



**Where do they go?
An Examination of Dropouts from the University of Georgia**

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Overview

This study was originally completed in the Spring of 2008 and the findings presented at the 2008 Association of Institutional Researchers (AIR) Forum in Seattle, Washington. This report is a summary of the findings. The full version of this paper including the literature review, research findings, and conclusions can be found at <http://www.uga.edu/oir/reports/2008/WheredotheygoFinalversion.pdf>

This study examines students who left UGA before graduating and whether they enrolled in another institution (persisted) and if they were successful (graduated with bachelor degree within 6 years of their initial enrollment at UGA). Four freshman cohorts who entered UGA from 1998-2001 (N = 17,416 individual students) were studied over six years. Students were classified into two groups, retained or not retained after six years. A student was considered retained if the student had graduated or was still enrolled at UGA in a bachelor degree program at the end of six years. A student was considered not retained if they had not graduated and were not enrolled at UGA in a bachelor degree program at the end of six years. Non-retained students were additionally examined to determine if they enrolled in and graduated from another institution.

Historically, concerns about student retention and persistence have been largely focused at the institutional level. In the last few years, policy makers have become more interested in student retention and persistence not only within an institution, but also at the state and federal level (Titus, 2006). Much of the increased governmental attention on retention and persistence is due, in large part, over accountability and efficiency concerns of higher education. Greater governmental oversight is pushing institutions to justify the large government subsidies they are receiving. If a student successfully graduates from another institution after they dropout, why were they not successful at the original institution? Universities are looking for ways to understand their students' progression towards degree completion; the more they know about their students and what makes them successful (even at other institutions), the more it allows them to design effective retention programs and policies.

Summary of Findings

In general, academic performance at UGA is indicative of the success students experience at their transfer school. Students with higher cumulative GPAs and who did not earn academic probation had increased odds of being successful (graduating) at the transfer institution. Females had higher odds of graduating from another institution after dropping out from UGA than males. These two results are in-line with national research findings that females earn higher grades and earn more degrees than males (National Science Foundation, 1996; National Science Foundation, 2007).

Parental education also played a significant factor in a student's success after transferring. The transmission of the importance of graduating from college from a parent may have influenced the desire of a student to complete a bachelor degree. This would be in-line with Bourdieu's (1977) concept of "habitus". "Habitus" is embedded set of values, beliefs, and attitudes an individual uses to make choices in their life and is derived from an individual's family, friends, and environment. All interactions and choices are filtered

through one's "habitus", thus all actions are based on an individual values and interpretation of what one "sees" (Bourdieu, 1977). A student that has a parent with a bachelor degree would likely be in an environment where the student can "see" and experience the opportunities available by having a bachelor degree and will likely have their aspirations to earn the bachelor degree for themselves enhanced.

In general, students who transfer to institutions with the same or better admissions selectivity as UGA are more successful (graduate) than those who transfer to less selective schools. In looking at the admissions selectivity of the institution the transfer student graduated from, just under half (45.7%) graduated from an institution that had the same or better admissions selectivity rating as UGA. This is up from the rate of transfer enrollees that transfer to institutions that had the same or better admissions selectivity rating (36.1%) as UGA. The results of the binary logistic regression also confirm this finding by showing that by enrolling in an institution that had the same or better admissions selectivity as UGA, a student increases the odds of graduating with a bachelor degree by a factor of 7.905

Data & Methods

Student demographic and financial data was paired with academic data for each semester through a total of 6 years (18 semesters). Students identified as not retained had their UGA data paired with enrollment and graduation data from the Student Tracker database compiled by the National Student Clearinghouse. Over 3,100 institutions (accounting for 91% of all enrolled post-secondary students) contribute enrollment and graduation reports to the National Student Clearinghouse (National Student Clearinghouse, 2008). An institutional selectivity rating was assigned to each institution which had a former UGA student enroll using the 1997 Barron's Educational Series institutional selectivity rankings (1998)¹. The choice to use these 1997 rankings was made because the first cohort used in the study enrolled in 1998 and it closely approximated the selectivity of institutions at the time students in the sample were applying for admission.

A series of descriptive statistics and one-way ANOVAs were followed by a binary logistic regression analysis to examine potentially contributing factors of students persisting and being successful (graduated) in higher education after leaving UGA. Basic descriptive statistics and correlation analyses provide an understanding of students who persisted and who were successful (graduated) and the general relationship among the factors (variables) that relate to persistence. A binary logistic regression was developed to determine the effects of the independent variables on students who earned a bachelor degree from another institution after they had left UGA².

¹ The selectivity rankings include most 4 year schools, but did not rank many 2-year institutions. All medical schools (mainly due to transfers for nursing bachelor degrees) and pharmacy schools transferred to were considered same selectivity as UAG as they were not ranked in selectivity.

² Two binary logistic regressions were originally planned and developed (one for whether a student enrolled in another institution and one if a student graduated with a bachelors degree within six years from initial start date at UGA) – the binary logistic regression for whether a student enrolled in another institution after leaving UGA did not meet goodness of fit tests and was subsequently left out of the analysis.

General Findings

There were 3,664 students (21% of the four freshman cohorts) who were not retained after 6 years from their initial enrollment at UGA. In general, retained students had higher admission profiles than non-retained students (high school GPA, SAT scores, and predicted GPA; $p < .01$ for all three variables). Table 1 shows the mean averages for the entire sample, all retained students, and all non-retained students.

Table 1: Admissions Profile of Students

	All Students	All Retained Students (6 Years)	All Non-Retained Students (6 Years)
HS GPA (Mean)	3.54	3.57	3.41
SAT (Mean)	1193	1198	1172
Predicted GPA (Mean)	3.05	3.09	2.93

Looking at academic performance at UGA, retained students, in general, performed higher academically than non-retained students (Table 2; $p < .01$ for six variables). For non-resident students, the difference in grades earned at UGA between retained and non-retained was smaller than the difference in grades between retained and non-retained for resident students. Non-resident students had 1st Fall Term GPAs of 2.73 for non-retained and 3.13 for retained ($p < .01$) and had Cumulative GPAs of 2.66 for non-retained and 3.32 for retained ($p < .01$).

Table 2: Academics

	All Students	All Retained Students (6 Years)	All Non-Retained Students (6 Years)
Academic Probation 1st Fall	8%	4%	23%
Academic Probation Ever	14%	7%	39%
Term GPA 1 st Fall (mean)	2.97	3.10	2.48
Term GPA 1 st Spring (mean)	3.01	3.14	2.45
Final Cumulative GPA (mean)	3.08	3.26	2.35
Dean's List Ever	59%	69%	21%

Enrollment – General

The majority of the non-retained students continued to persist in higher education after leaving UGA. 61.2% of all non-retained students (2,243 students) enrolled in another institution after leaving UGA (transfer enrollees). Of the transfer enrollees, 71.2% (1,598 students) enrolled in another institution within the state of Georgia and 58.1% (1,303) enrolled in another USG institution.

Enrollment - Residency

When a non-retained student did persist, they typically enrolled in another institution close to their home. Of the transfer enrollees, 81.3% (1,823 students) enrolled in an institution within the same state as their residency. For resident transfer enrollees, 82.6% (1,574 resident students) enrolled in another institution within Georgia. For non-resident transfer enrollees, 73.9% (249 non-resident students) enrolled in another institution within the same state as their residency.

Enrollment – Selectivity

In looking at the admissions’ selectivity of the institutions which transfer enrollees enrolled, 36.1% (592 students) of all transfer enrollees enrolled in an institution with the same or high admissions selectivity as UGA.³

Differences – Transfer Enrollees & Non-Enrollees

Table 3 shows the differences in demographics, financial-aid received, and academic performance of transfer enrollees and non-retained students who did not enroll in another institution (transfer non-enrollees). Transfer enrollees had higher rates of being female and having at least one parent with a bachelor degree than transfer non-enrollees (p<.01). Transfer enrollees and transfer non-enrollees had similar ethnicity/race composition and rates of receiving the HOPE scholarship and non-need based financial aid (p<.01). Transfer non-enrollees had comparable (albeit slightly lower) high school academic performance, but performed significantly lower academically at UGA than transfer enrollees (p<.01). This is evidenced through SAT scores; predicted, high-school, first-year and cumulative GPAs; and the rates of earning academic probation. Transfer non-enrollees had higher rates of receiving need-based financial aid and Pell grants than transfer enrollees (p<.01).

Table 3: Differences between transfer enrollees and transfer non-enrollees

	Transfer Enrollees	Transfer Non-Enrollees
Female	63.4%	43.2%
Received Need Aid 1st Fall	19.0%	24.0%
Received Pell 1 st Fall	9.5%	13.0%
1 Parent w/Bachelor Degree	68.6%	55.2%
Academic Probation 1st Fall	19.8%	36.2%
Academic Probation Ever	29.9%	52.3%
Predicted GPA (mean)	2.97	2.88
Term GPA 1st Fall @UGA (mean)	2.58	2.32
Term GPA 1st Spring @ UGA (mean)	2.58	2.26
Final Cumulative GPA @ UGA (mean)	2.53	2.06

Graduation – General

Roughly one-fourth (28.6%) of all non-retained students and just under half (46.7%) of the transfer enrollees earned a bachelor degree from another institution within 6 years of their initial enrollment at UGA (transfer graduates). 1,048 students earned a bachelor degree from another institution after leaving UGA. Of transfer graduates, 69.9% (733 students) earned a bachelor degree from another institution within Georgia and 63.9% (670 students) earned a bachelor degree from another USG institution.

³ The vast majority who enrolled in a non-ranked (selectivity) institution enrolled at a 2-year community college or specialized institution (ex: art & design school, school for arts, etc.).

Graduation – Residency

When a non-retained student did graduate from another institution, they typically earned a bachelor degree from an institution close to their home. Of the transfer graduates, 82.5% (865 students) earned a bachelor degree within the same state as their residency. For resident transfer graduates, 84.0% (719 resident students) earned a bachelor degree from another institution within Georgia. For non-resident transfer graduates, 76.0% (146 non-resident students) earned a bachelor degree from an institution within the same state as their residency.

Graduation – Selectivity

In looking at the admissions’ selectivity of the institutions from which transfer graduates earned a bachelor degree, 95.4% (1,000 students) graduated from a school which was ranked by the Barron’s admission selectivity ranking. 45.7% (457 students) of all transfer graduates from a ranked institution (43.6% of all transfer graduates) earned a bachelor degree from an institution with the same or high admissions selectivity as UGA

Differences – Transfer Graduates & Non-Graduates

Table 4 shows the differences in demographics, financial-aid received, and academic performance of transfer graduates and non-retained students who do not graduate from another institution (transfer non-graduates). Transfer graduates had higher rates of being female and having at least one parent with a bachelor degree than transfer non-graduates ($p < .01$). Transfer graduates and transfer non-graduates had similar ethnicity/race composition and rates of receiving the HOPE scholarship and non-need based financial aid. Transfer non-graduates performed academically lower in both high school as well as at UGA than transfer graduates ($p < .01$). This is evidenced through SAT scores; predicted, high-school, first-year and cumulative GPAs; and rates of earning academic probation. Transfer non-graduates had higher rates of receiving need-based and Pell grant financial aid than transfer graduates ($p < .01$).

Table 4: Difference between transfer graduates and transfer non-graduates

	Transfer Graduates	Transfer Non-Graduates
Female	74.2 %	48.1 %
Received Need Aid 1st Fall	16.2 %	22.8 %
Received Pell 1st Fall	7.2 %	12.4 %
1 Parent w/Bachelor Degree	72.8 %	59.6 %
Academic Probation 1st Fall	7.0 %	29.6 %
Academic Probation Ever	10.5 %	49.8 %
Predicted GPA (mean)	3.04	2.89
Term GPA 1st Fall @ UGA (mean)	2.96	2.29
Term GPA 1st Spring @ UGA (mean)	3.01	2.23
Final Cumulative GPA @ UGA (mean)	3.00	2.08

Binary Logistic Regression

In order to more fully examine the relationship between non-retained students and the contributing factors leading them to graduate from another institution, a binary logistic regression was developed. Binary logistic regression was chosen due to the dependent variable being binary (Yes, student graduated with a bachelor degree from another institution/No, student did not graduate with a bachelor degree from another institution) and is a model that can appropriately handle binary dependent variables. The following independent variables were used in the binary logistic regression⁴.

- Residency status (in-state/out-of-state)
- Gender
- Final cumulative GPA
- First fall term GPA
- Earned academic probation (ever)
- If at least 1 parent earned a bachelors or graduate degree
- Graduated from institution with same or better selectivity than original institution

The Cox-Snell R² and Nagelkerke R² are attempts to provide a logistic analogy to R² in OLS regression. The Nagelkerke measure adapts the Cox-Snell measure so that it varies from 0 to 1, as does R² in OLS. The pseudo R² produced by both measures provide good explanations in the variance of who graduates after transferring. The Nagelkerke R² is .428, indicating the model explains 42.8% of the variance in transfer graduates by the coefficients in the model.

Model Summary

Step	-2 Log likelihood	Cox & Snell R ²	Nagelkerke R ²
1	3087.897	0.298	0.428

The Hosmer and Lemeshow Goodness-of-Fit Test divides subjects into deciles based on predicted probabilities, and then computes a chi-square from observed and expected frequencies (Hosmer & Lemeshow, 2000). The p-value = .383 here indicates that the logistic model is a good fit (If the Hosmer and Lemeshow Goodness-of-Fit Test is .05 or less, we would reject the null hypothesis that there is no difference between the observed and predicted values of the dependent variable – student graduated from another institution after transferring). As the p-value is greater than .05, we fail to reject the null hypothesis that there is no difference, implying that model’s estimates fit the data at acceptable levels.

Table 5 shows the variables in the equation and the results of the model. It shows the coefficients (B), their standard errors, the Wald-Chi-Square statistic, associated p-values, and odds ratio (Exp (B)). The Wald statistic and the corresponding significance level test the significance of each of the covariates in the model (Savin & Würtz, 2001). The ratio of the logistic coefficient B to its standard error, squared, equals the Wald statistic (Savin & Würtz, 2001). If the Wald statistic is significant (i.e. less than .05) then the parameter

⁴ The full list of independent variables from the methods section of the full research paper were originally included in the full model but were removed from the final model after showing statistically insignificant or collinearity with other independent variables. Some specific variables removed include race/ethnicity, receipt of HOPE scholarship, receipt of non-need financial aid, and receipt of Pell Grant.

is significant in the model. Results show that all of the independent variables are significant in this model.

Table 5: Variables in the Binary Logistic Equation

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
In-State Resident	-0.744	0.124	36.187	1	0.000	0.475
Female	0.788	0.097	66.682	1	0.000	2.199
Final Cumulative GPA	0.919	0.096	91.113	1	0.000	2.508
Term GPA - 1st Fall	-0.451	0.084	28.976	1	0.000	0.637
Earned Probation (Ever)	-1.062	0.142	55.936	1	0.000	0.346
Parents Education >= Bachelor	0.365	0.098	13.886	1	0.000	1.440
Selectivity of Transfer School >=	2.068	0.119	303.969	1	0.000	7.905
Constant	-2.279	0.245	86.495	1	0.000	0.102

The Exp (B) is the label for the odds ratio of the independent variable with the dependent variable (transfer graduate). It is the predicted change in odds for a one unit increase in the corresponding independent variable. Odds ratios less than 1.0 correspond to decreases and odds ratios more than 1.0 to increases in odds. Odds ratios close to 1.0 indicate that unit changes in that independent variable do not affect the dependent variable. In this model, for every one unit increase in first fall GPA, the odds of graduating from another institution after transferring increase by a factor of .637 (actually decreasing in probability). For every one unit increase in cumulative GPA, the odds of graduating from another institution after transferring increase by a factor of 2.508 (actually increasing in probability).

The results of the binary logistic regression analysis provide evidence of the factors that increase the likelihood of a student graduating after leaving the original institution. Being female, an out-of-state resident, not earning academic probation, having at least 1 parent with a bachelor degree, and transferring to an institution with the same or better admission selectivity as UGA are significant factors that increase the likelihood a student earns a bachelor degree from another institution after leaving UGA. Also, the higher the cumulative GPA of a student at UGA, the odds of that student graduating from another institution increases.

Implications

There are many contributions that come from examining what happens to students after they leave UGA. Understanding if and where a non-retained student persists can aid UGA in designing their financial aid & admissions policies, curriculum programs, and student activities. The results from this study showed that a majority (62.1%) of the non-retained students did enroll in another institution after leaving the original institution. This indicates that a majority of these dropouts were still looking to earn a college degree, even after they left UGA.

In looking at the academic performance of the transfer graduates, the mean cumulative GPA was 3.00, indicating that these students, for the most part, were academically

successful at UGA but left for other reasons. One possible reason this suggest is the student's choice of major. UGA has a number of majors that are restrictive (limited space due to high demand with additional academic entrance criteria) and require a student to apply before being fully accepted into a major. A student who wanted to earn a particular degree which happens to be restricted access could have left the institution to pursue this degree if they were not accepted into the program at UGA. This suggests that expanding the study to examine last major at time of dropout is warranted. UGA could also revisit institutional policies restricting access to particular majors and investigate whether some changes could retain more students who would likely leave and be successful (graduate) at another institution.

Another possible reason why transfer graduates left is that they felt the cost at UGA was not worth the investment. Roughly 84% of non-resident transfer graduates returned to their home state and just under half (45.7%) of all transfer graduates graduated from institutions with the same or better admissions selectivity as UGA. Most students who did enroll in a lower selective admissions institution after leaving UGA enrolled in a two-year, community college. Students who received financial aid may have done so because community college typically has lower tuition costs and this investment may better suit them.

The descriptives statistics showed statically differing rates of receiving financial aid between both transfer non-enrollees and transfer enrollees and between transfer non-graduates and transfer graduates. However, in the binary logistic regression, type of financial aid received fell out of the model as being a significant influencer of where a student graduates from another institution after dropping out from UGA. This indicates that maybe it is not necessarily the type of aid received, but the dollar amount received. Previous research (Morgan, 1983; Leslie and Brinkman, 1987; Heller, 1999) showed how increases in tuition do impact the enrollment of students, in particularly non-resident students. An increase of tuition may provide reason to enroll at another institution to lower costs. The high rates of non-resident students enrolling and graduating from institutions from their original state of residency also suggest that price sensitivity to non-resident tuition might be a factor in students leaving. In general, these students performed well academically while at original institution but left to persist in an institution within their home state. This suggests that examining financial aid policies and award amounts as well as tuition costs are another area to examine further.

Lastly, understanding if and where non-retained students persist in higher education also provides an opportunity for UGA to expand the definition of how "successful" it has been in helping students persist and graduate. UGA can take the graduates of other institutions who originally started at UGA and can state that UGA played a part in these students being successful (graduates). This is particular helpful in thinking of retention and persistence within the USG system as a whole. In looking at the transfer enrollees and transfer graduates, the majority of transfer students enrolled (58.1%) and graduated (63.9%) respectively from another institution within the USG system. This provides UGA another discussion point in working with the state legislature on accountability

measures – that if a student is not successful here (at UGA), they can transfer (and most do) to another USG school and will be successful there (graduate).

References

- Barron's Educational Series. (1998). *Barron's Profiles of American Colleges*. Hauppauge, NY: Barron's Educational Series.
- Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge, UK: University Press.
- Heller, D. (1999). The effects of tuition and state financial aid on public college enrollment. *Review of Higher Education*, 23(1), 65-89.
- Hosmer, D. & Lemeshow, S. (2000). *Applied Logistic Regression*. 2nd edition. NY:Wiley.
- Leslie, L. & Brinkman, P. (1987). Student price response in higher education. *Journal of Higher Education*, 58, 181-204.
- Morgan, J. N. (1983). Tuition policy and the interstate migration of college students. *Research in Higher Education*, 19(2), 183-195.
- National Science Foundation. (1996). *Women, Minorities, and Persons With Disabilities in Science and Engineering: 1996*. Arlington, VA, 1996. (NSF 96-311).
- National Science Foundation. (2007). *Women, Minorities, and Persons With Disabilities in Science and Engineering: 2007*. Division of Science Resources Statistics, Arlington, VA, 2007. (NSF 07-315).
- National Student Clearinghouse. (2008). *National Student Clearinghouse Profile*. Author. Retrieved on May, 2008 from http://www.studentclearinghouse.org/about/pdfs/Clearinghouse_profile.pdf
- Savin, N. E. & Würtz, A. H. (2001). “Empirically relevant power comparisons for limited-dependent-variable models”. In C. Hsiao, K. Morimune, & Powell, J. (eds.), *Nonlinear Statistical Modeling*. 47-70. Cambridge: Cambridge University Press.
- Titus, M. (2006). Understanding the Influence of the Financial Context of Institutions on Student Persistence at Four-Year Colleges and Universities. *The Journal of Higher Education*, Vol. 77, No.2. (March-April), p.353-375.