with more than one record in the data. A student enrolled in 8 semesters over the study period, for instance, will have eight observations in the data set. Records for the same student over different semesters are not statistically independent of each other. To control for this clustering, the model is estimated as a mixed effects logistic regression model, i.e. includes a random effect associated with each student that represents random variation of characteristics across students, in addition to random variation across student-semesters.

Given these characteristics, the regression coefficients in the first statistical model can be taken as measures of the total effect of each independent variable on student persistence, i.e. both its direct effect on persistence and its indirect effect through the variable's effect on student academic performance. The regression coefficients in the second statistical model can be taken as measures of the direct effect of each variable on student persistence after controlling for student academic performance during the semester.

Table 1 uses the parameter estimates from the first model to produce predicted probabilities an undergraduate student will persist to the next semester, given his/her characteristics other than academic performance. (The parameter estimates for the model are provided in Appendix E). These probabilities assume an average student, i.e. one whose characteristics are those of the mean or modal category for each of the measured characteristics (i.e. a white female freshman in spring semester 2018 who is 27 years old, attending full-time in face-to-face classes, is enrolled in University College, and is not enrolled in Chancellor's Leadership Corps). A student meeting these traits, on average, has a 70% probability of either graduating or of persisting to the next semester. The results suggest that the following factors significantly affect student persistence, other things being equal:

- 1) Attendance Status: Part-time students are far less likely to persist than a similar average full-time student (45% probability of persistence, compared to 70%).
- 2) Level: Juniors and seniors were more likely to persist than freshmen (81% and 85% persistence rates, respectively).
- 3) Modality: Online students were less likely to persist (59%) than traditional face-to-face and hybrid students.
- 4) College: Students in the Colleges of Education and Health Professions, Engineering, and Business were the most likely to persist.

- 5) Chancellor's Leadership Corps: Students in the CLC were significantly more likely to persist (87%), after controlling for gender, race, college, level, attendance status, and race and ethnicity,
- 6) Race and ethnicity: Asian students were significantly more likely to persist (79%) than white students, while Black students were less likely to persist (63%) , other things being equal.
- 7) Gender: Male students were somewhat less likely to persist (66%) than female students.

Table 1 Predicted Probability Average UA Little Rock Undergraduate Student Will Persist to Next Semester, Fall 2011 - Spring 2018		
Characteristic	Predicted Probability	Statistical Significance
<i>Gender</i>		
Female (Ref. category)	70%	
Male	66%	*
<i>Race and Ethnicity</i>		
White (Ref. category)	70%	
American Indian	62%	
Asian	79%	*
Black	63%	*
Hispanic	73%	*
Mixed	69%	
Nonresident	76%	*
Race Unknown	73%	
<i>Attendance Status</i>		
Full-Time (Ref. category)	70%	
Part-Time	45%	*
<i>Level</i>		
Freshman (Ref. category)	70%	
Sophomore	76%	*
Junior	81%	*
Senior	85%	*

<i>Modality</i>		
Traditional (Ref. category)	70%	
Hybrid	69%	*
Online	59%	*
<i>College</i>		
CALS (Ref. category)	75%	
CoB	79%	*
CEIT	81%	*
CEHP	86%	*
Interdisciplinary Studies	83%	
CSSC	77%	
University College	70%	*
<i>Chancellor Leadership Corps</i>		
Not enrolled (Ref. category)	70%	
Enrolled	87%	*
* Indicates statistically significant difference($p < .05$) relative to reference category		

The above analysis controls for student attendance, demographic, and socio-economic characteristics, but does not control for student academic performance. Hence, these results provide guidance as to which students are most vulnerable to attrition, whether attributable to poor academic performance or for another reason. These results are most useful then in developing strategies for early intervention by highlighting the characteristics of students who are more vulnerable over the course of their academic career to attrition. Notably, students who are Black, attend part-time, freshmen, online, and enrolled in University College are particularly vulnerable and thus likely to benefit most from early monitoring and intervention strategies.

In addition, it may be helpful to recognize the impact of academic performance on attrition and to have a measure of how student characteristics affect academic performance and thus indirectly affect attrition. These measures can inform strategies for intervention as a student experiences academic difficulties. Table 2 uses parameter estimates from the second model to generate predicted probabilities for student persistence to the next semester. This model includes two measures for student academic performance in a given semester: number of D, F, and No Credit grades, and number of course withdrawals. The probabilities are again for an average student, i.e. one whose characteristics are those of the mean or modal category for each of the measured characteristics: a white female freshman in spring semester 2018 who is 27 years old, attending full-time in face-to-face classes, is enrolled in University College, and is not enrolled in Chancellor's Leadership Corps). In addition, it assumes a student who has no D, F, NC, or W

grades for the term. Given those characteristics, the model predicts this average student to have an 88% probability of persisting to the next semester. This goes down to 78% for a student with one D, F, NC, or W, 63% for a student with two D, F, NC, or W grades, and 45% for a student with three D, F, NC, or W grades.

Table 2 <i>Predicted Probability Average UA Little Rock Undergraduate Student Will Persist to Next Semester (Including Academic Performance Measures), Fall 2011 - Spring 2018</i>		
Characteristic	Predicted Probability	Statistical Significance
<i>Gender</i>		
Female (Ref. category)	88%	
Male	87%	*
<i>Race and Ethnicity</i>		
White (Ref. category)	88%	
American Indian	83%	*
Asian	91%	*
Black	87%	*
Hispanic	89%	*
Mixed	88%	
Nonresident	88%	
Race Unknown	90%	
<i>Attendance Status</i>		
Full-Time (Ref. category)	88%	
Part-Time	61%	*
<i>Level</i>		
Freshman (Ref. category)	88%	
Sophomore	90%	
Junior	92%	
Senior	92%	
<i>Modality</i>		

Traditional (Ref. category)	88%	
Hybrid	89%	
Online	85%	
<i>College</i>		
CALS (Ref. category)	91%	
CoB	93%	*
CEIT	94%	*
CEHP	94%	*
Interdisciplinary Studies	94%	
CSSC	92%	
University College	88%	*
<i>Chancellor Leadership Corps</i>		
Not enrolled (Ref. category)	88%	
Enrolled	94%	*
<i>Academic Performance</i>		
No Ds, Fs, or NCs	88%	
1 D, F, or NC	78%	*
2 Ds, Fs, or NCs	63%	*
3 Ds, Fs, or NCs	45%	*
No withdrawals	88%	
1 Withdrawal	78%	*
2 Withdrawals	63%	*
3 Withdrawals	45%	*
* Indicates statistically significant difference($p < .05$) relative to reference category		

As expected, the effect of many of the non-academic performance variables on persistence is substantively attenuated in Table 2 compared to Table 1 since model 2 controls for academic performance. In general, differences in race, gender, student level, modality, and college have notably smaller effects on persistence once one controls for academic performance. For instance, after controlling for academic performance, an average Black student with no D, F, NC, or W grades in a term has an 87% chance of persisting to the next semester, compared to 91% for an Asian student. This suggests that much of the impact of these factors on persistence occurs because they are related to academic performance. Hence, strategies for retention that

seek to support academic performance for students who are vulnerable to attrition could bear much fruit.

It is worth noting, too, that attendance status has a significant effect on persistence even after controlling for academic performance. An average student with no D, F, NC, or W grades and who is attending part-time has a 61% chance of persisting to the next semester, compared to 88% for a full-time student. Possibly this indicates that students who are prone to leaving UA Little Rock self-select into becoming part-time students. The reasons for this relationship need further investigation.

These results, then, suggest two key factors most clearly associated with attrition from one semester to the next: academic performance and attendance status. Moreover, a number of student enrollment, demographic, and socioeconomic characteristics appear to be associated with both academic performance and persistence. Hence, strategies that seek to support academic performance for those students most vulnerable to attrition are a likely avenue to improving retention at UA Little Rock.

Likewise, further investigation of how and why part-time status is associated with high attrition is in order. This effect is statistically and substantively significant even after controlling for demographic, socio-economic, and academic characteristics of the student. Possibly students more vulnerable to attrition opt to study part-time rather than full-time, making attendance status a correlated but not causal factor in attrition. Alternatively, some aspect of a part-time student experience may make them more vulnerable to attrition (for instance, a lessened sense of attachment to the UA Little Rock campus). Further research may provide some insight into how this relationship can inform retention strategy.

Student Retention Strategies at UA Little Rock's Peer Institutions

This part of our report provides a general description of U.A. Little Rock peer-institution retention efforts. Information from this report is anecdotal in nature and provides a general summation of data acquired from available open access resources. Highlighted in this report are initiatives from institutions with student retention rates above the national average. We particularly reviewed retention efforts at UA Little Rock's peer institutions, as identified by the Office for Institutional Research:

- Boise State University
- Cleveland State University
- Georgia Southern University
- Indiana State University
- Portland State University
- Texas A&M University-Corpus Christi
- University of Memphis
- University of Missouri – St. Louis
- University of Nebraska at Omaha
- University of New Orleans
- University of North Carolina at Charlotte

Three common themes emerged among peer-institutions with student retention rates above the national average:

- Coordinated Retention Plan
- Commitment to Peer Mentoring
- Early Alert Systems

Coordinated Retention Plans

Boise State University: One example of a comprehensive and coordinated effort for retention can be seen at Boise State.

“This past year has been really another one of excitement and accomplishment at Boise State,” President Bob Kustra noted in his State of the University address on Aug. 16. “Our first-year retention rate is now up to somewhere between 78 percent and 80 percent, depending on how you count. And it’s amazing when you stop and think, that was 60 percent a few years ago, and that’s a lot of hard work by faculty, by staff, advisors – there’s so much that goes into that – the leadership of the provost’s office. It’s amazing to see that number increase as it has.”

Boise State created a Freshman Success Task Force in 2004 to improve retention and degree completion. The task force’s 2005 recommendations led to overhaul of the core mathematics

curricula, redesign of remedial English and placement exams for English composition courses, and the creation of a Learning Assistant Program to support students in targeted courses. By 2015, these campus efforts helped increase overall retention by 15 percentage points, with increases of 21 percentage points for underrepresented students and 13 percentage points for Pell-eligible students. Over the same period, the university-wide graduation rate increased by 10 percentage points.

University of North Carolina Charlotte (UNC Charlotte): Another example of an effective coordinated retention effort can be found at UNC Charlotte. The university addresses issues like faculty course design. The focus is on cognitive science, learning pedagogies, modularized approaches to skills development, and instructional technologies that allow instructors to understand in real time the facts, concepts, or skillsets that their students are struggling with or mastering.

To maintain enrollments, increase retention rates, and improve graduation rates, UNC Charlotte feels that addressing students in the recruitment process is critical. Using geo-demographic, socioeconomic and academic data, the university targets the characteristics of a successful recruit, applicant, enrolled freshmen, and future graduate.

University of Missouri – St. Louis (UMSL): What is worth noting is one way that UMSL addresses retention. The university implements:

- Dual layer retention efforts for students at their Academic Center (Student Affairs) in addition to Student Success Center (college level).
- Engaging and preparing incoming students at the high school level to anticipate and address any barriers to success.
- Interacting with immediate family before students enter the University, with the intention of removing barriers to student success.

Early Alert Systems

UNC Charlotte: The number one goal in the UNC Strategic Directions plan is the implementation of their Early Warning System (EWS). UNC campuses are reporting positive behavioral changes in students who are identified through EWS and report that the preliminary data are promising indicators that EWS can improve overall student success when implemented effectively.

University of Memphis: To facilitate ongoing communication with students and provide timely assistance to students in need of help, the University of Memphis developed the Early Intervention System (EIS). EIS is a computerized wake-up call to students who may need extra help. The system is designed to signal the need for assistance before students fall too far behind. When an alert is issued on a student, an email is automatically generated to 1) the student, 2) the student's college advisor, and 3) Center for Academic Retention and Enrichment Services. An appointment is then scheduled by the advisor to discuss the concerns/issues raised by the instructor.

University of Missouri St. Louis: The goal of the Early Alert Program at UMSL is to initiate prompt communication and effective intervention with students when they become at-risk of not achieving success in a course. Through this proactive program, The Office of Student Enrichment and Achievement aims to:

- Connect instructional faculty with a direct link to support services for students that encounter success barriers in a course.
- Provide students with the opportunity to increase their chances of success in a course by participating in active and effective strategies for improvement.
- Support student learning by connecting students with necessary support services.
- Encourage a culture of support between students, faculty, and support units at UMSL.

University of New Orleans: The University of New Orleans uses an Academic Early Alert System in an effort to maintain and increase an above the national average freshman year retention rate. More detailed information about the system required a system login.

Commitment to Peer Mentoring

UNC Charlotte: A primary initiative for student retention at UNC Charlotte is the Students Obtaining Success (SOS) peer mentoring program. The focus of SOS is to help students succeed and achieve their educational and career goals by providing peer mentoring for those on academic probation. The SOS program is designed to help students identify their unique challenges and develop an action plan to improve academic performance and return to good academic standing.

Cleveland State University: Cleveland State University has seen improvement in retention of transfer students. In a new trustee approved plan aimed at building upon this success, the university plans to introduce new initiatives to help improve overall retention rates. These actions include:

- A pilot program that will assign a graduation coach to a small group of high-risk students, in addition to regular academic advising.
- Redesigning a freshman orientation course, eventually adding peer mentorship.
- Finding a digital method to track student progress on their degree.

Summary

This report suggests that institutions with a coordinated student retention effort experience a common result, that being higher than national average retention of students. Coalescing with a coordinated effort, peer mentoring and an automated early warning system is in place to support retention efforts. Conversely, those institutions with below average student retention tended to have disjointed or perfunctory efforts at prevention and intervention. For

example, universities with below the national average retention rate maintain access points, but they rely heavily on the student to initiate contact. Moreover, those that experience well below the national average retention rates do not perform well even with student access, having broken website links to student resources and modest face to face access.

Current Student Retention Practices at UA Little Rock

As of spring 2019, UA Little Rock practices related to retention are scattered, but are in the process of consolidation and prioritization through the provost's office, in an effort led by Daryl Rice. Many individuals and groups have examined the issues over the last decade, and a small number of initiatives have been implemented.

The most systematic university-wide retention efforts are currently directed to or first-time, full time freshmen. These students are first advised by the Trojan Academic Advising and Support Center, by professional advisors who not only help students select courses, but also reach out to schedule meetings with students during the semester. Currently, the first-year experience course is required for all first time, full time freshmen. In theory, all FYE courses include modules to introduce students to resources on campus and acclimate them to their college experience. Additionally, in fall 2018 the university piloted learning communities, in which groups of students take connected courses. All three of these strategies are supported by research, but they have not been evaluated for effectiveness at UA Little Rock.

The early alert system was implemented in the 2018-2019 academic year to provide advisors in TAASC and the individual colleges with information about which students were struggling. The provost's office asked instructors to use BOSS to provide their best judgments about whether students would pass or fail the class, based on students' performances in the first few weeks of class. Those students identified as at-risk were then contacted by advisors, who had conversations with the students about academic progress and challenges to their ability to be able to successfully complete their courses. The early alert system will need to be evaluated to determine whether this type of intervention was helpful in retention efforts.

Several recently-added advising tools have facilitated advising and student knowledge of their progress towards degree. DegreeWorks allows those in the fall 2017 catalog and beyond to see a real-time snapshot of their progress towards graduation. The "notes" feature is important so that when students are assigned new advisors as they declare their degrees, the new advisors can see notes from previous sessions. CRM-Advise will be rolled out in the fall to current advisors. It allows for advisors to set specific items as alerts, and it can also send text messages instead of emails to students.

A survey conducted in fall 2018 found that there are a number of academic support services for students at all levels on campus. The University Writing Center, Communication Skills Center, and the Mathematics Assistance Center all provide support across courses and programs. Individual colleges all have some degree of academic support, and some, like CEHP, also offer support with non-academic issues. Some individual departments, such as the History Department also offer computer labs and tutoring for courses. Anecdotal evidence indicates that many of these resources are underutilized, although evaluation has only taken place on a limited basis.

Smaller or *ad hoc* efforts in the past year have attempted to focus on quality teaching and pedagogy to improve retention. STaR holds online summer teaching academies and Quality Matters workshops, as well as open office hours, year round. Various units on campus have held

meetings related to retention in the last two years. Dissemination of peer-reviewed research into online teaching by professors Rebecca Glazier and Heidi Harris has been somewhat limited, occurring in an ATLE session and in CALS faculty discussions about retention. Mark Bailie, director of the STEM has organized a scientific teaching workshop for faculty in summer 2019 that is at capacity. In general, faculty are interested in learning about and engaging in discussions concerning retention.

Cody Decker and the Office of Institutional Research recently made a large amount of data available to faculty, staff and administrators. The Trojan Fact Finder will allow departments to see which courses with high DFW rates are required for their programs. This information should be very helpful for determining courses which might benefit from redesign or additional support measures. Department chairs and college administration would benefit from demonstration of the data dashboards and examples of how it might be used.

Additionally, both the university and the Student Government Association have conducted surveys of students. These surveys, an open forum with the vice chancellor for student affairs and the chancellor, a complaint form on the Dean of Students website, and the Improve UA Little Rock initiative, rolled out in early May 2019, provide venues for students to communicate with administrators about elements of their experience at UA Little Rock, which may lead them to not return to campus. Anecdotal evidence, as well as evidence gathered by the IEC, indicates that students are frustrated about class schedules/availability, issues with the financial aid and bursar's offices, sharing space with eStem, particularly in the student center, dining options, and lack of activities for full time campus residents. Students have turned to social media to express their concerns as well, particularly a Facebook group, "All in for UA Little Rock," created in late April 2019, which gained over 550 members in less than two weeks, and averages over 7 posts a day. This indicates that students feel that existing channels for their concerns are not sufficient.

Recommendations

Rather than re-invent the wheel, the Retention Committee has reviewed a number of previous reports that address student retention and student success at UA Little Rock to identify recommendations that have not been fully implemented yet. These reports, a timeline and summary of which are provided in Appendix F, include:

- 1) A 2007 Student Retention Summit led by Chancellor Anderson
- 2) A 2010 report by an ad hoc retention committee chaired by Sandra Robertson and titled “Proposed Organizational Structure to Facilitate Student Success” (with an accompanying 2012 update by Daryl Rice).
- 3) “Distinguishing UALR”: Recommendations generated to promote student success at the 2016 Provost Unit Head’s Retreat
- 4) The “Opportunity Analysis” generated last year by Rob Baird with Ruffalo-Noel-Levitz.

The *Ad Hoc* Student Retention Committee recommends:

- 1) Develop a standing university-level committee on student success and retention

Multiple units, both academic and in student affairs, play important roles in student retention and success. But there is a notable absence at UA Little Rock of coordination across units on matters of student success and retention, indicating a high degree of “siloeing” when it comes to coordinating strategies and assessing outcomes.

An important initial objective for this committee should be to develop a strategic plan to improve student retention and success at UA Little Rock. The retention committee’s research into our peer institutions finds evidence that nearly all of our peers who outperform UA Little Rock on retention have an identified retention plan. One model for such a committee and its process is the “Collective Impact” approach used to coordinate the efforts of multiple stakeholders towards a common well-defined and measurable objective.

- 2) Clarify responsibility for student retention at UA Little Rock.

While the buck stops with the Chancellor, the retention committee was unable to identify an administrator or staff person whose chief responsibility is student retention and success at the level of the university. In short, no one person is accountable for UA Little Rock’s degree of retention and success. The committee believes that a person serving in this role can help to coordinate and support the work of a standing retention committee, as well as acting as a voice for this aspect of governance in university administration.

3) Consider a requirement that core courses participate in Early Academic Alert reporting

Our research into peer institutions has found that universities where early academic alert systems are implemented tend to be more successful than UA Little Rock in student retention.

Implementation of this system at UA Little Rock is still in its pilot phase and has been voluntary. Once we move beyond pilot and have a functioning system, we may wish to consider making faculty participation with the system a condition for inclusion of a course as part of the University's general education core. Our rationale is that it is likely to be in these courses that students are most vulnerable to problems that result in university attrition. That is, these tend to be larger classes with less support to students, enroll more freshmen and sophomores, and have higher DFW rates.

4) Consider a requirement that faculty record mid-term grades in Boss for 1000-2000 level courses. This will provide an additional opportunity for faculty or academic advisor intervention. Implementation might be tailored to core courses and/or to online 1000-2000 level courses, or high-enrollment courses.

Appendix A: Members of the *Ad Hoc* Committee on Student Retention

Committee Members

Mike Crow (*Chair*, Social Sciences and Communication)
Larry Dicus (Student Government Association)
Justin Laffoon (Education and Health Professions)
Kristen Mann (Arts, Letters, and Sciences)
Lydia McDonald (Education and Health Professions)
Jessica Olson (Student Government Associations)
Jess Porter (Arts, Letters, and Sciences)
Diamond Shelman (Graduate Student Association)
Josh Spinler (Engineering and Information Technology)
Daryl Tate (Education and Health Professions)
Tom Tudor (Business)
Otmar Varela (Business)

Ex-officio Members

Cody Decker (Office of Institutional Research)
Sharon Downs (Student Affairs)
Trakenya Dobbins (Trojan Academic Advising and Support Center)
Richard Harper (Student Affairs)
Mark Allen Poisel (Student Affairs)

The committee thanks Carmien Penny and Blane Stroud for the invaluable research support they provided over the course of this project.

Appendix B --- 2013 Non-Returning Students Survey Report

Appendix C – 2018 Non-Returning Students Survey Report

Appendix D --- Responses to Question 2 on 2018 Non-Returning Students Survey: “What is the single most important reason you did not re-enroll at UA Little Rock in Fall 2018.”

Response ID	What is the Single Most Important Reason You Did Not Re-Enroll at UA Little Rock in Fall 2018?
1	777
2	A more face based perspective
3	accepted in program at UAMS
4	active duty in military
5	Affordability
6	already enrolled in another insitution
7	Bc I leave in october for military.
8	because i am classes that are pre-nursing. The classes at community college cheaper. I pay half as much.
9	Because I completed my degree
10	Because I didn't feel like all the different things he had given me I had learned well enough, so I'm taking this semester to get better at what I learned before I learned something else.
11	Because I had to be here for a semester only.
12	because I transferred
13	Because i wanted to take some vacation time
14	Because it's cheaper to go to Fayetteville, bc they have a football team, and they have a lot more to offer. better qualility proffesors.
15	Because of the sports program
16	Because they didn't accept me to the program that I applied to.
17	Because they wont let me return to the program
18	Because UALR is terrible.
19	Because, of financial reasons.
20	Because, there was only one chemistry teacher, and I already failed that class three times. I was able to go to Pulaski Tech and take chemistry and micro at the same time with no problem.
21	becuase i couldnt afford it
22	Buddy was fine taking classes on his own and parking was too far away carrying painting gear
23	busy with working a full-time job
24	busy, travelling
25	car accident and cant go back
26	changing schedule concerns.

27	Combination of money and mental health
28	Completed language requirement
29	Confusion.
30	Convenience, found better rates elsewhere
31	cos I graduated.
32	Cost
33	cost
34	cost.
35	could not afford it
36	Decided to pursue a different career and UALR did offer that degree.
37	Deploying
38	Didn't have money to pay for this semester
39	didn't have time
40	Didn't have scholarships and was planning on moving
41	didn't have time
42	didn't pass the nursing test and also in the armed forces
43	dissatisfied with program, transferred to AR Tech
44	divorce
45	Don't have the money
46	Due to work and military obligations
47	emergency family matters
48	enrolled in another school \
49	Felt that it was a lost cause; failed numerous classes, and did not expect to pass if attempted again.
50	finances and classes for major weren't offered at good times
51	financial reasons, and most classes are offered in the spring
52	Financial aid office kept messing up my aid
53	Finances
54	financial aid
55	financial aid
56	financial aid
57	Financial Aid issues
58	Financial Aid issues
59	Financial difficulties.
60	Financial issues
61	Financial reasons
62	Financial reasons.
63	finished with program
64	Focus on work

65	funds dried up
66	going to another school
67	going to another university
68	got divorced and had to start working two jobs
69	Graduated
70	had a new baby and work full time
71	had differing opinions with the athletics department
72	Had something very important come up so I had to attend to that first
73	had surgery and was unable to
74	had the opprotunity to go to another college
75	had to move out of state
76	had to transfer to school in TX
77	having a baby in october
78	health issues
79	Health reasons. I was sick a long time and bearylly was able to finish my last class. I was Sick off and on for 6 months. Trying to get healthy before I come back. I'm 66 yrs old.
80	I am currently working a full time job as well as attending school which affected my GPA and in turn led to me losing my scholarships. I'm presently working to save enough money to retake the classes and improve my GPA to get my scholarships reinstated.
81	I am doing a medical appeal. I dropped health reason and doking an appeal for tuittion.
82	I am enrolled at another university
83	I am planning to register for the spring, and I'll keep playing with what I already know until then.
84	I am studying for the teacher;s program right now
85	I changed my goal for my carrers and transf
86	I completed everything, I graduated.
87	i completed my degree somewhere else
88	I could not afford it because of my medical issues
89	I could not get financial aid
90	I couln't afford it. I'm a self paid student.
91	I couln't afford the classes. I transferred to PC
92	I couln't keep up the pace. For students who have been out of school. They did not help and have patience. I went to a smaller school.
93	I couln't make the school schedule work and work at the same time.
94	I decided to semester off and come back in the spring.
95	I decided to transfer to UA Fay

96	I did not find a course that i was interested in and also had a trip planned which coincided with the school calendar.
97	i did not have financial aid and waited to late to apply for scholarships
98	I did not quaify for the RN program
99	I didn't find anything interesting this semester and I'm going to have surgery tomorrow that's why I didn't enroll this semester.
100	I didn't get into the nursing program
101	I didn't get into the program that I wanted. I did not get into into social work program and thought I needed to get something more specialized than a blank psychology degree so I transfered to another school that had the program.
102	I didn't have enough finacial aid
103	I didn't have the money to pay for classes
104	I didn't think it was hands on enough. A football team would be great. A lot of students don't come to UALR because there's no football team.
105	I didnt have proper guidance.I was going to have to take too much stuff due to a major change.
106	I don't have the money to enroll
107	I dont have time
108	I finished all of my general studies courses and I am waiting for admittance to uams
109	I got a better scholarship in Alabama
110	I got accepted into a nursing programs
111	I got married and moved to California
112	I got put on the waiting list/ and I could reapply
113	I graduated from a different university, and then I went to get my masters somewhere else.
114	I graduated from another university
115	I graduated.
116	I had a baby
117	I had a baby so I needed to be closer to her so I tranfred to another school
118	I had a lot of car problems this fall so I couldn't get to school. My academic advisor he made it difficult for me to sign up for classes , I couldn't reach him.
119	I had to withdraw from my class this fall because of a family/medical emergency.
120	I have a job and a new career path that does not require me to have a degree
121	I have two children.
122	I joined the military
123	I just didn't feel like the school was a good fit.
124	I moved away
125	I moved back to my home state of Colorado.

126	I moved out of state
127	I moved to fayetteville.
128	I need the classes to get in dental Hygeine Schoool
129	I need to be closer to home.
130	I NEEDED TO PASS THE PRAXIS FIRST
131	I quit playing basketball and was on a scholarship, lost the scholarship.
132	I started full time job which took up my time. I am thining about this ned semester.
133	I think the university is not geared towards students of color and their educational background. Also they have to up the standards where lecturers are concerned especially in the Chemistry dept and the availability of resources for colored students
134	I tranferred for to play basketball for another with a scholarship.
135	I transferred to play sports somewhere else
136	I want to complete my prerequisites for nursing at pulaski tech because it is cheaper
137	I was accepted by another college into a nursing program
138	I was an international exchange student
139	I was going to the next step by attending UAMS.
140	I was not going to get any scholarships or federal aid, I didn't have the money to come back.
141	I was suffering from depression, so I went home.
142	I wasn't cut out for college and my major
143	I wasn't enjoying my classes. I didn't have any teacher's aid or any people to help me.
144	I wasn't liking the online classes, they weren't too helpful. Didn't want to drive back and forth to school.
145	I went to tech in Russellville.
146	I will be doing alot of traveling during the fall semester and did not want to disrupt my studies. I plan to return in the spring
147	I work full time, usually about 60 hours.
148	I'm busy. I work in the art ci]enter
149	I'm going to Pulaski Tech. Taking 14 credit hours at Pulaski Tech. Too busy.
150	I'm in the military, so to enroll I had to have a certain amount of time on my contract to enroll in classes, and I didn't have that time.
151	I've completed all coursework and waiting on dean to approve graduation application
152	It was just a complication. I worked up there, and they tried to hire me for a full time job, and then they backed out and it was too late for me to enroll in classes.

153	It was too expensive.
154	Joined the military.
155	Just took off a semester because of financial reasons.
156	Just working, busy.
157	lack of available courses for my major
158	lack of finance
159	Lack of flexibility on class hours
160	Lack of funds
161	Lack of time
162	late registration
163	Living in Pine Bluff and working. Taking a break this semester.
164	loan in default
165	looking to relocate
166	lost scholarships
167	Lost your job
168	Maxed out my financial aid credit allowance, wasn't eligible for any more financial assistance
169	medical reasons
170	Medical reasons, course was too intense, and had a web class in which the teacher was too advance due to her disability.
171	Military
172	missed the deadline for enrollment and didnt make the waiting list
173	Monetary concerns
174	Money
175	Money
176	Money
177	money
178	money
179	Money
180	money issues
181	More focused on my business.
182	Mostly because I almost graduated. I'm 1 class away from graduation.
183	moved
184	Moved closer to home
185	Moved out of state
186	Moved out of state
187	moved to different state
188	Moved to nebraska
189	My mom has cancer so I moved back home.

190	My mother moved to Memphis and in order to save money I moved with her and enrolled in a different school
191	My work schedule changed and I didn't think about online classes.
192	needed a break to focus on career
193	Needed a break were planning to enroll in the spring
194	needed a break, should be back next semester
195	needed more hours at work
196	no ID to attend UALR anymore
197	not able to take class for health reasons
198	Not enough money
199	Personal issues
200	Personal issues planning to re enroll this spring
201	personal reasons
202	personal reasons and had to move
203	Personal reasons.
204	Personal Health
205	Prior testing before re enrolling
206	Procrastination, waited too long, the classes that I needed to take were not available at a convenient time.
207	relocation
208	Scheduling conflicts
209	school interfered with job
210	school seemed unorganized and had four different advisors in two years that were not helpful at all. and kept sending him to other. never met the advisors for more than 30mins at a time
211	Single parent. Needed to work this fall.
212	started at LPN program
213	started pharmacy school
214	Taking basics at another university
215	The career field I was going for there's a lot of controversial issues that were brought up. Did not agree with the doctrine being taught. classmates were segregating themselves in the classroom. Not a healthy environment as far as the classroom goes. Some code of Social Worker ethics was against my beliefs.
216	the expenses
217	the general lack resources engineering dept. overall the whole for what I was trying to do not enough
218	the university was not a fit for me. I was looking for a more traditional college experience
219	There was issue involving my scholarships

220	There's a personal situation going on. Not able to enroll this semester.
221	They did not allow me transfer my math credit, other pre-requisites and required me to take another math test.
222	Time and money
223	Too busy with kids and work
224	too busy with work
225	Took semester off but plan to re-enroll next semester in January
226	transferred
227	transferred schools
228	Transferred to Fay has a better program
229	Transferred to UAMS
230	transferred to another school
231	Transferred to another school that was closer to home
232	Transferred to university in home state
233	travel time was to long for a 1 hour class
234	UALR did not offer a mechanical engineering degree
235	UALR did not offer some classes
236	Unsure of my major
237	Wasnt able to afford it anymore
238	We got order we are moving to Japan, military.
239	working and moved
240	Working full time

Appendix E --- Method of Analysis for Undergraduate Student Persistence, Fall 2011 – Spring 2018

The predicted probabilities of student persistence (i.e. the probability a given student in a given semester will either graduate or will re-enroll in the next semester) are derived from a logistic regression analysis of 28,631 undergraduate students who attended the University of Arkansas at Little Rock between Fall semester 2011 and Spring semester 2018. Each observation in the data set represents a particular student in a given semester, resulting in a data set of 107,030 student-semesters. UA Little Rock's Office of Institutional Research compiled this data set, which excluded student identifiers and included student-level measures such as gender, race and ethnicity, student enrollment characteristics (such as student level, degree program, major, attendance status, and modality), admissions data (home zip code, high school attended, and high-school GPA), an indicator of whether student earned his/her degree in that semester, and indicators of academic performance (number of D, F, NC, and W grades and GPA). The data also included an indicator of whether the student enrolled in UA Little Rock in the succeeding semester (the upcoming spring semester for a student enrolled in fall, or the upcoming fall semester for a student enrolled in spring).

The dependent variable in our analysis is a dichotomous variable indicating whether the student in a given semester persisted (i.e. graduated in that semester and/or re-enrolled in the succeeding semester). It takes on a value of 1 if the student persisted and 0 if the student did not graduate and did not re-enroll in the succeeding semester. Summer graduations were counted as graduations for the immediately preceding spring semester. It is worth noting that a number of students who fail to persist in a given semester re-enroll in a later semester. This analysis does not speak to this pattern in degree completion. Rather, it focuses on persistence from one semester to the next.

The main independent variables included in the first statistical model are a dummy variable indicating whether the respondent is male; a set of dummy variables indicating respondents race or ethnicity (with White non-Hispanic serving as the reference category); respondent's age in the semester; a dummy variable indicating whether the student is part-time; a set of dummy variables indicating student level (with freshman serving as the reference category); a set of dummy variables indicating modality (with traditional face-to-face serving as the reference category); the college the student was enrolled in (with College of Arts, Letters, and Sciences serving as the reference category); and a dummy variable indicating whether the student participated in the Chancellor's Leadership Corps.

In addition, it is important to recognize that these data are multi-level: student-semesters are nested within students as units. That is, some variables (like modality, attendance status, and college) may vary both with the student and semester, while others (like race and gender) are the same across semesters for a given student. Moreover, students are nested within home zip codes, i.e. the zip codes in which they resided immediately before attending UA Little Rock. Hence, the statistical model includes three additional elements to account for the multi-level nature of the data. First, it includes a set of dummy variables indicating the zip code in which the respondent lived prior to attending UA Little Rock (i.e. zip code indicated on his./her admissions application). Zip code matters in our analysis as a way to control for student socio-economic status. Since the dataset do not include measures of a student's family income, parental

education, or other such predictors of student success, we use zip code as a proxy for these factors. Students with missing zip code information or who originate from a zip code with fewer than 50 observations in the data set are clustered into a single category to avoid collinearity problems in estimating the model. Second, the data include dummy variables for each semester included in the data set (with Fall 2011 serving as the reference category). This controls for time-specific factors that may affect student attrition that reach beyond any one student (for instance, economic conditions in Central Arkansas). Finally, the model includes an error term (or random effect) representing random variation in persistence across individual students, in addition to an error term representing random variation across student-semesters. This accounts for the manner in which student-semesters are clustered within students. Formally, the logistic regression model underlying the predicted probabilities reported in Table 1 then is:

$$(1) \Pr(P_{ijt} = 1 \mid \mathbf{Z}_j, \mathbf{S}_t, \mathbf{D}_{ij}, \mathbf{E}_{ijt}) = \Lambda(\beta_0 + \beta_1 \mathbf{Z}_j + \beta_2 \mathbf{S}_t + \beta_3 \mathbf{D}_{ij} + \beta_4 \mathbf{E}_{ijt} + u_i)$$

Where:

$\Lambda(\beta X_i)$ indicates the logistic cumulative distribution function

P_{ijt} = whether i th student from j th zip code in semester t persists (i.e. graduates or re-enrolls in the succeeding semester).

\mathbf{Z}_j = vector of dummy variables indicating the zip code from which the student originated.

\mathbf{S}_t = vector of dummy variables indicating the semester

\mathbf{D}_{ij} = vector of demographic indicators for student i from zip code j that do not vary with time (e.g. race and ethnicity, gender).

\mathbf{E}_{ijt} = vector of student enrollment characteristics that may vary with time (e.g. attendance status, modality, college).

u_i = random error term that varies across students and is normally distributed with mean zero.

Table E1 reports the parameter estimates for this model. Note that coefficients are expressed in logged odds ratios.

Table E1 Parameter Estimates for Student Persistence Model, Excluding Academic Performance Measures (N=107,030)			
Variable	Coefficient	Standard Error	P-Value
<i>Zip Code</i>	Included^		0.006
<i>Semester (Fall 2011 ref)</i>			
Spring 2012	-0.74	0.04	0.000
Fall 2012	-0.05	0.05	0.261
Spring 2013	-0.76	0.05	0.000
Fall 2013	-0.25	0.05	0.000
Spring 2014	-0.79	0.05	0.000
Fall 2014	-0.29	0.05	0.000
Spring 2015	-0.77	0.05	0.000
Fall 2015	-0.27	0.05	0.000
Spring 2016	-0.77	0.05	0.000
Fall 2017	-0.31	0.05	0.000
Spring 2017	-0.80	0.05	0.000
Fall 2017	-0.37	0.05	0.000
Spring 2018	-0.90	0.05	0.000
Male	-0.19	0.02	0.000
Age	0.00	0.00	0.980
Part-Time	-1.03	0.02	0.000
Chancellor's Leadership Corps	1.09	0.06	0.000
<i>Race/Ethnicity (White ref)</i>			
American Indian	-0.37	0.19	0.051
Asian	0.47	0.08	0.000
Black	-0.31	0.03	0.000
Hispanic (any race)	0.16	0.06	0.010
Two or more races	-0.04	0.05	0.400
Non-resident Alien	0.34	0.08	0.000
Unknown	0.17	0.15	0.236
<i>Level (Freshman ref)</i>			
Sophomore	0.31	0.03	0.000
Junior	0.64	0.03	0.000
Senior	0.87	0.04	0.000
Post-Baccalaureate	0.01	0.05	0.898

<i>Modality (Traditional ref)</i>			
Hybrid	-0.05	0.02	0.025
Online	-0.46	0.03	0.000
<i>College (CALS ref)</i>			
COB	0.22	0.04	0.000
CEIT	0.33	0.05	0.000
CEHP	0.71	0.04	0.000
Interdisciplinary Studies	0.50	0.46	0.275
CSSC	0.08	0.04	0.031
University College	-0.28	0.03	0.000
Constant	2.30	0.07	0.000
<i>Ancillary Parameters</i>			
Variance (student- level)	1.03	0.04	
^ Statistical significance determined by joint Wald test			

The predicted probabilities reported in Table 2 are derived from a statistical model that adds two measures of academic performance to the model above: number of D, F, and No Credit grades the student earned in the semester, and number of course withdrawals the student had in the semester. We separated the withdrawals from D, F, and NC grades since withdrawals may indicate circumstances related to health or personal well-being, rather than academic performance. Formally, the model used to derive the probabilities in Table 2 is then:

$$(2) \Pr(P_{ijt} = 1 \mid \mathbf{Z}_j, \mathbf{S}_t, \mathbf{D}_{ij}, \mathbf{E}_{ijt}, \mathbf{A}_{ijt}) = \Lambda(\beta_0 + \beta_1 \mathbf{Z}_j + \beta_2 \mathbf{S}_t + \beta_3 \mathbf{D}_{ij} + \beta_4 \mathbf{E}_{ijt} + \beta_5 \mathbf{A}_{ijt} + u_i)$$

where \mathbf{A}_{ijt} is a vector of indicators of academic performance for student i in semester t .

Table E2 reports the parameter estimates for the model specified in equation 2:

Table E2 Parameter Estimates for Student Persistence Model, Including Academic Performance Measures (N=107,030)			
Variable	Coefficient	Standard Error	P-Value
<i>Zip Code</i>	Included^		0.006
<i>Semester (Fall 2011 ref)</i>			
Spring 2012	-0.69	0.05	0.000
Fall 2012	0.00	0.05	0.979
Spring 2013	-0.67	0.05	0.000
Fall 2013	-0.16	0.05	0.001
Spring 2014	-0.72	0.05	0.000
Fall 2014	-0.22	0.05	0.000
Spring 2015	-0.73	0.05	0.000
Fall 2015	-0.20	0.05	0.000
Spring 2016	-0.72	0.05	0.000
Fall 2017	-0.26	0.05	0.000
Spring 2017	-0.77	0.05	0.000
Fall 2017	-0.33	0.05	0.000
Spring 2018	-0.87	0.05	0.000
Male	-0.06	0.02	0.004
Age	0.00	0.00	0.065
Part-Time	-1.54	0.03	0.000
Chancellor's Leadership Corps	0.74	0.06	0.000
<i>Race/Ethnicity (White ref)</i>			
American Indian	-0.38	0.17	0.032
Asian	0.32	0.08	0.000
Black	-0.06	0.03	0.022
Hispanic (any race)	0.13	0.06	0.026
Two or more races	0.03	0.04	0.455
Non-resident Alien	0.04	0.07	0.611
Unknown	0.19	0.14	0.165
<i>Level (Freshman ref)</i>			
Sophomore	0.25	0.03	0.000
Junior	0.43	0.03	0.000
Senior	0.49	0.04	0.000
Post-Baccaulareate	-0.45	0.04	0.000

<i>Modality (Traditional ref)</i>			
Hybrid	0.11	0.02	0.000
Online	-0.30	0.03	0.000
<i>College (CALS ref)</i>			
COB	0.15	0.04	0.000
CEIT	0.34	0.05	0.000
CEHP	0.41	0.04	0.000
Interdisciplinary Studies	0.34	0.46	0.463
CSSC	0.02	0.04	0.575
University College	-0.37	0.03	0.000
<i>Academic Performance</i>			
# of D, F, and NCs	-0.73	0.01	0.000
# of Ws	-0.74	0.01	0.000
Constant	3.37	0.07	0.000
<i>Ancillary Parameters</i>			
Variance (student-level)	0.53	0.03	
[^] Statistical significance determined by joint Wald test			

In addition to the predicted probabilities reported in Tables 1 and 2, we can also gain some insight into student persistence from the coefficients on the semester dummy variables in Tables E1 and E2. First, as might be expected, these coefficients suggest that persistence is more likely from fall semester to the succeeding spring semester compared to persistence from spring semester to the succeeding fall semester. The coefficients on the fall semester terms are notably smaller than those on the spring semester terms, indicating that (relative to Fall 2011) persistence tends to be more likely for these semesters than the spring semesters. This implies that the intervening summer between spring and fall semesters may create circumstances that result in a student deciding not to return for the fall semester. Second, it is notable that over time, the magnitude of the coefficients increases. This suggests that attrition is increasing for UA Little Rock students over time for reasons unrelated to student circumstances or other variables controlled for in the statistical model. We can think of this as an increasing tendency or proclivity to attrition that is independent of the characteristics of the students that are measured here.

Appendix F: A Timeline & Summary of UA Little Rock Reports on Enrollment & Retention

UALR Student Retention Summit (2007)

<https://ualr.edu/about/home/strategicplan/accountability-report/student-success/>

In Fall 2007, Chancellor Joel Anderson asked Provost Belcher and Vice Chancellor Charles Donaldson to review the findings of several UALR retention and student success studies conducted in recent years to identify retention strategies of particular promise for the University in its efforts to improve retention performance. In his December 2007 Retention Summit, Chancellor Anderson charged the university with implementing the six retention initiatives identified. The following is a status report of the implementation process.

- **Mandatory new-student orientation.** Status: accomplished. The new-student orientation program has been expanded to include an online orientation program for those whose work and family schedules preclude participation in face-to-face sessions.
- **Required first-year experience course.** Status: in progress. The Faculty Senate has passed legislation requiring that all first-time, full-time freshmen enroll in a first-year experience course beginning in Fall 2011. Appropriate first-year experience courses will be created and identified under the aegis of the Undergraduate Council during the 2010-2011 academic year.
- **Ensuring adequate seats to accommodate students needing developmental courses.** Status: accomplished. Further, the university modified the developmental program to include intrusive advising and mentoring and learning community opportunities which incorporate PEAW 1300, a first-year experience course. Early comparisons demonstrate that students in this revised developmental program were retained from Fall 2009 to Spring 2010 at a rate higher than the retention rate for **all** first-time, full-time freshmen. Clearly this program is working. The developmental program operates under the supervision of the Academic Success Center.
- **Posting mid-term grades in all 1000- and 2000-level courses.** Status: accomplished. The Faculty Senate passed legislation requiring all faculty teaching these courses to communicate mid-term grades to their students; thus, the legislation ensures some early warning of problems to students and course faculty. However, since posting grades in BANNER, the university's data system, was not made a requirement, advisers may or may not have access to these data and therefore knowledge of a student's academic problems. Without such knowledge, advisers do not know when a student needs extra support in order to successfully complete a course. Recording of these mid-term grades in BANNER needs to be required.
- **Strengthening advising and early declaration of a major (two retention initiatives being jointly implemented).** Status: in progress. Because 70 percent of UALR students

have transfer credit, the first step in implementing these two retention initiatives was to establish a transfer office to articulate transfer core credit effectively and consistently, a development which freed professional staff and faculty to focus on advising students on major requirements, and providing academic and professional mentoring. The Office of Transfer Student Services (OTSS) was established in April 2009 and, in its first year of operation, served 3039 students, a figure which includes articulating 5825 transfer adjustments for 1797 students. OTSS is also responsible for maintaining updated articulation agreements with Arkansas community colleges.

Another priority for implementation of these two initiatives has been completing development of the Degree Audit, an electronic function which will facilitate the advisors' work with students. Another improvement on the horizon is the implementation of a process by which departments will be able to approve students interested in their programs as pre-majors for advising purposes, thus facilitating earlier student contact with an advisor in the major department. Because many of these developments represent significant process changes, the task force leading implementation of these initiatives has created a training program for academic advisors to include information on using the Degree Audit, accessing advisor support systems, accessing student support services, and advising best practices.

“Proposed Organizational Structure to Facilitate Student Success” --- Ad hoc Retention Committee appointed by Chancellor Anderson in 2010 (Sandra Robertson --- chair)

In Summer 2010, Chancellor Anderson appointed a Retention Committee to propose an organizational structure that would result in an improved graduation rate. The Retention Committee recommended the creation of an Associate Vice Chancellor position designed to be the campus-wide champion for student success. While student success is everyone's responsibility, the person in this position will lead the charge. The Associate Vice Chancellor for Student Success will report to the Provost.

Attentive leadership initiatives:

Establishment of a standing retention committee of the University Assembly devoted to student success.

Mandatory early declaration of a major

Requiring first year students to live on campus and to participate in a mandatory meal plan --- all part of the need to develop a sense of community among students.

Intense focus on the individual student initiatives:

Creating advising positions in appropriate colleges as needed.

Expanding services to students on academic probation

Expanding intrusive advising to students who are at the developmental level in math.

Expanding existing model mentoring programs such as the African-American Male Initiative

Mandatory First Year Experience course, possibly developed at the college level

Expanding high-impact activities and experiences

Making funding available for pilot projects aimed at student success

Student Success Initiatives and Projects Update (Compiled August 2012 by Daryl Rice)

- Work with new VCEM to integrate retention with overall strategic enrollment management plan
- Constitute University Retention Committee
- Develop comprehensive retention plan
- Plan for early warning system: will need policy changes (e.g., mandatory attendance monitoring and entry of midterm grades into Banner system) and software (e.g., Starfish or similar product)
- Begin compilation of a master advising manual and website
- Shape position for full-time advising trainer

Distinguishing UALR (Provost Unit Head's Retreat 2016)

- Establish a Commuter Student Learning Center
 - List apartments and homes for rent
 - List scholarships and other resources
 - Advocate self-care
 - Provide workshop opportunities in writing, math, research skills and technology
- Evening orientations
- Hold a high-impact Advising Day at top feeder schools
 - Waive admissions fees
 - Advise students into majors
 - Include Admissions, Records & Registration and Colleges

- Learn from the programs at UALR that are already making a positive impact, i.e. COB, CWDSA/Bridge, CLC.
- Help students establish “home bases” at UALR as early as possible, through advising, mentoring, peer counseling, and career development.
- Comprehensive scheduling system to ensure each student has the needed classes to stay on track to graduation
- Comprehensive career development, networking and job placement support center
- Student hotline
- Scholarship opportunities for graduate students
- Graduate student and family housing options

Opportunity Analysis (2018 by Rob Baird, Ruffalo Noel Levitz)

Develop a multi-year strategic enrollment plan that is data-based and results in very specific five-year enrollment goals (intake and total) by:

- Academic program
- First-year vs. transfer
- Nontraditional
- Graduate
- Undergraduate
- Online
- Off-site
- Commuter
- Geographic market, including internationals
- Male/Female
- Large co-curricular programs
- Academic quality
- Discount rate/net revenue

Move to a centralized true Enrollment Management office

- All** recruitment and admission staff should be in the Office of Enrollment Management
 - Plan for benchmarking resources with enrollment growth
- Organizational planning and recommendations

Continue to diversify revenue streams

- Grow Graduate and Adult markets
- Seven-to-eight week programs
- Evening, weekend, Online
- Student service hours
- Advising

- Online
- Evening

Willingness to acknowledge our best programs and take it on the road

- Expand outcome information -quantify
- Grad placement rates, job placement rates –by program, salaries

Market research

- Academic program demand analysis
- Non-matric survey
- Paired research

Role faculty play in enrollment management

- Willingness to participate
- Nothing formalized
- Pre-made e-mails
- Targeted phone calls

Further Develop an Annual Marketing & Recruitment Plan

- Conduct a situational analysis to include collecting, developing, and/or compiling all pertinent data and information
- Establish quantifiable, measurable, and realistic recruitment goals that are mutually agreed-upon by all whose efforts must achieve them
- Formulate key strategies in order to achieve goals that are prioritized, measurable, clear, specific and realistic
- Develop actions plans by each key tactic that will identify staff responsibility, clear beginning and end dates, measurable objectives, and budget information
- Develop and track key metrics and monitor recruitment-related net revenue

Campus visit recommendations:

- Track conversion rates by unique events
- Consider graduated travel reimbursement program
- Need to have student lead tours
- Meet with academic area of interest
- Open Houses/Visit Day (2 in Fall, 4 in Spring)
- Consider having a student panel

Financial Aid recommendations

- Adjust to Prior-Prior?
- Engagement -yes
- Packaging –hope to change in '19
- Late awarding compared to competitors
- Students need to get a paper award letter
- Currently e-mail –portal
- Need to revise award notification
- Cost –aid –balance
- Verification policy
- Don't do estimates

Better communication to students about FA timelines

- Multiple channels
- Include parents
- Scholarship application
- What do you ask that you don't get from the general application?
- Institutional gift aid
- Standardized test and GPA
- Address stacking of scholarships

Recommendations to increase student success:

One person needs to be the chief retention officer

- Clearly defined
- Clear goals
- Not just overall
- Cohorts
- Diversity, Programs, economic, etc.
- Developing a retention committee
- All retention activities come through this group
- Decision makers at the table

Develop retention plan to include all retention activities

Develop real time dashboards to track term behavior

•Accounts Receivable, Housing, Financial Aid, Registration

•Entering student survey

Orientation

- Eight (8) FY options
- Five (5)Transfer options
- Procedural & indoctrination
- Advising
- Required for First-Year not Transfers

First Year Experience –how to be a successful college student academic development

- Required for all First Time In College
- Departmental or general

Evaluations of all transition programs

- More committed...
- Add a stronger career component
- Add a stronger component of setting expectations

Advising

Professional & Faculty Model

- Professional until 45 hours
- Faculty after 45 hours
- Do a better job of off & on ramps
- Develop soft landing programs
- Develop advising training

Institutional definition and expectation of advising?

- Registration vs. Advising
- Reward and recognition for good advising

Academic support

Eliminated Student Success Center?

- Tutoring
- Departmental level
- Not all have
- Writing Center
- Math Center
- Communication Skill Center
- Academic Literacy class

Student services and life support

Residential life staff philosophy

- Peer mentors
- Resource

- Counseling services
- Ratio is 1-to-2,583
- Wait time is one week
- 2,300 sessions last year

Intervention

No formalized Early Alert system

- Piloting First Year Experience
- Best practice
- Early
- % of faculty embrace
- Whoever reaches out to student needs to be someone in the student's inner circle
- Adviser, FYE instructor, RA, etc.