NEW FRESHMEN AND NEW TRANSFER STUDENTS AT UMBC: A COMPARISON OF ACADEMIC PERFORMANCE

Research Report

UMBC Office of Institutional Research

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Introduction

This study, comparing the academic performance of new transfers and new freshmen at UMBC, is in part a response to discussions prompted by the Enrollment Management Task Force Report (January 1999). This Task Force report argued for continued increases in new freshmen over the next 5-10 years as a major component in increasing overall undergraduate enrollments from 8,854 in Fall 1999 to 10,000 in Fall 2007. The Task Force also was concerned about maintaining the numbers of new transfers each fall, but was less concerned about increasing recruitment efforts in this area.

Support for this view was based on comparisons of full-time enrollment rates and retention and graduation rates for transfers versus new (first-time) freshmen. Consistently, over 97% of new freshmen enroll full-time, whereas under 75% of new (degree-seeking) transfers do. Most of these transfers come in at the sophomore (49% of the Fall 1999 cohort) or junior (30%) level. After 5 years at UMBC, about 53% of the sophomore entrants graduate (another 2% remain enrolled) and about 67% of the junior entrants graduate (another 2% remain enrolled). The 25-30% of entering new transfers who attend part-time are much more likely to drop out altogether (45-50% drop out after in the first year). While only about 45% of new freshmen graduate from UMBC in 5 years (another 8-10% remain enrolled) and 50% graduate in 6 years (another 4-5% remain enrolled), a much greater percentage of new freshmen enroll full-time.

In much of the discussions about new freshmen and transfers, assumptions were made about their comparative academic abilities. This was a contentious issue. As convinced as many faculty were that transfer students in their classes were much less prepared and therefore much less successful compared to students who matriculated as new freshmen, there were other faculty who argued just as forcefully that transfers performed at least as well, if not better.

The current study is meant to contribute to this discussion by empirically examining the academic performance of UMBC's new freshmen and transfer students. In May 1999, a Transfer Study Committee was created to advise OIR in the methodological approach and to help interpret results and suggest recommendations. The following members from the UMBC community graciously agreed to serve on this committee and we publicly thank them for their help and input: Betsy Vourlekis, Social Work; Yvette Mozie-Ross and Dale Bittinger, Admissions/Enrollment; Jill Randles, College of Engineering; and Carl Weber, Biology.

We hope this report will provide a useful empirical foundation to discussions of this important issue. Please contact us with any thoughts, concerns, and suggestions you may have. This study is not meant to be exhaustive and we solicit your ideas for follow-up study.

Method Of Approach

After consultation with the Transfer Study committee and assessing our time and resource constraints, OIR decided on a two-track methodology:

1) Start with a beginning fall cohort of new transfer students and new first-time freshmen at UMBC and track their academic performance for twelve consecutive semesters (fall and spring semesters only), or six academic years. Performance in this study is limited to credits attempted, credits earned, average grade point average, and graduation rates. Six years is the standard marker for assessing and reporting undergraduate graduation rates. The Fall 1993 cohort of new transfers and new freshmen was chosen and tracked through the Spring 1999 semester.

2) Select one recent academic year (fall+spring semesters) and a representative subset of UMBC departments/courses that tend to enroll large numbers of both categories of students: those who had matriculated as new freshmen and those who had transferred. Then compare average course-level grade point average, controlling for students' class level if possible (i.e., freshmen, sophomore, junior, senior). The fall 1997-spring 1998 academic year was chosen and the following departments/courses selected: AMST, ART, BIOL, CHEM, CMSC, ECON, ENGL, IFSM, MATH, PSYC, and SOCY.

Next, pull out the specific courses taught in these departments in which there was a roughly equivalent and sufficient number of students enrolled who started at UMBC as either transfer students or first-time freshmen and compare course-level gpa. The list of specific course titles can be found in the appendix. Many of these courses may be seen as foundational, "gateways" to upper level coursework.

Findings

1) Longitudinal Tracking

A. Mean Differences

The beginning cohorts of new transfer students and first-time freshmen in Fall 1993 used for this study number 1,330 and 940 respectively[1]. Demographically, the two groups compare in the following ways:

	New Freshmen	New Transfers
% Female	45%	57%
% "Of Color"	31%	26%
% From Baltimore Metro Area	64%	69%

[1] It is important to point out that later cohorts (especially after Fall 1995—after UMBC's nursing program moved to UMB) are substantially different in terms of size: fewer transfers and more freshmen.

	New Freshmen	New Transfers
% With Original Major In:		
Science & Engineering	41%	27%
Social Sciences	11%	26%
Arts & Humanities	8%	12%
Health-related	1%	10%
Interdisciplinary Studies	1%	3%
Undeclared	38%	22%

Tables 1-5 present comparisons of average credits attempted and earned, average semester gpa, and percentage of each cohort having graduated by the end of each semester. Table 1 provides these comparisons for all new transfers and new freshmen. Tables 2-5 provide them broken down by broad academic groups based on students' original major (for the taxonomy of this classification, see UMBC Groupings for Departments, Faculty, Majors, and Courses in the appendix). Due to insufficient numbers, Health, and Interdisciplinary Studies are not represented in the longitudinal tracking.

From these tables the following conclusions can be drawn:

1) Empirical evidence strongly supports the claim that new freshmen continue to attempt more and earn more credits, semester to semester, than new transfers to UMBC. In at least nine of the 12 semesters (75%) across the five tables, new freshmen attempted more credits and these differences were statistically significant. In at least ten of the 12 semesters (83%) new freshmen earned more credits except for those with an original major in the Arts and Humanities, where this was true for only six semesters (50%).

While these comparisons may appear statistically dramatic, substantively they *may* be less so. Transfer students come in with a number of credits already earned at their transfer institution, therefore closer to graduation, and may not need or desire to take as many credits as their new freshmen counterparts. New transfers are also generally older, with more family/work obligations, so credit loads may naturally be less, with more enrolling on a part-time basis (in fall 1993, 29% of the new transfers were part-time, 6% for new freshmen).

2) In terms of academic performance, the comparisons are much less consistent. The poorer transfer student performance is not widespread, but found primarily between transfers/freshmen majoring in the Sciences and Engineering and for those coming in as Undecided/Undeclared.

Table 1 reveals that for average semester gpa, overall, new freshmen had statistically significant (based on *t*-test comparisons of the means) higher gpas for nine of the 12 semesters (75%). However, the percentage of each cohort eventually graduating after the

six–year period is basically the same (in fact, the new transfer rate is slightly higher). Assuming most had two years elsewhere, this means it takes new transfers about one-third more time to finish than new freshmen: eight years for transfers to six for freshmen. Given their probable differentiating social characteristics (age, family, work considerations) this finding is not surprising. In addition, new transfer students lend stability to UMBC's array of majors. More than four-fifths (82%) of the graduates from the new transfer cohort graduated in the same major (excluding undecided/undeclared) in which they started (data not shown). Less than half (46%) of the graduates from the new freshmen cohort did the same.

Looking across the larger academic group breakdowns it is clear that new transfer students do not fare as well if they major in Sciences and Engineering or come in undecided as to major. For Sciences and Engineering, new freshmen have statistically significant higher average semester gpas five of the 12 semesters (42%) and their graduation rate is 7 percentage points higher. Even more dramatic are the undecided students. New freshmen have statistically significant higher gpas in 8 of twelve semesters (67%) and their graduation rate is 10 percentage points higher than transfer students who start out as undecided.

Conversely, Social Sciences freshmen had statistically significant higher gpas in only two out of 12 (17%) semesters researched, compared to their transfer student counterparts. There were no statistically significant gpa differences in the Arts and Humanities. Moreover, in both areas, new transfers had a higher graduation rate after six years: 57%-49% in Social Sciences; 54%-52% in Arts and Humanities.

B. Logistic Regression For Graduates

Using independent variables available in our tracking file, and with knowledge of which students in each cohort graduated and which did not, it is possible to estimate a logistic regression model examining which independent variables are statistically related to the likelihood of a student graduating from UMBC. Tables 6a-g below provide the results for all students, those originally majoring in the broad academic groups, and for transfers/freshmen separately.

Transfer status is one of the distinguishing characteristics associated with the likelihood of graduation, as well as gender, race/ethnicity, choice of major (undeclared/declared), and geographic origin. We include the variable WASHBURB because in analysis of demographic change in new transfer/new freshmen cohorts from Fall 1993 to Fall 1999 (not shown), one of the most noticeable changes is the increased percentage of students coming from the Washington suburbs (Montgomery, Prince George's, and Charles Counties). These students are here in greater numbers and thus WASHBURB was entered to see if these students in the Fall 1993 cohorts graduated in significantly higher percentages.

The results confirm what was found in part A above. Transfer status matters, statistically, for graduates who started out in the Sciences and Engineering and for those who started

out undecided as to major. This is especially important, though, given changes in the choice of original majors for new transfer/new freshman cohorts from Fall 1993 to Fall 1999. The percentages of each cohort originally majoring in Computer Science, Information Systems, and those coming in undeclared have doubled or very nearly doubled in this time. Ironically, UMBC's success in Science and Engineering may exacerbate poor transfer performance if more and more transfers concentrate in these disciplines.

While students should not be forced to declare a major prematurely, these results may point to the need for advising to be handled in a better way and more incentives for them to choose a particular major earlier. The need for better advising is underscored by the surprising result for transfer gpa in the transfer model. Controlling for students' class level (i.e., the number of credits already earned upon entry to UMBC), transfer gpa is negatively related to the likelihood of graduating (statistically significant at the .06 level). It may well be that the curriculum transfer students have completed elsewhere inadequately prepares them for what they will encounter at UMBC.

For Fall 1993 students, being female statistically increased the odds that they would graduate. These results are not surprising. A number of higher education research studies have documented the growing disparities between male and female students in higher education participation rates, academic performance, and degree attainment (see " Colleges Look for Ways to Reverse a Decline in Enrollment of Men", The Chronicle of Higher Education, Nov. 26, 1999, pp A73-A74).

In addition, being from the Washington suburbs also statistically increased the odds of graduation. UMBC has been successful in attracting high caliber undergraduates from the DC suburban counties and continues to do so.

Logistic Regression Results For UMBCGRAD (1=Yes, 0=No)

6a) All Students Fall 1993: Independent Variables:

TRANSFER (1=Yes, 0=No)
FEMALE (1=Female, 0=Male)
WASHBURB (1=From Montgomery, Prince George's, Or Charles County, 0=Other)
OFCOLOR (1=Non-White, 0=White)
UNDECIDE (1=Original Major "Undecided", 0=Original Major Identified)

Variable	B	Wald	Significance	Exp(B)
TRANSFER	-.061	.472	.492	.941
FEMALE	**.317**	**13.761**	**.000**	**1.374**
WASHBURB	**.434**	**14.303**	**.000**	**1.544**
OFCOLOR	-.178	3.198	.074	.836
UNDECIDE	**-.678**	**49.541**	**.000**	**.508**

6b) Science & Engineering Majors Only:

Variable	B	Wald	Significance	Exp(B)
TRANSFER	**-.291**	**3.893**	**.048**	**.748**
FEMALE	.057	.144	.704	1.059
WASHBURB	**.478**	**5.890**	**.015**	**1.613**
OFCOLOR	.102	.386	.534	1 .108

6c) Social Science Majors Only:

Variable	B	Wald	Significance	Exp(B)
TRANSFER	.318	1.922	.166	1 .374
FEMALE	.219	1.227	.268	1.244
WASHBURB	**.985**	**10.268**	**.001**	**2.678**
OFCOLOR	-.419	3.232	.072	.658

6d) Arts & Humanities Majors Only:

Variable	B	Wald	Significance	Exp(B)
TRANSFER	.061	.046	.831	1.063
FEMALE	.388	2.090	.148	1.474
WASHBURB	.002	.000	.995	1.002
OFCOLOR	-.236	.478	.490	.789

6e) Undecided Majors Only:

Variable	B	Wald	Significance	Exp(B)
TRANSFER	**-.409**	**6.248**	**.012**	**.664**
FEMALE	**.402**	**6.111**	**.013**	**1.494**
WASHBURB	.279	1.807	.179	1.322
OFCOLOR	-.250	1.762	.184	.779

6f) New Transfers Only:

+MDCC (1=From a Maryland Community College; 0=Not)
+UPCLASS (1=Transferred In As Junior/Senior; 0=Transferred In As Freshmen/Soph)
+TRANGPA (Final GPA From Transfer Institution)

Variable	B	Wald	Significance	Exp(B)
UNDECIDE	**-.823**	**34.439**	**.000**	**.439**
FEMALE	**.315**	**7.678**	**.006**	**1.370**
WASHBURB	**.452**	**8.330**	**.004**	**1.571**
OFCOLOR	**-.300**	**4.837**	**.028**	**.741**
MDCC	.134	1.242	.265	1.143
UPCLASS	**.398**	**10.862**	**.001**	**1.489**
TRANGPA	-.095	3.516	.061	.909

6g) New Freshmen Only:

+HSGPA (High School GPA)

Variable	B	Wald	Significance	Exp(B)
UNDECIDE	-.251	3.091	.079	.778
FEMALE	.165	1.425	.233	1.180
WASHBURB	**.367**	**4.213**	**.040**	**1.443**
OFCOLOR	.102	.424	.515	1.107
HSGPA	**1.068**	**56 .325**	**.000**	**2.909**

2) Academic Year 1997-1998 Courses

Table 7a presents a comparison of the average **course-level** gpa for all new freshmen and new transfer students enrolled in all courses offered in our selected subset of UMBC departments for the Fall 1997 and Spring 1998 semesters. In this most global view, new freshmen have statistically significant higher gpas for five of the eleven departments, with new transfers having a statistically significant higher gpa for one department, Sociology. Differences in the other five departments are not statistically significant. Higher new freshman gpas are concentrated primarily in science and engineering departments. Table 7b presents the same information, controlling for whether or not the student was a major at the time they took the course. For both majors and non-majors, statistically significant higher new freshmen gpas are still concentrated in science and engineering.

Table 8 attempts to focus the microscope a little more, by controlling for the class level (i.e., based on the number of credits earned to date) of the new freshman or new transfer

student where possible (i.e., sufficient numbers to statistically compare). The results are similar to those of Table 7a-b although Economics has joined Psychology as social science departments where new freshmen have statistically significant higher average gpas than their new transfer counterparts. Again, the statistically significant higher gpas for new freshmen are found most frequently in science and engineering.

Finally, Table 9 narrows the focus even more, looking at specific courses across our subset of departments in which there were adequate numbers of each type of student to allow for comparison. This was done to assess whether new freshmen/new transfer disparities are located in particular courses, specifically ones that may serve as a foundation or "gateway" to further upper level coursework. **The results reiterate the fact that those students starting out as new freshmen at UMBC academically outperform those coming in as new transfer students in science and engineering, but not statistically so in other academic areas.** In addition, the highest percentages of students officially withdrawing from courses are found among transfer students in science and engineering, which adds support to the notion that these courses are especially difficult for these students.

Conclusion

Statistically speaking, there is no campus-wide disparity in the academic performance of students who transferred and students who matriculated as first-time freshmen. However, there are statistical differences in certain academic areas. Both methodological tracks have yielded similar findings, so a claim of analytical triangulation can be made on this issue. In the area of science and engineering, new transfer students do not perform as well and do not graduate from UMBC in as high a percentage. The empirical evidence, however, fails to substantiate such a conclusion for UMBC's other academic areas. In fact, if graduation is the criterion of success, transfers do better in the arts and humanities and the social sciences.

If we consider the modal background of both groups, theoretically, these results should not be surprising. While there are always individual exceptions, transfer students, the majority of whom come to UMBC from Maryland's two-year community colleges, are probably not as strong in math and science as new freshmen at UMBC. Conversely, UMBC's incoming new freshmen cohorts have been more select (on the basis of average SAT scores) during the 1990s. In fall 1988, average SAT Verbal and SAT Math scores for new freshmen were 458 and 513 respectively. By fall 1993, these average scores had risen to 505 for SAT Verbal and 578 for SAT Math.

Should transfer students, therefore, be advised out of the sciences and engineering, and into other academic areas? We need to be clear that not all transfer students struggle; we are reporting averages and percentages in this report. While we can not dictate choice of major, these findings do raise the issue of whether a considerable number of transfer students are prepared well enough to succeed in these areas at UMBC, without additional preparatory study. Whether incoming deficiencies can be corrected through better advising and/or a different pattern of UMBC coursework is a matter left for curricular experts and other professionals at UMBC.

Finally, those transfer students coming into UMBC without a declared major do perform less well than new freshmen who also enter undeclared, but both undeclared groups have lower graduation percentages (well below 50%) than the declared majors. New students cannot be forced to declare a particular major but these findings may point to a need for more persuasive advising or incentives, so that new students can be linked to a department/program as soon as possible.

In conclusion, there are multiple realities at work with regard to this issue, depending on one's context and experience, and each has a measure of empirical validity. If you are a professor, adviser, etc. in science and engineering you may be tempted to make the generalization that all transfer students perform poorly at UMBC. If you work in the social sciences or arts and humanities you might jump to dispute such a claim. Regardless of vantage point, transfer students are important to the UMBC community. As a public institution, transfer students matter economically and have the right, through

articulation agreements, to be here. More important, perhaps, is the fact that transfers offer stability and viability to many UMBC majors, and many bring a greater diversity in life experience to the classroom. This latter contribution should not be ignored as we continue to build our honors university.

APPENDIX

Course Selection For Transfer/Native Freshmen Study

Class	Title
AMST 200	Studies In Popular Culture
AMST 310	Gender & Inequality In America
AMST 320	Television In American Culture
AMST 392	Studies In American Society

Class	Title
ART 210	Visual Concepts I
ART 220	Art History I
ART 251	Photography I
ART 382	Intermediate Computer Art

Class	Title
BIOL 106	The Human Organism
BIOL 301	Ecology & Evolution
BIOL 302	Molecular and General Genetics
BIOL 303	Cell Biology

Class	Title
CHEM 123	Introduction to General Organic and Biochemistry I
CHEM 300	Analytical Chemistry
CHEM 301	Physical Chemistry I
CHEM 437	Comprehensive Biochemistry I

Class	Title
CMSC 201	Computer Science I for Majors
CMSC 202	Computer Science II for Majors
CMSC 211	Assembly Language Programming
CMSC 311	Introduction to Computer Organization

Class	Title
ECON 122	Principles of Accounting II
ECON 311	Intermediate Microeconomic Analysis
ECON 312	Intermediate Macroeconomic Analysis
ECON 467	Health Economics

Class	Title
ENGL 210	Introduction To Literature
ENGL 250	Introduction To Shakespeare
ENGL 301	Analysis of Literary Language
ENGL 393	Technical Writing

Class	Title
IFSM 125	Information Systems Logic and Structured Design
IFSM 202	Systems Analysis Methods
IFSM 303	Human Factors in Computer System Design
IFSM 310	Software and Hardware Concepts

Class	Title
MATH 100	Introduction To Contemporary Mathematics
MATH 115	Finite Mathematics
MATH 221	Introduction to Linear Algebra
MATH 225	Introduction to Differential Equations

Class	Title
PSYC 200	Developmental Psychology
PSYC 210	Psychology of Learning
PSYC 331	Experimental Psychology: Design and Analysis I
PSYC 407	Advanced Child Psychology

Class	Title
SOCY 201	Social Problems In American Society
SOCY 353	Marriage and the Family
SOCY 371	Criminology and Penology
SOCY 372	Juvenile Delinquency