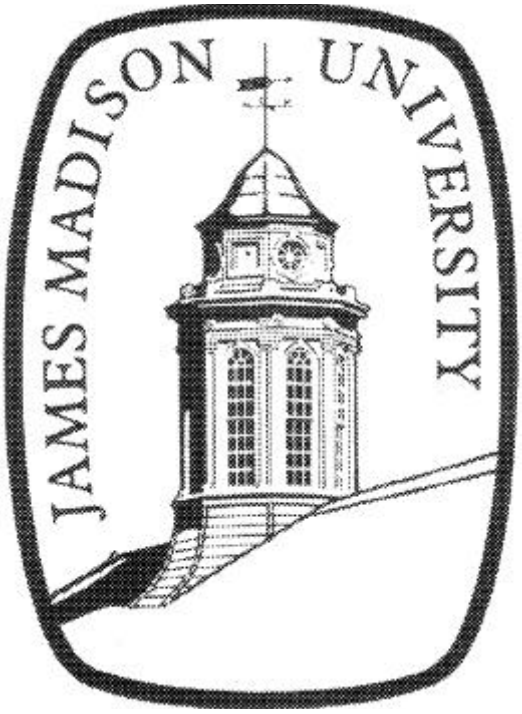

Fall 1992 and Fall 1996 First-Time Freshmen: Changes in Majors, Graduates and Retention

Office of Institutional Research
James Madison University

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Introduction

Understanding how students change their majors and how these changes may affect graduation rates can be an important step in developing strategies to reduce time to degree completion, increase student retention, and otherwise generate institutional efficiencies. In August 1995, the Office of Institutional Research (OIR) published a *Research Note* entitled *"Changes in Majors of Fall 1992 Freshmen Between Fall 1992 and Fall 1994."* This was the first study at JMU that tracked the changes in student majors of a first-time freshman class through the first two years of their college career. In April 1996, OIR published the study *"Changes in Majors of Fall 1992 First-Time Freshmen."* The April 1996 study followed the same cohort of 1992 freshmen into the beginning of their fourth year, tracking the changes in majors and counting the frequency with which they changed their majors. In June 1997, *"Fall 1992 First-Time Freshmen: Majors, Graduates and Retention"* was published. This 1997 study extended the previous research for the same students to their graduation or their return for the Fall 1996 term. It also included, for the first time, information on graduation rates by major. These rates were 1) graduation rates by major for students who declared only one major and did not change it, and 2) the percentage of annual graduates who entered JMU as first-time freshmen and completed their degree in four years.

This study continues the previous works in three general areas. First, the five year graduation statistics of the Fall 1992 cohort, along with its enrollment for Fall 1997 are displayed. Second, the effect on graduation rates of delay in declaring a major is investigated. This investigation is designed to provide insight to academic policymaking and help academic advisors respond to parents and prospective students about the relationship between the decision to declare a major and graduating in four years. Finally, this study examines changes in majors of the Fall 1996 freshmen cohort in Fall 1997. Academic Affairs launched a new and significant academic advising program for the Fall 1996 entering freshmen. The Office of Institutional Research plans to track this cohort and compare the results with those of the Fall 1992 cohort to provide some insight into the impact of this academic advising initiative.

Research Questions

With the beginning of each academic year, the nature of this ongoing study evolves. In Fall 1997, some Fall 1992 Freshmen began their sixth year of study while the class entering Fall 1996 began their second year of work toward their undergraduate degrees. Likewise, prior results of this ongoing study prompted questions about the effct that being undeclared during the freshman and sophomore years may have on a student's chances of graduating in four years. Thus, the following areas of inquiry were developed to guide this analysis:

1. What percentage of Fall 1992 first-time freshmen graduated in five years, and how many continued work on their degree in Fall 1997?
2. What is the distribution by major of graduating and continuing students from the Fall 1992 cohort?
3. Does a delay in declaring a major influence a student's ability to graduate in four years?
4. By discipline, does a delay in declaring a major influence how long it takes to complete a degree?

5. What is the distribution by major of changes in majors for the Fall 1996 first-time freshmen? Specifically for each major, how many first-time freshmen from Fall 1996:
   - Chose the major in Fall 1996?
   - Were in the major in Fall 1997?
   - Did not change their major between Fall 1996 and Fall 1997?
   - Dropped the major between Fall 1996 and Fall 1997?
   - Chose the major after Fall 1996?
6. What changes in declaration of major exist between the Fall 1992 cohort and the Fall 1996 cohort at the same point of academic progression?

Methodology

The data sources for establishing the Fall enrollment and majors of students are the SCHEV (State Council of Higher Education for Virginia) Fall Headcount data files. Graduation data were captured by downloading information from the University's Student Information System. Please see the previous publications, noted above, for more information about these sources and their selection for this study.

The research questions regarding undeclared students (numbers 3 and 4) were approached by dividing the original cohort into two groups, declared and undeclared, for each of the Fall terms over a four year period beginning Fall 1992. The graduation rates of each group were then compared, first for the total cohort, and then by major. Because the total numbers of graduates by major are small for some majors, these majors were grouped with similar disciplines in order to generate more meaningful statistics. The Classification of Instructional Program (CIP) code was primarily used to generate these "discipline groups."

Results

The results of this study are organized by the guiding research questions.

1. What percentage of Fall 1992 first-time freshmen graduated in five years, and how many continued work on their degree in Fall 1997?

JMU enrolled 2,042 first-time freshmen students on the Fall 1992 census. By Fall 1997:

- 1,570 students (77 percent) graduated with 1,678 majors declared; and
- 48 (2 percent) continued work toward their first degree with 50 majors declared.

Of these 1,570 graduates, 342 graduated during their fifth year with 375 majors declared. These 342 students account for 17 percent of the 1992 freshmen class and 22 percent of graduates so far. It appears likely that, for the first time in eight years, the six-year graduation rate will fall below 80 percent.

2. What is the distribution by major of graduating and continuing students from the Fall 1992 cohort?

Table 1 shows the distribution of these graduating and continuing students by major and by college. Carefully review the notes explaining the column values at the bottom of the table. The table includes a count of both four and five year graduates, and continuing students for both Fall 96 and Fall 97. The College of Arts and Letters had

Table 1

Graduates and Continuing Students by Major:
Fall 1992 First-Time Freshmen Cohort

COLLEGE	MAJOR	(1) 4 YEAR GRADUATES	(2) FALL 1996 MAJORS	(3) 5 YEAR GRADUATES	(4) FALL 1997 MAJORS	4 & 5 YEAR TOTAL GRADUATES
ARTS & LETTERS						
	ANTHROPOLOGY	26	3	2	1	28
	ART	43	16	12	1	55
	ART HISTORY	10	2	2	0	12
	COMMUNICATIONS	122	24	24	2	146
	DANCE	7	0	0	0	7
	ENGLISH	94	20	18	3	112
	HISTORY	40	14	12	3	52
	INTERNATIONAL AFFAIRS	31	6	6	0	37
	MODERN FOREIGN LANGAUGES	34	7	6	0	40
	MUSIC	19	24	21	0	40
	PHILOSOPHY & RELIGION	3	1	3	0	6
	POLITICAL SCIENCE	64	21	15	3	79
	PUBLIC ADMINISTRATION	6	2	2	0	8
	INTERDISC SOCIAL SCIENCE	31	2	5	0	36
	SOCIOLOGY	35	10	4	3	39
	TECH & SCI COMM			1	0	1
	THEATRE	4	3	4	1	8
	COLLEGE TOTAL	569	155	137	17	706
BUSINESS						
	ACCOUNTING	43	12	10	1	53
	BUSINESS ECONOMICS	5	5	4	0	9
	COMPUTER INFO SYSTEMS	55	29	26	3	81
	ECONOMICS	22	5	3	2	25
	FINANCE	54	24	24	1	78
	FASHION MERCHANDISING	6	1	0	2	6
	HOSPITALITY & TOURISM MGT	12	6	6	0	18
	INTERNATIONAL BUSINESS	25	15	14	1	39
	MANAGEMENT/OPS MGT	26	18	13	2	39
	MARKETING	52	20	18	3	70
	QUANTITATIVE FINANCE	2	1	1	0	3
	COLLEGE TOTAL	302	136	119	15	421
EDUCATION & PSYCHOLOGY						
	GENERAL PSYCHOLOGY	150	32	25	2	175
	KINESIOLOGY	12	12	8	0	20
	OFFICE SYSTEMS MGT	1	1	1	0	2
	COLLEGE TOTAL	163	45	34	2	197
INTEGRATED SCIENCE AND TECHNOLOGY						
	COMM SCIENCES & DISORDERS	32	2	2	2	34
	COMPUTER SCIENCE	14	5	2	0	16
	DIETETICS	8	3	3	0	11
	GEOGRAPHY	12	3	3	0	15
	HEALTH SCIENCES	55	21	18	5	73
	INTEGRATED SCIENCE & TECH	1	2	1	0	2
	NURSING	26	13	11	1	37
	SOCIAL WORK	15	11	8	1	23
	COLLEGE TOTAL	163	60	48	9	211

Table 1 continued next page.

Table 1 (Continued)

Graduates and Continuing Students by Major:
Fall 1992 First-Time Freshmen Cohort

COLLEGE / MAJOR		(1) 4 YEAR GRADUATES	(2) F96 MAJORS	(3) 5 YEAR GRADUATES	(4) F97 MAJORS	4 & 5 YEAR TOTAL GRADUATES
SCIENCE & MATHEMATICS						
	BIOLOGY	75	24	22	4	97
	CHEMISTRY	16	4	4	1	20
	GEOLOGY	0	6	5	0	5
	MATHEMATICS	12	6	5	0	17
	MEDICAL TECHNOLOGY	0	0	1	0	1
	PHYSICS	3	0	0	1	3
	COLLEGE TOTAL	106	40	37	6	143
TOTAL FIRST & SECOND MAJORS		1,303	436	375	50	1,678
	UNDECLARED	NA	1	NA	1	NA

Table 1 Notes for column values:
(1) Number of Fall 1992 cohort graduates by September 1996. Double majors are counted twice.
(2) Number of Fall 1992 cohort not graduated and enrolled at Fall 1996 census.
(3) Number of Fall 1992 cohort graduates between September 1996 and September 1997. Double majors are counted twice.
(4) Number of Fall 1992 cohort not graduated and enrolled at Fall 1997 census

the greatest number of majors completed in five years (N=706 for 42 percent) and Fall 1997 continuing majors (N=17 for 34 percent). The five programs graduating the greatest number of four and five year students were General Psychology (N=175), Communications (SMAD and SCOM combined for N=146), English (N=112), Biology (N=97) and Computer Information Systems (N=81).

Figure 1 compares the percent contribution by college to the total four and five year cohort graduates. For example, the College of Arts and Letters percentage of graduates dropped from 44 percent (N=569) of all four year graduates to 37 percent (N=137) of all five year graduates. But, the College of Business moved in the opposite direction, with 23 percent (N=302) of all four year graduates to 32 percent (N=119) of all five year graduates. This suggests that a greater proportion of the College of Business graduates take five years to graduate than the College of Arts and Letters. This suggestion is further supported by referring to Table 1 where 28 percent (119 out of 421) of the College of Business graduates took five years to complete their degrees while the same figure for the College of Arts and Letters was 19 percent (137 out of 706). Compared to percentages of the College of Arts and Letters, similar but weaker tendencies toward five year graduates are also found for the College of Science and Mathematics where 26 percent (37 out of 143) took five years to graduate and the College of Integrated Science and Technology where the five year figure is 23 percent (48 out of 211).

3. Does a delay in declaring a major influence a student's ability to graduate in four years?

Figure 2 compares the graduation rates, by fall terms, of students who had declared majors at the fall census to

students who were undeclared at the same point in time. For example, in Fall 1992, 1,115 students of the entering

Figure 1:
PERCENT OF UNIVERSITY TOTAL BY COLLEGE
FALL 1992 FRESHMAN FOUR AND FIVE YEAR GRADUATES

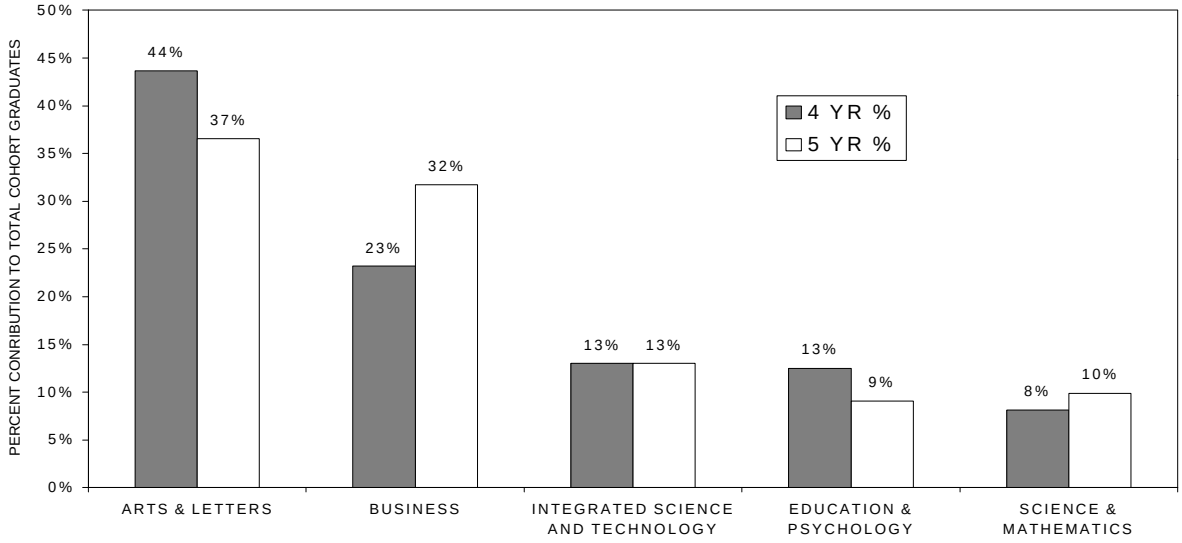
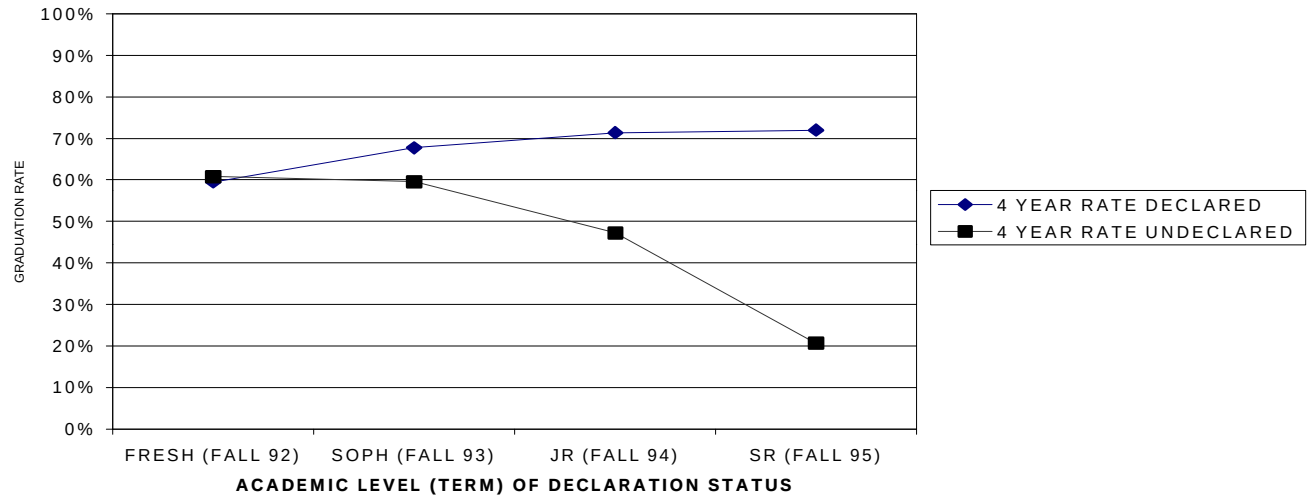


Figure 2:
FALL 92 FRESHMAN 4 YEAR GRADUATION RATES
DECLARED VS. UNDECLARED BY FALL TERMS



freshmen cohort declared a major by census and 927 were undeclared. Of the declared students, 664 graduated in four years for a graduation rate of 60 percent. Of the 927 undeclared students, 564 graduated in four years for a rate of 61 percent. Overall, there appears to be no meaningful difference, with respect to graduation rate, for undeclared students in their first term. However, the difference between these groups increases quickly over time. From the same

cohort of Fall 1992 freshmen in Fall 1993, the four-year graduation rate of declared students was 68 percent compared with 60 percent for undeclared. In Fall 1994, the four-year graduation rate of declared students was 71 percent compared with 47 percent for undeclared. By Fall 1995, the "senior" year for this cohort, the numbers of undeclared students had fallen to a total of 34 students and only seven graduated.

Please note that the graduation rates discussed here will differ from the official graduation statistics of the University because students who leave are not included in the comparison of declared versus undeclared students. For example, the figure shows that the graduation rate for this cohort, where the students had a declared major in Fall 1995, is 72 percent. The four year graduation rate for this cohort including students who have left is 58 percent.

4. By discipline, does a delay in declaring a major influence timeliness of degree completion?

Table 2 examines from a different perspective undeclared students and their chances of graduating. The table includes the total number of students who graduated in four years, the number of graduates by term that were undeclared and graduated in four years, and the percentage by term that were undeclared and graduated in four years. These statistics are also grouped into ten disciplines because the total number of graduates for many majors is small and would not produce meaningful statistics for this analysis. Because Biology and Psychology have large numbers of graduates, they were not grouped with other majors for this analysis. Column explanations follow at the bottom of the table. For example, the last row of the table shows the Fall 1992 cohort with a total of 1,228 four-year graduates. Five hundred sixty-four (46 percent) of these 1,228 graduates were undeclared in Fall 1992, 327 (27 percent) were undeclared in Fall 1993 and 60 (five percent) were undeclared in Fall 1994. These results are consistent with those displayed in Figure 1 for the university. Almost one-half of the four year graduates were undeclared in their freshmen year and the proportion dropped quickly over the next two fall terms.

The discipline groups in Table 2 are listed by relative difficulty of completing a four year degree if the student did not declare the major in their first term (Fall 1992). The most difficult disciplines, Math and Science, and the Arts, are listed first. For the Biology and Health groups, rows labeled "Preprofessional not included" are added. These rows do not count as undeclared those participating in preprofessional programs. This detail was added to the display because many of the students in preprofessional programs are well focused in the studies of a specific, but as yet undeclared, major. Within groups, where the total number of graduates is less than 25, the detail for the major is shaded because the percentages may not be meaningful.

The Mathematics and Science group had the lowest percentage of four-year graduates (23 percent) who were undeclared as they began their first year of college at JMU in Fall 1992. The Letters group had the highest percentage of four year graduates (55 percent) who were undeclared in Fall 1992.

5. What is the distribution by major of changes in majors for the Fall 1996 first-time freshmen?

Table 3 shows the changes in majors for first-time freshmen who entered JMU in Fall 1996. The table is grouped by major and college with explanations for each column at the bottom of the table. These columns are (1) the beginning (Fall 1996) count of majors, (2) the Fall 1997 count, (3) the total number of majors that did not

Table 2

Four Year Graduates With Undeclared Percentage By Fall Terms

DISCIPLINE GROUP	(1) 4 YEAR GRADS	(2) 4 YEAR GRADS UNDECLARED IN FALL 92	(3) % OF 4 YEAR GRADS	(4) 4 YEAR GRADS UNDECLARED IN FALL 93	(5) % OF 4 YEAR GRADS	(6) 4 YEAR GRADS UNDECLARED IN FALL 94	(7) % OF 4 YEAR GRADS
MATH AND SCIENCE							
CHEMISTRY	*16*	*3*		*1*		*1*	
GEOLOGY	*0*						
INTEG SCIENCES & TECH	*1*			*1*			
MATHEMATICS	*10*	*3*		*2*			
PHYSICS	*3*	*1*					
GROUP TOTAL	30	7	23%	4	13%	1	3%
ARTS							
ART	*40*	*9*	*23%*	*3*	*8%*		*0%*
ART HISTORY	*8*	*4*		*3*			
DANCE	*7*	*2*					
MUSIC	*19*	*6*					
THEATER	*4*	*1*		*1*			
GROUP TOTAL	78	22	28%	7	9%		0%
BIOLOGY	75	34	45%	14	19%	4	5%
PREPROFESSIONAL NOT INCLUDED	75	24	32%	5	7%	4	5%
COMMUNICATIONS							
MASS COMMUNICATION	*76*	*24*	*32%*	*11*	*14%*	*2*	*3%*
SPEECH COMMUNICATION	*40*	*17*	*43%*	*14*	*35%*	*1*	*3%*
GROUP TOTAL	116	41	35%	25	22%	3	3%
GENERAL PSYCHOLOGY	147	61	41%	35	24%	6	4%
HEALTH							
COMM SCIENCES & DISORDERS	*32*	*21*	*66%*	*5*	*16%*	*2*	*6%*
PREPROFESSIONAL NOT INCLUDED	*32*	*19*	*59%*	*4*	*13%*	*2*	*6%*
DIETETICS	*8*	*5*		*2*			
PREPROFESSIONAL NOT INCLUDED	*8*	*5*		*1*			
FASHION MERCHANDISING	*5*						
HEALTH SCIENCES	*55*	*31*	*56%*	*15*	*27%*	*2*	*4%*
PREPROFESSIONAL NOT INCLUDED	*55*	*24*	*44%*	*10*	*18%*	*2*	*4%*
KINESIOLOGY	*12*	*10*		*9*			
MEDICAL TECHNOLOGY	*0*						
NURSING	*26*	*6*	*23%*		*0%*		*0%*
PREPROFESSIONAL NOT INCLUDED	*26*	*5*	*19%*		*0%*		*0%*
GROUP TOTAL	138	73	53%	31	22%	4	3%
PREPROFESSIONAL NOT INCLUDED	138	63	46%	24	17%	4	3%

Table 2 continued next page.

Table 2 (Continued)

Four Year Graduates With Undeclared Percentage By Fall Terms

DISCIPLINE GROUP	(1) 4 YEAR GRADS	(2) 4 YEAR GRADS UNDECLARED IN FALL 92	(3) % OF 4 YEAR GRADS	(4) 4 YEAR GRADS UNDECLARED IN FALL 93	(5) % OF 4 YEAR GRADS	(6) 4 YEAR GRADS UNDECLARED IN FALL 94	(7) % OF 4 YEAR GRADS
BUSINESS							
ACCOUNTING	*43*	*19*	*44%*	*10*	*23%*	*3*	*7%*
BUSINESS ECONOMICS	*4*	*3*		*3*		*1*	
BUSINESS MGT	*24*	*10*		*6*			
ECONOMICS	*18*	*10*		*7*		*1*	
FINANCE	*54*	*25*	*46%*	*20*	*37%*	*7*	*13%*
HOPITALITY & TOURISM MGMT	*12*	*4*		*1*			
INTERNATIONAL BUSINESS	*25*	*11*	*44%*	*4*	*16%*	*1*	*4%*
MARKETING	*50*	*26*	*52%*	*21*	*42%*	*2*	*4%*
OFFICE SYSTEMS MANAGEMENT	*1*	*1*					
OPERATIONS MANAGEMENT	*2*	*1*					
QUANTITATIVE FINANCE	*2*						
GROUP TOTAL	235	110	47%	72	31%	15	6%
COMPUTING							
COMPUTER INFO SYSTEMS	*54*	*26*	*48%*	*18*	*33%*	*5*	*9%*
COMPUTER SCIENCE	*14*	*7*		*3*		*1*	
GROUP TOTAL	68	33	49%	21	31%	6	9%
HUMANITIES							
ANTHROPOLOGY	*20*	*8*		*3*			
GEOGRAPHY	*12*	*9*		*4*		*2*	
HISTORY	*33*	*19*	*58%*	*11*	*33%*	*1*	*3%*
INTERNATIONAL AFFAIRS	*25*	*12*	*48%*	*7*	*28%*	*1*	*4%*
POLITICAL SCIENCE	*57*	*28*	*49%*	*19*	*33%*	*2*	*4%*
PUBLIC ADMINISTRATION	*6*	*3*		*2*			
SOCIAL SCIENCE	*30*	*15*	*50%*	*8*	*27%*	*1*	*3%*
SOCIAL WORK	*15*	*6*		*4*			
SOCIOLOGY	*33*	*23*	*70%*	*20*	*61%*	*2*	*6%*
GROUP TOTAL	231	123	53%	78	34%	9	4%
LETTERS							
ENGLISH	*90*	*56*	*62%*	*35*	*39%*	*9*	*10%*
MODERN FOREIGN LANGUAGES	*17*	*3*		*3*		*1*	
PHILOSOPHY & RELIGION	*3*	*1*		*2*		*2*	
GROUP TOTAL	110	60	55%	40	36%	12	11%
TOTAL	1,228	564	46%	327	27%	60	5%

Table 2 Notes for column values:
(1) Number of four-year graduates from the Fall 1992 cohort.
(2) Number of four-year graduates from the Fall 1992 cohort that were undeclared in Fall
(3) Percent of four-year graduates from the Fall 1992 cohort that were undeclared in Fall
(4) Number of four-year graduates from the Fall 1992 cohort that were undeclared in Fall
(5) Percent of four-year graduates from the Fall 1992 cohort that were undeclared in Fall
(6) Number of four-year graduates from the Fall 1992 cohort that were undeclared in Fall
(7) Percent of four-year graduates from the Fall 1992 cohort that were undeclared in Fall

Table 3

Changes in Majors:
Fall 1996 First-Time Freshmen in Fall 1997

COLLEGE / MAJOR	(1) 1996 MAJORS	(2) 1997 MAJORS	(3) 1996-97 MAJORS UNCHANGED	(4) 1996-97 MAJORS LOSS	(5) 1996-97 MAJORS GAIN	(6) NET GAIN (LOSS)
ARTS & LETTERS						
ANTHROPOLOGY	12	13	7	5	6	1
ART	75	86	61	14	25	11
ART HISTORY	3	6	3	0	3	3
COMMUNICATIONS	159	200	125	34	75	41
ENGLISH	96	93	65	31	28	(3)
HISTORY	50	50	32	18	18	0
INTERNATIONAL AFFAIRS	40	42	26	14	16	2
MODERN FOREIGN LANGUAGES	26	38	18	8	20	12
MUSIC	118	95	84	34	11	(23)
PHILOSOPHY & RELIGION	12	14	9	3	5	2
POLITICAL SCIENCE	93	81	56	37	25	(12)
PUBLIC ADMINISTRATION	2	6	1	1	5	4
SOCIAL SCIENCE	4	10	3	1	7	6
SOCIOLOGY	12	27	8	4	19	15
TECHNICAL & SCI. COMM	0	1	0	0	1	1
THEATRE	43	36	27	16	9	(7)
COLLEGE TOTAL	745	798	525	220	273	53
BUSINESS						
ACCOUNTING	118	112	93	25	19	(6)
BUSINESS ECONOMICS	0	5	0	0	5	5
COMPUTER INFO SYSTEMS	43	71	36	7	35	28
ECONOMICS	57	53	41	16	12	(4)
FINANCE	52	64	36	16	28	12
HOSPITALITY & TOURISM MGT	9	14	6	3	8	5
INTERNATIONAL BUSINESS	92	75	54	38	21	(17)
MANAGEMENT/OPS MGT	80	78	53	27	25	(2)
MARKETING	79	101	55	24	46	22
QUANTITATIVE FINANCE	0	7	0	0	7	7
COLLEGE TOTAL	530	580	374	156	206	50
INTEGRATED SCIENCE & TECHNOLOGY						
COMM SCI & DISORDERS	25	32	21	4	11	7
COMPUTER SCIENCE	78	79	60	18	19	1
DIETETICS	9	13	5	4	8	4
GEOGRAPHY	2	5	2	0	3	3
HEALTH SCIENCES	53	86	36	17	50	33
INTEG SCIENCES & TECH	205	172	154	51	18	(33)
NURSING	48	46	35	13	11	(2)
SOCIAL WORK	19	24	12	7	12	5
COLLEGE TOTAL	439	457	325	114	132	18
EDUCATION & PSYCHOLOGY						
GENERAL STUDIES (BGS)	1	0	0	1	0	(1)
KINESIOLOGY	62	55	46	16	9	(7)
MARKETING EDUCATION	1	0	0	1	0	(1)
PSYCHOLOGY	207	222	152	55	70	15
VOCATIONAL EDUCATION	0	1	0	0	1	1
COLLEGE TOTAL	271	278	198	73	80	7

Table 3 continued next page.

Table 3 (Continued)

Changes in Majors:
Fall 1996 First-Time Freshmen in Fall 1997

COLLEGE MAJOR	(1) 1996 MAJORS	(2) 1997 MAJORS	(3) 1996-97 MAJORS UNCHANGED	(4) 1996-97 MAJORS LOSS	(5) 1996-97 MAJORS GAIN	(6) NET GAIN (LOSS)
SCIENCE & MATHEMATICS						
BIOLOGY	258	164	143	115	21	(94)
CHEMISTRY	39	30	26	13	4	(9)
GEOLOGY	6	12	4	2	8	6
MATHEMATICS	35	28	21	14	7	(7)
MEDICAL TECHNOLOGY	4	6	3	1	3	2
PHYSICS	10	5	5	5	0	(5)
COLLEGE TOTAL	352	245	202	150	43	(107)
UNIVERSITY TOTAL	2,337	2,358	1,624	713	734	21
UNDECLARED	923	632	538	385	94	(291)
NOT ENROLLED		324				

change, (4) the number of beginning majors lost, (5) the number of new majors gained, and (6) the net gain or loss of majors from Fall 1996 to Fall 1997. A similar table for the first-time freshmen of 1992 was included in previous publications of this ongoing study.

The Fall 1996 cohort, the largest ever to enter the university, began with 3,258 freshmen. In Fall 1996, 2,335 freshmen declared a total of 2,337 majors. Nine hundred twenty-three (923) students were undeclared. By Fall 1997, 69 percent (1,624) of those declared in Fall 1996 had not changed their major. Three hundred twenty-four (324) students did not enroll in Fall 1997.

The College of Integrated Science and Technology had the highest percentage of unchanged majors (74 percent) followed closely by Education and Psychology (73 percent), Business (71 percent), and Arts and Letters (70 percent). The College of Science and Mathematics was distinguished from the others with the lowest rate of 57 percent unchanged majors.

The greatest net gains by major were Communications (Net=41), Health Sciences (Net=33) and Computer Information Systems (Net=28). The greatest net losses were Biology (Net=-94), Integrated Science and Technology (Net=-33) and Music (Net=-23).

6. What changes in declaration of major exist between the Fall 1992 cohort and the Fall 1996 cohort at the same point of academic progression?

Table 4 compares the cohort of Fall 1992 entering freshmen with those of Fall 1996. The table contains headcounts, majors, unchanged majors and statistics comparing the two groups. Aside from the much larger Fall 1996 cohort (3,258 students compared to 2,042), the most striking difference between these groups is the percent of total cohort with declared majors in the freshmen year. The Fall 1996 cohort had 2,335 (71.7 percent) students with

declared majors and the Fall 1992 cohort had 1,115 (54.6 percent); a difference of 17.1 percent. Also, the one

Table 4

Comparison: Majors Fall 1992 Cohort to Fall 1996 Cohort

	Fall 1992 Cohort	Percent of Fall 1992 Cohort	Fall 1996 Cohort	Percent of Fall 1996 Cohort	Percent Difference
Total Entering Freshmen Cohort	2,042	100%	3,258	100%	
Headcount Declared Freshmen Majors	1,115	54.6%	2,335	71.7%	17.1%
Double Majors	69		2		
Total Declared Freshmen Majors	1,184		2,337		
Undeclared Freshmen	927	45.4%	923	28.3%	-17.1%
Total Returning After One Year (Sophomore Year)	1,872	91.7%	2,934	90.1%	-1.6%
Headcount Declared Sophomore Majors	1,323	64.8%	2,302	70.7%	5.9%
Double Majors	94		56		
Total Declared Sophomore Majors	1,417		2,358		
Undeclared Sophomores	549	26.9%	632	19.4%	-7.5%
Not Enrolled Sophomore Year	170	8.3%	324	9.9%	1.6%
Headcount Unchanged Sophomore Majors	819	40.1%	1,622	49.8%	9.7%
Double Majors	48		2		
Total Unchanged Majors Sophomore Year	867		1,624		
Headcount Unchanged Undeclared Sophomore Year	511	25.0%	538	16.5%	-8.5%
Headcount Unchanged Declaration Status (Declared or Undeclared)	1,330	65.1%	2,160	66.3%	1.2%
Percent of Students Who Did Not Change Their Major(s) (Headcount Unchanged Sophomore Majors Divided by Headcount Declared Freshmen Majors)	73.5%		69.5%		-4.0%

year return rate for the Fall 1996 cohort (90.1 percent) was 1.6% lower than that of the Fall 1992 cohort (91.7 percent). This statistic has declined slowly from a high of 93.5 percent for the 1989 cohort. The percentage of students who did not change their major is four percent lower for the Fall 1996 cohort (see the bottom row of Table 4). The Fall 1992 cohort had 819 (73.5 percent) students who had majors declared in their freshmen year and did not change majors by census date of their sophomore year. The same number for the Fall 1996 cohort was 1,622 (69.5 percent). However, there is very little, if any, difference between these cohorts when comparing the percentage of students who did not change their status whether or not they were declared. In other words, 66.3 percent (N=2,160) of the Fall 1996 cohort who were either undeclared or declared with a major did not change their status of declaration by Fall 1997. The same statistic for the Fall 1992 cohort was 65.1 percent (N=1,330). Finally, there are only two students declared with double majors in the freshmen year of the Fall 1996 cohort and 69 at the same point in time for the Fall 1992 cohort; a difference which suggests a change in policy on the declaration of double majors for entering freshmen.

Discussion

Three major areas of inquiry guided this study. The first was to continue to track the first-time freshman class

that entered in Fall 1992, examining five-year graduation rates and students continuing into their sixth year of study. With 77 percent graduated and only 2 percent continuing, it seems likely that the graduation rate for this cohort will fall below 80 percent for the first time in eight years. Clearly, the College of Arts and Letters graduated the greatest number of four and five year graduates (N=706). Combined, the College of Arts and Letters and the College of Business graduated 1,127 (67 percent) of the total 1,678 majors. The other three colleges ranged between nine and thirteen percent of the total graduating majors. A greater percentage of students in the College of Arts and Letters tend to graduate in four years than students in the College of Business, the College of Science and Mathematics, and the College of Integrated Science and Technology.

The second major area of inquiry was the effect of being undeclared upon a student's chances of completing a degree in four years. Overall, there appears to be little effect on completing a major in four years if freshmen enter with or without a major. However, the effect grows significantly with succeeding fall terms and is also dependent upon the major declared. For students in their freshmen year, Figure 1 showed no real difference between the four-year graduation rates whether or not a major was declared. Likewise, Table 2 showed that students undeclared in their freshmen year represented 46%--almost one-half--of the total four-year graduates. Students with declared majors in the fall of their junior year graduated at a rate of 71 percent. This compares to students without declared majors in their junior year who graduated at a rate of 47 percent. Only five percent of students undeclared in their junior year became four-year graduates of this cohort.

Table 2 also shows that the effect on graduating in four years is also dependent upon the discipline of the major. In Mathematics and Science, Arts, Biology and Communications, roughly between three-quarters and two-thirds of the four year graduates were declared in their entering freshmen year. In the Humanities and Letters, the same figure was roughly one-half. These statistics suggest, for example, that students who do not declare a major in their first term have a better chance of graduating in four years with a major in a Humanities discipline than a major in Mathematics or Science. While such a suggestion is not new to the Academic environment, Table 2 serves to quantify the matter.

The third area of inquiry was to begin to examine changes in majors of the Fall 1996 first-time freshmen. By Fall 1997, 69 percent of the majors declared in Fall 1996 remained unchanged. Where the College of Arts and Letters and the College of Business produced the bulk of graduates from the Fall 1992 cohort, the Fall 1996 cohort should see an increase in the proportion of graduates from the College of Integrated Science and Technology due to growth in the Integrated Science and Technology (ISAT) major and health disciplines. The ISAT program did not exist in 1992, and it is now the third most popular program for the Fall 1996 cohort. However, remember that the 1992 cohort data reveals a tendency for this College, relative to the College of Arts and Letters, to produce five year graduates (23 percent of the total four and five year CISAT graduates). The combination of these two factors--growth in CISAT majors and five year graduates--could result a decrease in the four-year graduation rate and an increase in the five-year graduation rate.

Within this third area of inquiry, changes for the Fall 1996 freshmen cohort are compared to those of the Fall 1992 cohort at the same point in time--the beginning of their sophomore year. The one year return rate for the Fall 1996 cohort was slightly lower than that of the Fall 1992 cohort. This slow decline began in at least 1989 and, if other factors remain equal, should result in a lower graduation rate for the Fall 1996 cohort. It also appears that the university has made changes designed to discourage entering freshmen from declaring double majors while encouraging them to declare single majors. Where the Fall 1992 cohort had 69 students with double majors declared in their freshmen year, the Fall 1996 cohort, with 1,216 more freshmen, had only two double majors. The difference between students undeclared in their freshmen year was also large. Seventy-one point seven percent of the Fall 1996 cohort began their freshmen year with declared majors while the same figure for the Fall 1992 cohort was only 54.6 percent.

Meaningful differences between these two cohorts in students changing majors is difficult to determine at this time. Sixty-nine point five percent of the Fall 1996 cohort who declared majors as freshmen did not change their major after one year, four percent less than the same figure for the Fall 1992 cohort (73.5 percent). However, if the change in "declaration status" of the student is considered, including both freshmen who declared majors and freshmen who were undeclared, 66.3 percent of the Fall 1996 cohort did not change their status. The same figure for the Fall 1992 cohort is 65.1 percent. In other words, for both cohorts two out of three students made no change in their declaration status as they started their sophomore year. This distinction between "changes in major" and "changes in declaration status" is important for two reasons. The first reason is that the distinction helps with attempts to compare the two cohorts that have very different freshmen rates of undeclared students and double majors. The second is because some students may be very well advised not to declare a major too early in their academic career.

Conclusion

There are several meaningful conclusions that can be made at this time:

- The six year graduation rate for the Fall 1992 cohort is likely to fall below 80 percent.

- Growth in the College of Integrated Science and Technology, combined with its tendency to produce a greater percentage of five year graduates than the College of Arts and Letters, may result in a decrease in the four-year graduation rate and an increase in the five-year graduation rate.

- Overall, there is little effect upon student chances of graduating in four years if they do not declare a major in their freshmen year. However, in some disciplines it is advantageous to declare a major in the freshmen year. Students who have not declared a major by their junior year are much less likely to graduate in four years than those who are declared.

- The one year return rate for the Fall 1996 cohort declined slightly, continuing a trend that could eventually result in a lower six year graduation rate.

- For both the Fall 1992 and Fall 1996 cohorts, two out of three students did not change their initial declaration status as they began their sophomore year. While a greater percentage from the 1996 cohort began their freshmen year with a declared major, insufficient data exists at this time to suggest that this cohort will have a better graduation rate than the Fall 1992 cohort of entering first-time freshmen.

James Madison University is committed to increase the number of graduates who can contribute to a technologically expanding workplace and to make the completion of a degree as efficient as possible. Graduates in Sciences, Mathematics, Computer Science, Business and Integrated Science are in demand in the work place. At the same time, the requirements for these disciplines tend to mitigate against degree completion in four years. This paradox may well be an important challenge for JMU.

The Office of Institutional Research will continue this study of the Fall 1992 cohort for one more year, 1997-98, the sixth year of study for this cohort. OIR will also track the Fall 1996 cohort in a similar fashion over time. What will remain undetermined from the study of either the Fall 1992 or Fall 1996 cohorts is the influence on changes in majors and on graduation rates of the General Education program which began in the fall of 1997. Hopefully, this significant restructuring of the core undergraduate curriculum will result in measurable improvements in student achievement and institutional efficiencies.

Questions regarding this study should be directed to the Office of Institutional Research.