# RETENTION & GRADUATION ISSUES

Division of Enrollment Services
2013

UNIVERSITY OF ARKANSAS
ENROLLMENT SERVICES

## INTRODUCTION

In the past 4 years the freshman class enrollment at the University of Arkansas has increased over 57 percent. This increase has brought with it many shifting characteristics, including increases in diversity, out-of-state students, and female students. In 2012, the university admitted its most academically prepared class to date, with higher average ACT scores and high school GPAs, more AP credits, and an overall first semester grade point average of 3.0. These factors, and many others, play a vital part in our retention and graduation rates. In this report we discuss these factors, how they affect our current and future students, and how we arrive at a graduation rate of 66% and beyond.

## DEMOGRAPHICS

### GENDER

Mirroring a nationwide trend, the University of Arkansas is enrolling a growing percentage of female students.

- Following a long period of a male student majority, the female student percentage exceeded the 50% mark in 2009 and grew to 52.1% in 2012.
- This growth is due mostly to out-of-state enrollment: 49.8% of female students are out-of-state, compared to 43.6% of males.
- Females have higher retention rates and higher graduation rates; however, after controlling for higher high school GPAs, the difference is not statistically significant.

| | Male | Female |
|---|---|---|
| **Caucasian** | 80.2% | 81.5% |
| **Arkansan** | 56.4% | 50.2% |
| **Average ACT** | 25.9 | 25.3 |
| **Average HS GPA** | 3.50 | 3.65 |
| **First-Year Retention** | 80.6% | 84.1% |
| **Six-Year Graduation** | 55.8% | 63.4% |

**ETHNICITY**

In recent years, we have also seen an increase in non-Caucasian students. This is a positive step toward creating an environment that is welcoming to all students, as well as a move toward providing more opportunities for students to engage with and learn from students with a diverse range of backgrounds and experiences. Ten years ago, 17% of our undergraduate population was non-Caucasian, but we have recently seen that number rise to 21%.

- Hispanic students are retained through the first three years at a rate of 65.5% and graduate at a rate about 3-5% lower than that of Caucasian students.
- African American students are retained through the first three years at a rate of 64.3%, about 2.5-3.5% lower than that of Caucasian students, but graduate at a rate that is over 13% lower.
- The graduation rate of African American students who are not athletes is 7.7% lower than Caucasian students.
- These ethnicities have higher percentages of students using Pell Grant and Subsidized Stafford Loan funds, and higher percentages of Hispanic and African American students are first-generation college students.
- Hispanic and African American students also have, on average, lower high school GPAs and SAT/ACT scores.
- With the exception of high school GPAs, these trends are also true of Asian students, who are retained through the first three years at a rates 1.5-6% higher than Caucasian students, but graduate at a rate over 3% less.

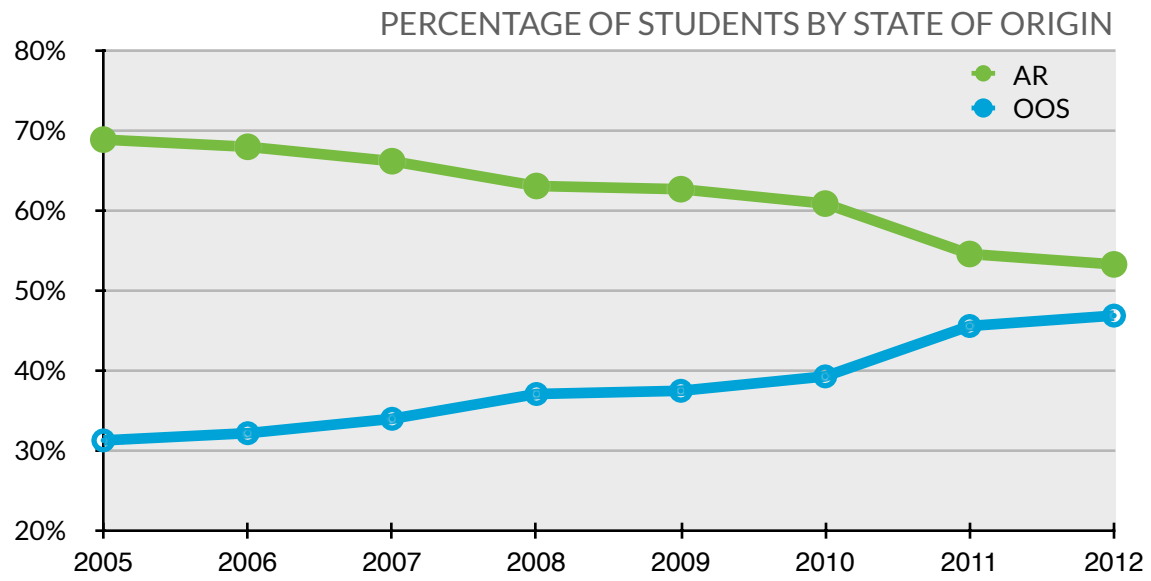
| | Average HS GPA | Average ACT Score | Percent First-Generation | Percent Pell or Subsidized Stafford Loan | First-Year Retention | Second-Year Retention | Third-Year Retention | Six-Year Graduation |
|---|---|---|---|---|---|---|---|---|
| AA | 3.33 | 22.2 | 47.1% | 70.5% | 80.5% | 72.1% | 64.2% | 47.1% |
| AS | 3.66 | 25.1 | 54.7% | 49.5% | 86.6% | 76.1% | 73.3% | 57.1% |
| CA | 3.59 | 25.5 | 24.5% | 27.8% | 82.8% | 74.7% | 67.6% | 60.4% |
| FO | 3.39 | 23.4 | 16.8% | 0.0% | 90.1% | 82.8% | 80.0% | 75.9% |
| HI | 3.50 | 24.2 | 52.4% | 47.9% | 79.7% | 69.9% | 65.5% | 55.7% |
| IN | 3.60 | 24.3 | 40.8% | 43.7% | 68.8% | 58.8% | 50.0% | 49.5% |
| TM | 3.57 | 25.8 | 37.8% | 46.3% | 78.6% | 68.4% | 53.1% | 74.1% |

At first glance, these trends appear to represent a significant challenge, since we do not retain and graduate all ethnicities at equal rates. However, as discussed in the Overall Statistical Analysis section below (pg. 20), this is not actually the case.

**STATE**

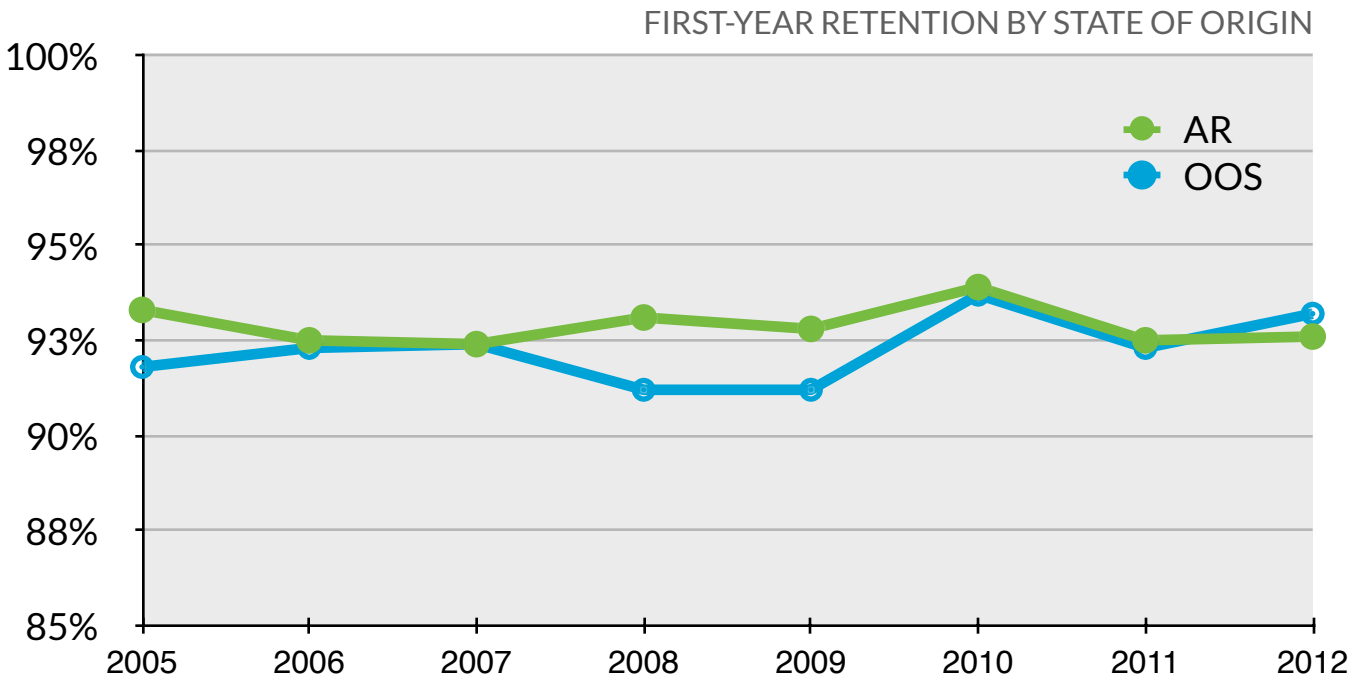
The University of Arkansas has significantly increased in popularity among out-of-state students in recent years and has attracted not only an increased quantity of students but also students who are increasingly successful.

- In 2005, 31.2% of cohort students were from out-of-state.
- The 2012 cohort was 45.8% out-of-state students.
- Out-of-state students long lagged behind Arkansans in retention rates, over 5% behind in 2005, despite very similar ACT scores and high school GPAs and even higher first semester GPAs than Arkansans.




| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|
| AR | 68.8% | 67.9% | 66.1% | 63.0% | 62.6% | 60.8% | 54.5% | 53.2% |
| OOS | 31.2% | 32.1% | 33.9% | 37.0% | 37.4% | 39.2% | 45.5% | 46.8% |

- In the past few years this trend has reversed, with out-of-state students not only catching up to Arkansans but pulling slightly ahead. If first-semester retention is any indication, and it usually is, the 2012 cohort of out-of-state students will pull even further ahead of Arkansans.




| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|
| AR | 93.3% | 92.5% | 92.4% | 93.1% | 92.8% | 93.9% | 92.5% | 92.6% |
| OOS | 91.8% | 92.3% | 92.4% | 91.2% | 91.2% | 93.7% | 92.3% | 93.2% |

**FIRST-GENERATION STUDENTS**

First-generation college students – those whose parents did not earn a degree – face a number of hurdles that their non-first-generation counterparts do not.

- First-generation students represent a significant portion of the University of Arkansas student body, accounting for over one fourth of students in our incoming student cohorts.

- First-generation students are more likely to be minority students, more likely to be from Arkansas, and much less likely to succeed even after accounting for other factors.
- The retention rate of first-generation students is not only lower, but has declined more rapidly. First-year retention for the fall 2011 cohort declined by 1.3% for our non-first-generation students, but declined by 6.3% for our first-generation students. This decrease occurred despite zero change in average high school GPA or ACT score from the previous year.

Only recently have we started to see a change in the percentage of our cohorts that are first-generation.

- From 2005 to 2010, the percentage of first-generation students remained consistently around 29%.
- In 2011, this dropped to 26.7% and then to 26.1% in 2012.

While this has the potential to partially offset overall decreases in retention and graduation rates, it is also potentially disadvantageous in terms of diversity and maintaining the balance of Arkansans and out-of-state students.

| | First-Generation | Non-First-Generation |
|---|---|---|
| Caucasian | 69.5% | 85.3% |
| Arkansan | 74.0% | 58.1% |
| Female | 53.8% | 50.2% |
| Average ACT | 24.4 | 25.6 |
| Average HS GPA | 3.50 | 3.60 |
| First-Year Retention | 75.2% | 84.4% |
| Six-Year Graduation | 47.7% | 63.6% |

# PRE-COLLEGE ACADEMIC FACTORS

## GRADE POINT AVERAGE

A student's academic history plays an important role in how he or she performs in college. Generally, the pre-college performance indicators that are used to predict college performance are the student's high school GPA and his or her score on standardized tests, such as the ACT or SAT. However, not all measures of performance measure equally well.

- Using a linear regression, high school GPA proves to be a significant predictor of first-year cumulative GPA with $R^2$=.351. This indicates that 35.1% of the variance in first-year cumulative GPA can be explained by high school GPA.
- Replacing high school GPA with ACT composite results in $R^2$=.174 indicating that only 17.4% of the variance in first-year cumulative GPA can be explained by ACT composite.
- If ACT Math and ACT English are used as predictors, omitting ACT Reading and ACT Science Reasoning, $R^2$ increases to .197.

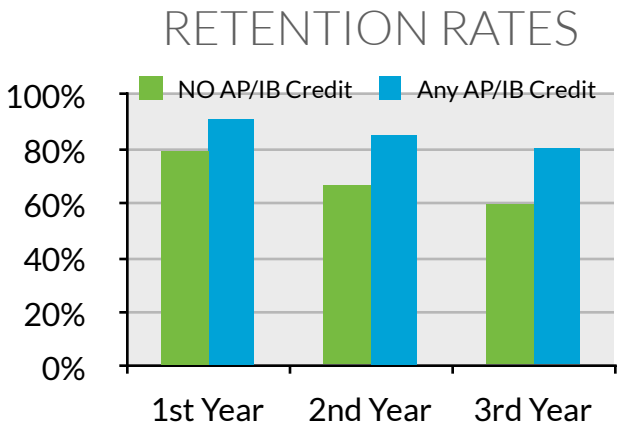
## HIGH SCHOOL

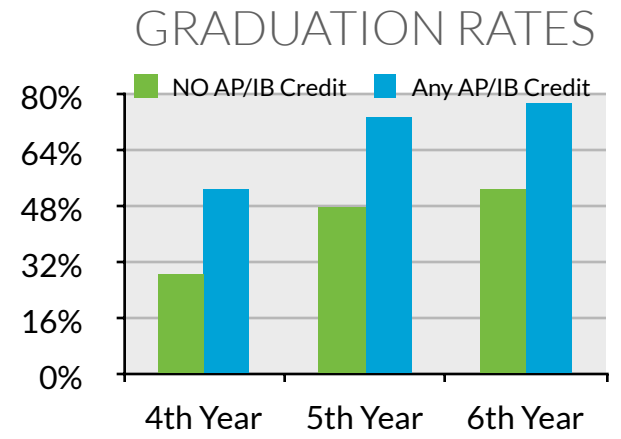
- Since not all high schools award grades equally, it is difficult to know if GPAs from one school are comparable to another.
- To account for these differences, a baseline was created using the average high school GPA of University of Arkansas graduates for each high school that has had at least three students graduate from the university.
- This baseline is only slightly better statistically than high school GPA alone; however, it allows for specific targeting of students based on high school.

## ADVANCE PLACEMENT/INTERNATIONAL BACCALAUREATE CREDIT

In recent years the university has seen a rapid increase in Advanced Placement and International Baccalaureate credit. This increase is very promising for our future retention and graduation rates.

- Between the cohort years of 2009 and 2011, there was an increase of 42.9% in AP/IB credit brought to the university by cohort students.
- As seen in the graphs below, students who earn any amount of AP/IB credit are 12.5% more likely to be retained to the second year and are 24.2% more likely to graduate within six years.
- Students who earn AP/IB credit enroll with higher average high school grade points averages and ACT scores; however, statistical tests reveal that AP/IB credit is a significant predictor even after controlling for prior academic ability.
- Statistical analysis also suggests that with enough AP/IB credit, lower high school grade point averages can be offset.



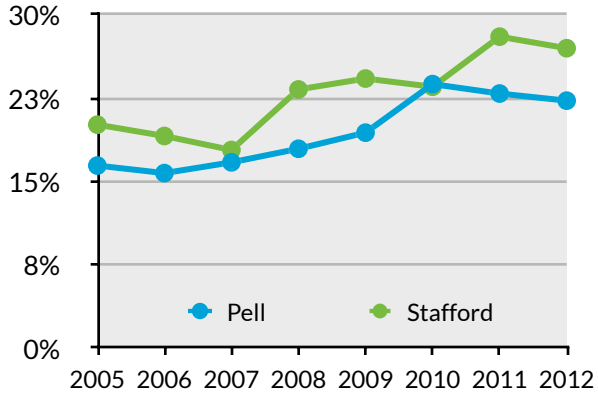




- For example, a student with a 3.50 high school GPA with 9 hours of AP/IB credit is as likely to graduate as a student with a 3.75 high school GPA and no AP/IB credit.

| | Retention | | | Graduation | | |
|---|---|---|---|---|---|---|
| | 1st Year | 2nd Year | 3rd Year | 4 Year | 5 Year | 6 Year |
| No AP/IB | 79.2% | 66.9% | 60.2% | 29.3% | 48.1% | 53.3% |
| Any AP/IB | 91.6% | 85.0% | 80.2% | 53.1% | 73.6% | 77.5% |
| Overall Average | 81.8% | 70.7% | 64.4% | 34.3% | 53.4% | 58.4% |

## PELL GRANTS AND SUBSIDIZED STAFFORD LOANS

The university only collects income information on students who fill out the FAFSA, and overall, this group is likely not representative of the population. Therefore, need-based aid programs, specifically Pell Grants and Subsidized Stafford Loans, are used as a proxy for income. While these are far from optimal measures of income, they do prove to be statistically significant predictors of retention and graduation even after controlling for lower high school grade point averages.




| YEAR | PELL | STAFFORD |
|---|---|---|
| 2005 | 16.45% | 20.13% |
| 2006 | 15.77% | 19.11% |
| 2007 | 16.74% | 17.85% |
| 2008 | 17.96% | 23.30% |
| 2009 | 19.41% | 24.28% |
| 2010 | 23.78% | 23.54% |
| 2011 | 22.93% | 28.05% |
| 2012 | 22.29% | 27.01% |

- Since 2005, the percentage of cohort students receiving Pell Grants and Subsidized Stafford Loans has increased dramatically.
- Pell Grants have increased from 16.5% in 2005 to 23.8% in 2010. It has dipped, however, to 22.3% in 2012. This decrease is almost entirely based on the increased proportion of out-of-state students.
- The percentage of cohort students receiving Subsidized Stafford Loans increased from 20.1% in 2005 to 28.0% in 2011. It also dipped slightly in 2012 to 27.0%.
- Between 2005 and 2012, both groups of students were more diverse than the individual cohorts: 33.7% of students receiving Pell Grants and 23.8% of those receiving Subsidized Stafford Loans are non-Caucasian.
- From 2005 to 2012, the overall cohort diversity average is 16.3% non-Caucasian.
- Retention and graduation rates for students receiving Pell Grants and Subsidized Stafford Loans are significantly lower than for students who do not receive either.

- First-year retention rates for students receiving Pell Grants are 7.4% lower than for those who do not.

| ETHNICITY BY PELL GRANT STATUS (2005 - 2012) | | | |
|---|---|---|---|
| | No Pell | Pell | Overall |
| AA | 2.76% | 13.33% | 5.21% |
| AS | 1.57% | 4.51% | 2.25% |
| CA | 87.24% | 64.27% | 81.91% |
| HI | 4.17% | 9.98% | 5.52% |
| HW | 0.04% | 0.10% | 0.06% |
| IN | 0.91% | 1.95% | 1.15% |
| NR | 0.11% | 0.14% | 0.12% |
| TM | 3.11% | 5.68% | 3.71% |
| UN | 0.08% | 0.03% | 0.07% |

| ETHNICITY BY SUBSIDIZED STAFFORD LOAN STATUS (2005 - 2012) | | | |
|---|---|---|---|
| | No Sub Staff | Sub Staff | Overall |
| AA | 3.32% | 10.11% | 4.94% |
| AS | 2.48% | 2.50% | 2.49% |
| CA | 85.96% | 76.24% | 83.65% |
| HI | 4.17% | 5.23% | 4.42% |
| HW | 0.03% | 0.08% | 0.04% |
| IN | 1.45% | 1.99% | 1.58% |
| NR | 0.33% | 0.24% | 0.31% |
| TM | 2.05% | 3.52% | 2.40% |
| UN | 0.20% | 0.09% | 0.17% |

- This  difference continues to increase through second and third-year retention rates, and the six-year graduation rate for these students is 14.6% lower than for students not receiving Pell Grants.
- First-year retention rates for students receiving Subsidized Stafford Loans are 8.4% lower than for those who do not.
- This difference also continues to increase through second and third-year retention rates, and the six-year graduation rate for these students is 17.8% lower than for students not receiving Subsidized Stafford Loans.

- Retention and graduation rates for those who receive both types of aid are even lower.
- It is important to note that these students do have slightly lower average high school GPAs and ACT test scores; however, statistical tests indicate that these factors are still significant predictors even after controlling for prior academic achievement scores.

| FIRST-YEAR RETENTION BY AID TYPE | | | |
|---|---|---|---|
| | No Sub Staff | Sub Staff | Overall |
| No Pell | 84.8% | 78.2% | 83.9% |
| Pell | 80.4% | 73.7% | 76.5% |
| Overall | 84.3% | 75.9% | 82.4% |

| SIX-YEAR GRADUATION BY AID TYPE | | | |
|---|---|---|---|
| | No Sub Staff | Sub Staff | Overall |
| No Pell | 63.8% | 48.2% | 61.9% |
| Pell | 54.7% | 42.1% | 47.3% |
| Overall | 63.1% | 45.2% | 59.6% |

## ACADEMIC WARNING AND FIRST SEMESTER COURSE GRADES

Students with fewer than 16 hours must earn a 1.5 or higher GPA to stay in good standing. Retention to the second year is highly diminished for students who earn less than a 1.5 grade point average; however, those that correct and earn a 2.0 or higher their second semester are retained to the second year on par with the overall average. At the same time, even the students who correct their grades after being put on academic warning still stand a very small chance of graduating within six years.

- Students who earn less than a 1.5 GPA their first semester graduate at a rate of only 6.1%.
- From 2005 to 2011, the percentage of the incoming cohort earning less than a 1.5 GPA varied between nine and eleven percent.
- In the fall 2012 cohort, only 7.5% of students earned less than a 1.5 GPA.
- Identifying these students prior to their first semester is not always easy.
    - They tend to have lower high school grade point averages and ACT scores, but there are many instances in which this is not the case.
    - While one third had less than a 3.0 high school GPA, the remaining two thirds met the automatic admission high school GPA requirement.

- These students are more likely to be first-generation students and to have financial assistance through a Pell Grant or Subsidized Stafford Loan, though low grades certainly do not describe these groups as a whole.
- A disproportionate number of students earning a 1.5 GPA or less are African American.
- Students of other ethnicities tend to perform about as well or better than Caucasian students in terms of first semester grades.

## EARLY PERFORMANCE PREDICTORS

### EARLY PROGRESS GRADES

Predictions of a student's academic performance that are based solely on pre-college characteristics will always contain a reasonable amount of error because of the variance in how effectively individual students make the transition to college classes and college life. College performance indicators are important; however, most data are unknown until the end of the semester. For a successful early intervention program, mid-semester data is crucial. Currently, the only piece of mid-semester data recorded in ISIS is early progress grades:

- For FY10 and FY11, 17% of sections that should have reported early progress grades either had the same grade listed for every student (9.5%) or did not report on early progress grades (7.5%).
- The correlation between early progress grades and final grades is 0.67, indicating a strong positive relationship.
- 44% of the variance in final grades can be explained by early progress grades.

### ATTENDANCE

With the recent adoption of the campus-wide Turning Technology clicker, attendance has become a feasible mid-semester measure, even in large enrollment courses:

- Evaluation of the effect of attendance in math and political science suggests that attendance plays a strong part in determining final course grade
- Overall, between 20.3% and 21.8% of the variance in final grades can be explained by attendance, even after accounting for prior academic performance.

**COURSE OF STUDY**

Most college students change majors at least once, and one or two changes early in a student's career do not appear to affect their likelihood of graduating within six years. Many students encounter difficulty during their career because they choose a major that is more academically challenging than they are prepared to complete. By looking at the characteristics of previous graduates, we can predict a student's chances of graduating based on his or her course of study and academic preparation.

- Using the average high school GPA of graduates of each department, we created a score to reflect the comparison of an incoming student to the average previously successful student.
- Statistical significance is slightly stronger for high school GPA, and this allows for strategic targeting of students who may be better suited in a different department.
- For example:
    - An incoming freshman with a 3.6 high school GPA who majors in kinesiology is predicted to have a 91.0% chance of being retained to the second year and an 81.0% chance of graduating in six years.
    - An incoming freshman with a 3.6 high school GPA who majors in physics is predicted to have an 80.0% chance of being retained to the second year and a 51.5% chance of graduating in six years.

## HOUSING

The recent surge in new freshman entering the University of Arkansas has resulted in fewer and fewer non-freshman living on campus. Previous years' data suggest that this change will have a negative impact on student success.

- Second year students who lived on campus their second year were more likely to graduate within six years than those who lived off campus, even after accounting for prior academic performance.
- The odds that a second year student living off campus will graduate in six years are 32.2% less than a student who lives on campus.
- A student with a 3.6 high school GPA, our current new freshman average, is predicted to graduate at a rate of 69.9% if they live off campus their second year, compared to 77.4% if they live on campus.

## GETTING THE GRADE

The student-fee supported Enhanced Learning Center provides supplemental instruction and tutoring in a number of academically challenging courses.

- The annual SI report created by the ELC indicates that students who attend more review sessions are more likely to be successful in their courses.
- Attendance in voluntary tutoring sessions is significantly related to retention. For instance, a student with a 3.6 high school GPA who attends 5 tutoring sessions their first year has a predicted retention rate of 91.8%. This rate compares favorably to a predicted retention rate of 83.4% for a similar student who does not attend voluntary tutoring sessions.

## OVERALL STATISTICAL ANALYSES

Factors from the above studies were combined in an effort to understand how they interact with one another and to create an overall prediction model. Factors included are:

- Gender
- Ethnicity
- State (in-state or out-of-state)
- High School GPA
- Whether students received Pell Grant or Subsidized Stafford Loan funds
- First-Generation status
- Department ratio: A ratio of the student's high school GPA to the average high school GPA of students who have graduated from their primary department
- High School Ratio: A ratio of the student's high school GPA to the average high school GPA of students who went to the same high school and have graduated from the university
- AP/IB Credit Marker (0 credits or 1 or more credits).

The population for the analysis is first-time, full-time degree-seeking student cohorts from 2005-2012 (FY06-FY13). Six-year rates are only for 2005-2006 cohorts.

Using six-year graduation as the predicted outcome, an initial logistic regression model was run with all variables. The variables of state, gender, ethnicity, and high school GPA were found to be non-significant.

- For high school GPA, this indicates that, since the student's high school GPA is used in the calculation of the two ratio variables, using it alone is redundant and provides no additional information.
- For gender and ethnicity, this indicates that the actual differences in success between genders and ethnicities are not those factors themselves, but rather a combination of the other variables.
    - This suggests that, for example, a male African American student and a female Caucasian student from the same Arkansas high school with the same high school GPA and 3 hours of AP credit, both of whom are first-generation students who qualify for a Pell Grant, would be predicted to succeed at the exact same rate.

A model using first-year retention as the predicted outcome was also analyzed. However, since a large majority of students return for a second year, even many who have not been especially successful, the prediction model is not as strong.

Three Early Success Indicator models were created to provide options for the timing of an early intervention. These models are:

- Admission – This model utilizes all of the significant pre-college factors listed above. It is advantageous because the information is known before the student starts, likely even before orientation. It is, however, the least reliable option.
- Early Progress – This model adds early progress GPA to the Admission model. By including college performance, the predictive ability of the model is greatly increased.
- First Semester – This model adds first semester GPA to the Admission model. It is more reliable than the Early Progress model; however, waiting until the second semester may be too late for an early intervention.

Each model produces an equation, which student information is plugged into. These equations are listed in the appendix. The results from these equations are the probabilities that the student will graduate within six years. By sorting these cases from least likely to most likely to graduate, an intervention of any size designed to target the students most likely to leave the university without completing a degree is feasible. Using the fall 2009 cohort, each model was applied to all 2,981 first-time, full-time degree-seeking freshman. This resulted in three percentages for each student, one for each model, each indicating the likelihood of success. An intervention of 400 students was selected as an example.

- The tables below indicate the number of students who would have been correctly targeted (Not Retained) by an intervention of 400 students.
- The number under Retained indicates the number of students who would have been targeted for an intervention but were retained without one.

- Using the Early Progress model as an example, 258 students (64.5%) of the 400 students that would have been targeted for intervention did not progress past their third year.
- In all, 951 students in this cohort did not progress past their third year with the intervention targeting 258 (27.1%) of them.

| FIRST YEAR RETENTION | | | |
|---|---|---|---|
| | Not Retained | Retained | Total Intervention |
| Admission | 105 | 295 | 400 |
| Early Progress | 163 | 237 | 400 |
| First Semester | 224 | 176 | 400 |
| Note. Of the 2891 cohort students, 501 were not retained to the second year. | | | |

| SECOND YEAR RETENTION | | | |
|---|---|---|---|
| | Not Retained | Retained | Total Intervention |
| Admission | 162 | 238 | 400 |
| Early Progress | 219 | 181 | 400 |
| First Semester | 290 | 110 | 400 |
| Note. Of the 2891 cohort students, 767 were not retained to the third year. | | | |

| THIRD YEAR RETENTION | | | |
|---|---|---|---|
| | Not Retained | Retained | Total Intervention |
| Admission | 200 | 200 | 400 |
| Early Progress | 258 | 142 | 400 |
| First Semester | 320 | 80 | 400 |
| Note. Of the 2891 cohort students, 951 were not retained to the fourth year. | | | |

## APPROACHING 66%

Using the above models, projections can be made about current cohort graduation rates. These estimations are based on data from over six years ago, and while the significant factors are likely similar, they may not interact in the same way they did for prior cohorts. As newer data becomes available it should be incorporated into the model to ensure accuracy. The following are six-year graduation rate projections for each cohort.

| FALL COHORT | PROJECTED SIX-YEAR GRADUATION RATE |
|---|---|
| 2007 | 60.9% |
| 2008 | 62.6% |
| 2009 | 63.1% |
| 2010 | 64.2% |
| 2011 | 64.9% |
| 2012 | 66.4% |

## PROPOSALS

### EARLY INTERVENTION AND EXPANDED ADVISING

Predicting student success is not a perfect science. While it is commonplace to assume that an incoming student with a high ACT score and high school GPA will be successful and graduate within six years, this is far from a certainty. It is certainly more likely than not, but there are a vast number of other factors - some we maintain data on and some we do not – that impact a student's chance of success. We have students who enroll with many positive indicators but do not succeed and students who enroll with many negative indicators yet do succeed. We know much about students before they attend their first class, but these predictors are imperfect. However, by collecting information early in a student's academic career, early progress grades and perhaps someday attendance, we can improve upon those predictors and act to assist the students most in need. By using a logistic regression that accounts for these factors, we can predict, for each student, a percentage for how likely they are to succeed. A cut point will then be determined, based on available resources, and those students will be contacted for the early intervention program.

## OVERVIEW

The early intervention program itself will look like a blend of advising and office hours with a strong emphasis on connecting the students to campus resources that can help them. Once it is determined that a student should be included in the early intervention program, he or she will receive an email from an advisor requesting a meeting within a certain time period. If the student does not respond to the request, the advisor will try additional emails and possibly other means of communication with a student. The nature of the meeting will be determined by the advisor and the student but will likely focus on topics such as study skills, time management, class participation, campus involvement, and other strategies for success. Students will be expected to participate, but they will not be forced. With limited resources, it is preferable to spend those resources on students who are willing to be helped.

## ADVISORS

Advisors for the program will be current advisors for the colleges, residence directors, student affairs professionals and possibly instructors of lower level classes who are familiar with the struggles of students at this level. The number of students included in the early intervention program would be determined by the number and availability of these advisors. Inclusion in the intervention would be determined by one of the three prediction models outlined earlier in this report.

## MANDATORY ATTENDANCE

Based on the aforementioned clicker study, it is clear that student attendance has an impact on student performance. To encourage student attendance, it is proposed that, for all 1000 and 2000 level courses, attendance be reported into ISIS along with early progress grades. With the university-adopted Turning Technology clicker system, this would be a fairly simple process for faculty, even those teaching large sections, and it is a process that comes at no additional cost to the university.

## STUDENT TRACKING

Accurately predicting retention is very important; knowing why students leave the university and where they go afterward is equally crucial. Mid-semester withdrawers fill out an exit survey which is useful, but this survey does not capture those students who leave between semesters. To capture this information, this survey, or one very similar, should also be administered to students who did not leave mid-semester. As students will no longer have access to their uark.edu email addresses, this would likely need to be a mail survey or phone interview, both of which generally have higher response rates than email surveys. A randomly selected group of students should be recruited each year to participate in the survey and responses should be coded into groupings, such as financial issues, health issues, family issues, academic issues, etc. Responses that indicate that the university could have done something to prevent the stop-out should be forwarded to the department responsible for handling such issues for future policies and training.
Student transfer information can be acquired through the National Student Clearinghouse. Students who transfer still count against our retention and graduation rates, but in predicting retention and graduation, a transfer should be seen as something very different than a stop-out.

## TRACKING CAMPUS INVOLVEMENT IN A CENTRAL LOCATION

More student data is needed to improve the accuracy of the early intervention program's predictions. Academic data is housed in ISIS and is therefore accessible to administrators on campus with ISIS access. However, much information that is obtained on U of A students is known only to the department that collects it. This includes, but is not limited to athletic event attendance, participation in intramural sports or other University Recreation activities, attendance of University Program concerts and shows, on-campus housing information, RSO involvement, tutoring and Supplemental Instruction participation, academic integrity cases, and community engagement.

**Appendix**

Admissions Model

$$\frac{e^{(-6.526+4.964*HS\ Ratio+1.981*Dept\ Ratio+0.299*Pell/Stafford+0.427*FirstGen-0.39*AP/IB)}}{1+e^{(-6.526+4.964*HS\ Ratio+1.981*Dept\ Ratio+0.299*Pell/Stafford+0.427*FirstGen-0.39*AP/IB)}}$$

Early Progress Model:

$$\frac{e^{(-6.564+3.615*HS\ Ratio+1.26*Dept\ Ratio+0.285*Pell/Stafford+0.381*FirstGen-0.145*AP/IB+0.721*Early\ Progress\ GPA)}}{1+e^{(-6.564+3.615*HS\ Ratio+1.26*Dept\ Ratio+0.285*Pell/Stafford+0.381*FirstGen-0.145*AP/IB+0.721*Early\ Progress\ GPA)}}$$

First Semester Model:

$$\frac{e^{(-6.393+3.104*HS\ Ratio+.262Pell/Stafford+0.342*FirstGen+1.197*First\ Semester\ GPA)}}{1+e^{(-6.393+3.104*HS\ Ratio+.262Pell/Stafford+0.342*FirstGen+1.197*First\ Semester\ GPA)}}$$