



# A Tool for Tracking the Enrollment Flow of Older Undergraduates

William E. Knight  
and Robert W. Zhang  
Bowling Green State University



**Table 1** Logistic Regression Results for One-Year Retention

Parameter	DF	Estimate	Standard Error	Chi-Square	Wald Pr > ChiSq
Intercept	1	-2.7021	1.8026	2.2470	0.1339
sex	1	0.2358	0.5468	0.1861	0.6662
ethn	1	-2.1396	0.8672	6.0871	0.0136
NEW	1	-1.7043	0.9341	3.3289	0.0681
FP	1	1.2933	0.5221	6.1353	0.0133
AGE1	1	1.0441	1.2114	0.7429	0.3887
AGE2	1	1.7710	1.2735	1.9340	0.1643
AGE3	1	0.9036	1.2241	0.5449	0.4604
AGE4	1	0.1864	1.4035	0.0176	0.8943
AGE5	1	4.0709	1.8784	4.6966	0.0302
AS	1	2.7094	1.5806	2.9394	0.0865
BA	1	3.0254	1.7143	3.1352	0.0766
EHD	1	2.9042	1.6181	3.2213	0.0727
HHS	1	4.0244	1.6974	5.6210	0.0177
TEC	1	1.9206	1.5546	1.5262	0.2167

**Table 2** Logistic Regression Results for Four-Year Graduation

Parameter	DF	Estimate	Standard Error	Chi-Square	Wald Pr > ChiSq
Intercept	1	-12.8912	2.316	0.0031	0.9556
sex	1	0.7139	0.5715	1.5602	0.2116
ethn	1	-0.0186	0.8372	0.0005	0.9823
NEW	1	3.8014	1.2600	9.1024	0.0026
FP	1	2.3377	0.6396	13.3587	0.0003
AGE1	1	-2.8285	3.3967	0.6934	0.4050
AGE2	1	-2.7266	3.4005	0.6429	0.4227
AGE3	1	-2.3486	3.4165	0.4725	0.4918
AGE4	1	-3.5280	3.5312	0.9982	0.3178
AGE5	1	-1.9153	3.4828	0.3024	0.5824
AS	1	9.3107	2.316	0.0016	0.9679
BA	1	10.1697	2.316	0.0019	0.9650
EHD	1	9.8224	2.316	0.0018	0.9662
HHS	1	12.1393	2.316	0.0027	0.9582
TEC	1	9.8948	2.316	0.0018	0.9659

**Table 3** Logistic Regression Results for Five-Year Graduation

Parameter	DF	Estimate	Standard Error	Chi-Square	Wald Pr > ChiSq
Intercept	1	-1.5089	2.9013	0.2705	0.6030
sex	1	0.9535	0.5329	3.2019	0.0736
ethn	1	-0.2710	0.8400	0.1041	0.7470
NEW	1	2.4433	0.8465	8.3306	0.0039
FP	1	1.9700	0.5787	11.5877	0.0007
AGE1	1	-1.7472	2.5166	0.4820	0.4875
AGE2	1	-1.6484	2.5289	0.4249	0.5145
AGE3	1	-1.6872	2.5433	0.4401	0.5071
AGE4	1	-1.8590	2.6962	0.4754	0.4905
AGE5	1	-0.1459	2.6589	0.0030	0.9562
AS	1	-1.1285	1.6551	0.4649	0.4953
BA	1	-0.4270	1.7917	0.0568	0.8116
EHD	1	-1.2366	1.6842	0.5391	0.4628
HHS	1	1.2369	1.6744	0.5457	0.4601
TEC	1	-0.8013	1.6792	0.2277	0.6332

**Table 4** Logistic Regression Results for Six-Year Graduation

Parameter	DF	Estimate	Standard Error	Chi-Square	Wald Pr > ChiSq
Intercept	1	-11.2399	179.6	0.0039	0.9501
sex	1	0.6084	0.5276	1.3284	0.2489
ethn	1	-0.4745	0.8158	0.3393	0.5608
NEW	1	1.4815	0.7630	3.7701	0.0522
FP	1	1.7797	0.5569	10.2122	0.0014
AGE1	1	-1.2936	1.8622	0.4788	0.4890
AGE2	1	-1.2753	1.8839	0.4583	0.4984
AGE3	1	-0.9311	1.8908	0.2425	0.6224
AGE4	1	-1.4614	2.0404	0.5130	0.4738
AGE5	1	20.1636	257.2	0.0062	0.9374
AS	1	9.4550	179.6	0.0028	0.9590
BA	1	10.1995	179.6	0.0032	0.9547
EHD	1	9.5737	179.6	0.0028	0.9575
HHS	1	11.5295	179.6	0.0041	0.9488
TEC	1	9.7564	179.6	0.0029	0.9567

Dwindling state financial support and consequent higher tuition, concerns about access, and the challenging political and social environment for higher education all point to the need for institutions to engage in enrollment management (Penn, 1999). Student flow studies that describe the retention, graduation, grades, credit hours earned, etc. of various cohorts of students serve as an important tool for enrollment managers (Wilkinson & Peterson, 2001). Monitoring the enrollment flow of student sub-populations (e.g., members of demographic and academic preparation groups, students in various special programs, etc.) is a particular concern (Kroc & Hanson, 2003).

The Office of Institutional Research at Bowling Green State University (BGSU) has created versions of its student flow model that track the enrollment outcomes noted above for cohorts of new full-time main campus freshmen, new associate degree-seeking full-time and part-time freshmen at its regional campus, new transfer students overall and specifically those matriculating from a nearby community college, and new full-time and part-time graduate students. Twelve years of enrollment data are currently represented. In addition to tracking of the entire group of students in each cohort, sub-populations are also tracked, such as gender, race/ethnicity, college, ACT score range, high school GPA range, residency, and developmental course placement groups for the new full-time main campus freshmen.

Here we present a new version of BGSU's student flow model: one that tracks the enrollment of undergraduates who enter the university when they are 25 years old and older. This tool was developed in partnership with the University's Director of Adult Learner Services in order to help him and others understand the enrollment dynamics of older students. We modified some of the attributes of the general new freshman student flow model in developing this new array by omitting the breakouts by ACT score range and high school GPA range and adding age ranges in five year increments. The "Age 25+" student flow model also includes both full-time and part-time students who either started at BGSU as freshmen or as transfer students.

In addition to the descriptive results for one cohort at the bottom, we also show use of the underlying data in a series of linear and logistic regression equations to determine significant effects upon outcomes for this population. Caucasian American students, older students, those who began as full-time, and those in the College of Health and Human Services were more likely to be retained after one year. Students who entered as full-time and as transfer students rather than freshmen were more likely to graduate. Students who started as transfer students and those in the College of Education and Human Development and in the College of Health and Human Services were more likely to have higher grade point averages after one year. Caucasian American students were more likely to have higher GPAs at graduation.

### References

Kroc, R. J., & Hanson, G. (2003). Enrollment management. In W. E. Knight (2003). *The Primer for Institutional Research* (pp. 79-102). Tallahassee, FL: The Association for Institutional Research.

Penn, G. (1999). *Enrollment Management for the 21st Century: Institutional Goals, Accountability, and Fiscal Responsibility*. ASHE-ERIC Higher Education Report Volume 26, No. 7. Washington, DC: The George Washington University, Graduate School of Education and Human Development.

Wilkinson, R. B., & Peterson, A. (2001). Information of the realm. In J. Black (Ed.) *Strategic Enrollment Management Revolution* (pp. 239-252). Washington, DC: American Association of Collegiate Registrars and Admissions Officers.

### STUDENT FLOW MODEL

NON-TRADITIONAL STUDENTS WITH AGE 25 AND OLDER

COHORT: FALL 1998

		TOTAL	GENDER		ETHNICITY										COLLEGE WHEN FIRST ENROLLED		FULL/PART-TIME		NEW		DEV. PLACEMENT	AGE RANGE WHEN FIRST ENROLLED										RESIDENCY		
			a. Women	b. Men	a. BLACK	b. AMER INDIAN	c. HISPANIC	d. PACIFIC ISLANDER	e. HONOLULU ALIEN	f. WHITE	g. UNKN OWN	A&S*	ACE*	BA*	EAP*	HNS*	TEC*	FULL-TIME	PART-TIME	Fresh men		Transf er	No Yes	a. 25-29	b. 30-34	c. 35-39	d. 40-44	e. 45-49	f. 50-54	a. Ohio Resident	b. Non-Resident			
																																N	%	N
19983	Enrolled	N	120	75	45	5	1	2	1	106	5	34	4	14	23	29	16	65	55	15	105	112	8	52	26	21	7	10	4	110	10			
		%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
	AVG CUM GPA		0.65	0.77	0.44	0	0	0	0	0.69	0.8	0.47	1	0	0.6	1.15	0.65	0.29	1.06	0.63	0.65	0.7	0	0.2	0.5	1.1	0.4	1.5	2.8	0.7	0			
	AVG CUM HRS		69	75	61	69	162	16	75	70	64	65	40	72	65	86	63	61	80	3	79	74	0	62	86	57	90	72	95	68	82			
19991	Continue	N	102	68	34	5	1	2	1	88	5	31	3	12	20	27	7	64	38	14	88	84	8	44	21	18	8	9	4	96	6			
		%	85	90.7	75.6	100	100	100	100	100	89.3	100	91.7	100	85.7	90.9	83.1	43.8	96.5	61.1	93.3	83.8	84	100	85	91	86	90	100	84.2	100			
	Not Enrl	N	18	7	11					17								3		2	2	2	2	9	1	17	18				18			
		%	15	9.3	24.4					18.3								8.3		14.3	9.1	6.9	56.3	1.5	30.9	6.7	16.2	16			15.8			
	AVG CUM GPA		2.68	2.97	2.2	2.91	2.56	1	3.3	2.68	3.02	2.52	3.34	2.54	2.85	3.31	1.87	2.99	2.32	2.39	2.72	2.7	2.5	2.5	2.6	2.8	3.2	3.6	2.68	2.68	2.68			
	AVG CUM HRS		80	86	69	82	178	22	89	79	80	77	22	84	75	98	66	73	87	11	89	85	9	73	93	67	103	85	95	78	109			
19992	Continue	N	38	23	15	2				33	3	13			5	12	3	5	27	11	6	32	35	3	17	11	4	2	3	1	38			
		%	31.7	30.7	33.3	40				31.1	60	36.1			38.5	62.2	10.3	29.4	41.5	20	40	30.5	31	38	33	42	19	29	30	25	33			
	Graduate	N	4	4		1				3	4	1						1	3		4	4			1	1			2	3	1			
		%	3.3	5.3		100				2.8	2.8							10.3	3		1.5	5.5			3.8	3.0			3.8	4.8		90	2.8	20
	Not Enrl	N	78	48	30	3				70	40	22	2	8	11	23	12	37	41	9	69	73	5	36	14	16	5	7	1	74	4			
		%	85	64	66.7	60				100	60	61.1	100	61.5	47.8	79.3	70.6	56.9	74.5	60	65.7	65	63	67	54	76	71	70	25	64.3	80	64.3	80	
	AVG CUM GPA		2.7	3.03	2.15	2.8	2.56	1	3.3	2.71	3.06	2.68	3.14	2.48	2.9	3.31	1.78	2.96	2.39	2.75	2.7	2.5	2.4	2.7	3	2.8	3.2	3.6	2.7	2.62	2.62	2.62		
	AVG CUM HRS		84	90	74	87	178	22	89	84	91	80	4	90	83	99	70	80	89	17	93	89	14	78	99	69	103	88	103	82	117			

**Table 5** Linear Regression Results for First-Year Cumulative GPA

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	1	1.97781	0.84669	2.34	0.0230
SEX	1	-0.07870	0.20184	-0.39	0.6980
ethn	1	-0.64387	0.34987	-1.84	0.0708
NEW	1	0.52885	0.22602	2.34	0.0228
FP	1	-0.12364	0.18522	-0.67	0.5071
AGE1	1	-0.53549	0.50004	-1.07	0.2887
AGE2	1	-0.41585	0.50219	-0.83	0.4109
AGE3	1	-0.38193	0.52700	-0.72	0.4715
AGE4	1	-0.21673	0.61564	-0.35	0.7261
AGE5	1	-0.17646	0.53927	-0.33	0.7447
AS	1	1.24709	0.71587	1.74	0.0868
BA	1	1.08102	0.74689	1.45	0.1532
EHD	1	1.54261	0.74095	2.08	0.0418
HHS	1	1.62904	0.71661	2.27	0.0267
TEC	1	1.46922	0.74755	1.97	0.0542

**Table 6** Linear Regression Results for First-Year Cumulative Credit Hours

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	1	52.65070	42.08454	1.25	0.2159
SEX	1	-3.30497			