

## **Student Success at UNM: Challenges and Opportunities**

University College (UC) Freshman Academic Choices programs serve approximately one-third of the entering freshman class each fall.

### **The Programs**

The Freshman Learning Communities (FLCs) began with two pairs of courses in 2000; by fall of 2010 there were 34 Freshman Learning Communities serving 721 students. Each FLC consists of two academic courses, often courses that satisfy core curriculum requirements.

The Freshman Interest Groups (FIGs) started in 2002. FIGs are small credit-generating seminars attached to large introductory courses. They are typically taught by advisors and other UNM staff members and are geared toward life and study skills. About a dozen FIGs are offered each Fall Semester.

The Living and Learning Communities (LLCs) started in 2001. Like the FIGs, the students are enrolled in a common large course with a linked life and study skills seminar. LLC students live together in a residence hall. UC generally offers fewer than ten LLCs each fall.

UNM partners with CNM to provide Introductory Studies (IS) courses. A small number of IS courses are paired with another disciplinary course to form an FLC.

### **The Data**

We use student-level data for all beginning freshmen who entered UNM in the fall from 2002 through 2010. 95% of freshmen enter UNM through University College.

**Table 1: Descriptive Statistics**

Variable	obs	mean	standard dev.	min	max	Description
<i>Matric 5*</i>	22385	0.31	0.46	0	1	Student matriculated to degree granting college by 5 <sup>th</sup> semester
<i>Matric 6*</i>	19326	0.43	0.50	0	1	Student matriculated to degree granting college by 6 <sup>th</sup> semester
<i>6 yr grad*</i>	11591	0.44	0.50	0	1	Student graduated by the end of the 12 <sup>th</sup> semester after entry
<i>GPA 4*</i>	23563	2.76	0.89	0	4.32	Student's cumulative GPA after 4 <sup>th</sup> semester (or last semester)
<i>2 yr hrs*</i>	23563	44.24	18.50	1.00	95.00	Accumulated hours after 4 <sup>th</sup> semester.
<i>ACT</i>	27056	21.92	4.07	10.00	36.00	Student ACT or adjusted SAT score
<i>HS GPA</i>	27056	3.32	0.47	1.05	4.40	Student high school GPA
<i>GPA adjust</i>	27056	1.55	0.29	0.53	3.26	High School GPA divided by ACT (multiplied by 10 to scale to GPA)
<i>IS number</i>	27056	0.48	0.87	0	8	Number of IS courses taken by student
<i>IS</i>	27056	0.30	0.46	0	1	Student enrolled in any IS course
<i>FIG</i>	27056	0.10	0.30	0	1	Student enrolled in a FIG
<i>FLC</i>	27056	0.20	0.40	0	1	Student enrolled in a FLC
<i>LLC</i>	27056	0.03	0.18	0	1	Student enrolled in a LLC
<i>Matric 1</i>	27056	0.05	0.22	0	1	Student directly admitted to a degree granting college
<i>GPA IS</i>	27056	0.02	0.14	0	1	High School GPA of 3.75 or above and is enrolled in IS courses
<i>4.0</i>	27056	0.09	0.29	0	1	Student earned a 4.0 GPA or above in high school
<i>Female</i>	27056	0.56	0.50	0	1	Student is female
<i>Hispanic</i>	27056	0.40	0.49	0	1	Student is Hispanic
<i>AmerIndian</i>	27056	0.05	0.22	0	1	Student is American Indian
<i>Black</i>	27056	0.03	0.18	0	1	Student is Black
<i>Asian</i>	27056	0.04	0.19	0	1	Student is Asian
<i>White</i>	27056	0.43	0.50	0	1	Student is White
<i>Free Lunch**</i>	18058	0.38	0.20	0.056	1	Percent receiving free lunch at student's high school
<i>Lunch**</i>	18058	0.45	0.22	0.078	1	Percent receiving free or reduced lunch at student's high school
<i>ParentColl</i>	21101	0.62	0.49	0	1	One of student's parents attained educational status of "college or beyond"

Notes: Number of Observations varies because

\*Some students have not been enrolled long enough to achieve this measure

\*\* Data available only for students from a New Mexico high school

**Table 2: Correlation between pairs of variables**

	<i>Matric 5</i>	<i>Matric 6</i>	<i>6 yr grad</i>	<i>2 yr hours</i>	<i>GPA 4</i>	<i>FIG</i>	<i>FLC</i>	<i>LLC</i>	<i>IS</i>	<i>ACT</i>	<i>HS GPA</i>	<i>GPA adjust</i>	<i>female</i>	<i>Hisp.</i>	<i>Amer Indian</i>	<i>Black</i>	<i>Asian</i>	<i>Lunch</i>	
<i>Matric5</i>	1.00																		
<i>Matric6</i>	0.70	1.00																	
<i>6yrgrad</i>	0.49	0.62	1.00																
<i>2yrhrs</i>	0.51	0.61	0.60	1.00															
<i>GPA 4</i>	0.46	0.54	0.56	0.68	1.00														
<i>FIG</i>	-0.06	-0.05	-0.03	-0.04	-0.06	1.00													
<i>FLC</i>	0.01	0.03	0.04	0.06	0.05	-0.14	1.00												
<i>LLC</i>	0.01	0.01	0.01	0.02	0.02	-0.04	-0.04	1.00											
<i>IS</i>	-0.25	-0.24	-0.21	-0.26	-0.22	0.14	-0.07	-0.01	1.00										
<i>ACT</i>	0.32	0.30	0.24	0.30	0.32	-0.14	0.02	0.03	-0.60	1.00									
<i>HS GPA</i>	0.36	0.38	0.35	0.40	0.50	-0.06	0.01	0.01	-0.32	0.44	1.00								
<i>GPA adjust</i>	-0.07	-0.03	0.00	-0.02	0.04	0.10	-0.04	-0.02	0.41	-0.70	0.30	1.00							
<i>Female</i>	0.02	0.06	0.10	0.09	0.14	0.02	0.10	-0.03	0.04	-0.06	0.13	0.15	1.00						
<i>Hispanic</i>	-0.09	-0.08	-0.07	-0.09	-0.10	0.07	-0.01	-0.02	0.17	-0.25	-0.06	0.22	0.02	1.00					
<i>Amer. Indian</i>	-0.07	-0.08	-0.09	-0.07	-0.10	0.03	0.04	0.03	0.07	-0.11	-0.08	0.05	0.03	-0.22	1.00				
<i>Black</i>	0.00	0.01	-0.02	-0.01	-0.02	0.02	-0.04	0.00	0.01	-0.05	-0.06	0.00	-0.01	-0.15	-0.04	1.00			
<i>Asian</i>	0.04	0.04	0.04	0.07	0.05	-0.02	-0.01	-0.02	0.01	0.00	0.04	0.04	-0.01	-0.18	-0.05	-0.03	1.00		
<i>Lunch</i>	-0.10	-0.12	-0.14	-0.14	-0.11	0.06	-0.03	0.01	0.19	-0.26	0.08	0.33	0.02	0.25	0.17	-0.03	-0.07	1.00	
<i>Parent Coll</i>	0.11	0.11	0.10	0.12	0.12	-0.07	0.03	0.03	-0.15	0.24	0.10	-0.18	-0.06	-0.23	-0.02	0.01	-0.05	-0.22	1.00

Figure 1:

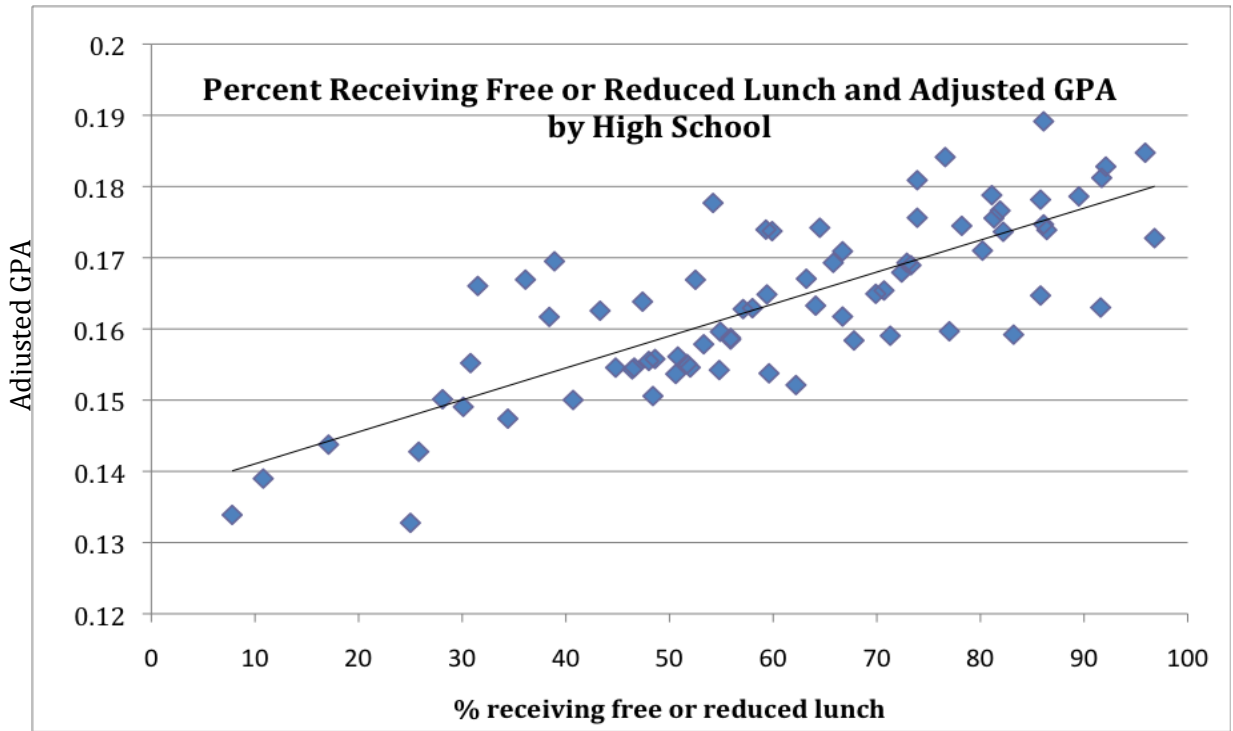
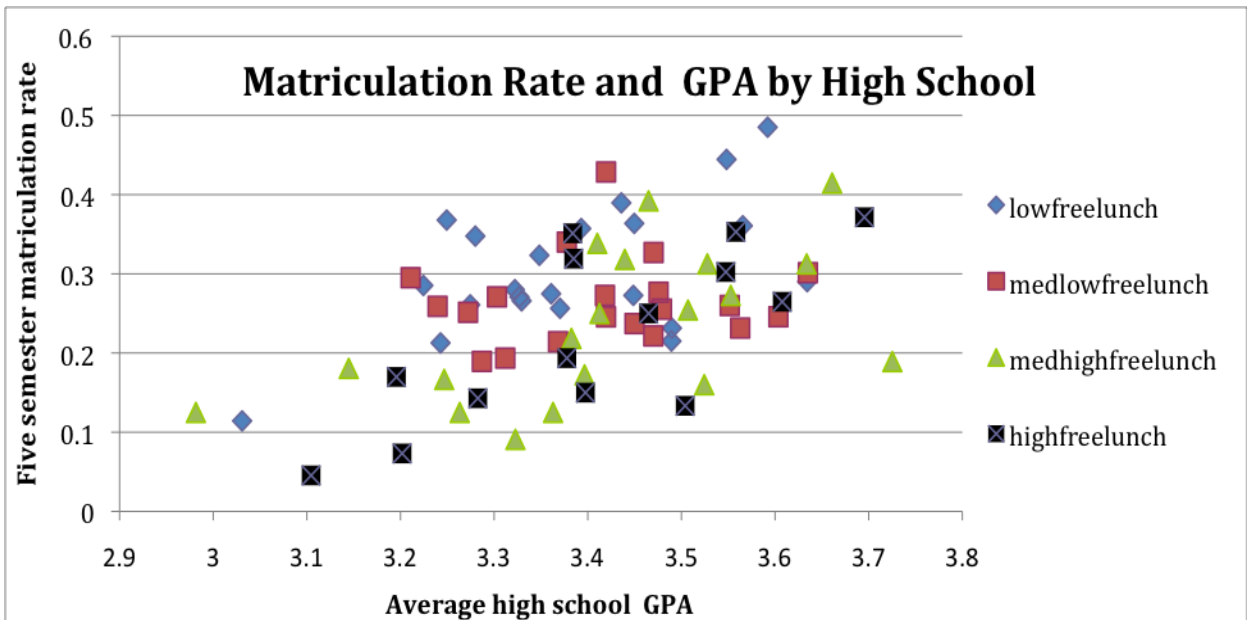


Figure 2:



## The Relative Impact of Characteristics, Programs

### Statistically Significant Effects

Marginal Effects at the Mean (Matriculation, Graduation) or OLS Estimates (Credit Hours, GPA) (Models with greatest number of control variables)

	2-Year Credit Hours	4 <sup>th</sup> Semester GPA	5 <sup>th</sup> Semester Matriculation	6-year Graduation
FIG		+0.04**	-0.03*	
FLC	+2.21***	+0.12***		+0.03*
LLC	+3.08***	+0.17***	+0.05*	
IS	-3.18***		-0.19***	-0.06**
ACT	-0.44**	+0.02***		-0.02**
HS GPA	+18.18***	+0.81***	+1.08***	+0.55***
GPA Adjust	-11.01***		-0.45**	-0.33***
Female	+1.51***	+0.13***		+0.07***
Hispanic	+0.90***	-0.03*		
American Indian		-0.20***	-0.12**	-0.09***
Black	+1.78**		+0.13*	
Asian	+4.72***	+0.10***	+0.11***	+0.06*
Free/Reduced Lunch	-9.85***	-0.45***	-0.39***	-0.37***
Parent College	+1.32***	+0.07***	+0.08***	+0.03*
*** p<0.01, ** p<0.05, * p<0.1				

## **Conclusions**

Students from low-income high schools and students who are first-generation college attenders do not progress to graduation as successfully as do students from a more privileged background.

When we control for SES and other characteristics, we observe no achievement gap between Hispanic or Black students and White students.

American Indian students suffer an achievement gap in all of our specifications even when controlling for socioeconomic and other characteristics.

Participation in a Freshman Academic Choice appears to foster success:

- Participation in the FLCs is consistently positively associated with better outcomes.
- Results for the LLCs are also robustly positive but we cannot separately account for the positive effects of living in a residence hall.
- There appears to be negative selection into the FIGs. Once variables that account for that selection are included, FIG participants are no worse off than students overall.

GPA Adjust appears to measure the degree to which students have good grades but are less well-prepared for college: It is almost always negatively correlated with success at UNM. Hispanic students and students who attend low-income high schools are relatively more likely to experience a high GPA Adjust.

## Estimation Model Details

**Table 3: Probit estimates of likelihood of matriculating by 5<sup>th</sup> Semester**

	"Raw": Treatment Variable Only	IS Courses Added	Entering Academic Characteristics	Demographic, Socioeconomic Variables
VARIABLES				
<i>FIG</i>	-0.224*** (0.0376)	-0.128*** (0.0387)	-0.0881** (0.0404)	-0.0747* (0.0405)
<i>FLC</i>	0.0212 (0.0294)	0.0184 (0.0300)	0.0434 (0.0311)	0.0443 (0.0314)
<i>LLC</i>	0.222*** (0.0751)	0.216*** (0.0765)	0.125 (0.0795)	0.148* (0.0795)
<i>IS</i>		-0.728*** (0.0280)	-0.203*** (0.0358)	-0.189*** (0.0360)
<i>ACT</i>			0.0224 (0.0168)	0.0173 (0.0169)
<i>HS GPA</i>			1.055*** (0.112)	1.078*** (0.113)
<i>GPA Adjust</i>			-0.499** (0.226)	-0.451** (0.226)
<i>Female</i>				0.0289 (0.0272)
<i>Hispanic</i>				0.00430 (0.0301)
<i>Amer. Indian</i>				-0.124** (0.0626)
<i>Black</i>				0.132* (0.0771)
<i>Asian</i>				0.114* (0.0655)
<i>Lunch</i>				-0.390*** (0.0669)
<i>Parent College</i>				0.0787*** (0.0279)
<i>Constant</i>	-0.502*** (0.0150)	-0.296*** (0.0169)	-3.734*** (0.372)	-3.677*** (0.375)
Observations	11,914	11,914	11,914	11,914
ll	-7271	-6911	-6312	-6277
df_m	3	4	7	14
chi2	49.01	768.1	1966	2036

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3A: Marginal Effects on likelihood of matriculating by 5<sup>th</sup> semester**

VARIABLES	"Raw": Treatment Variable Only	IS Courses Added	Entering Academic Characteristics	Demographic, Socioeconomic Variables
<i>FIG</i>	-0.078	-0.044	-0.029	-0.025
	0.013	0.013	0.013	0.013
<i>FLC</i>	0.007	0.006	0.014	0.015
	0.010	0.010	0.010	0.010
<i>LLC</i>	0.077	0.074	0.042	0.049
	0.026	0.026	0.026	0.026
<i>IS</i>		-0.249	-0.068	-0.189
		0.009	0.012	0.012
<i>ACT</i>			0.007	0.017
			0.006	0.006
<i>HS GPA</i>			0.351	1.078
			0.037	0.037
<i>GPA Adjust</i>			-0.166	-0.451
			0.075	0.075
<i>Female</i>				0.029
				0.009
<i>Hispanic</i>				0.004
				0.010
<i>Amer. Indian</i>				-0.124
				0.021
<i>Black</i>				0.132
				0.026
<i>Asian</i>				0.114
				0.022
<i>Lunch</i>				-0.390
				0.022
<i>Parent Coll</i>				0.079
				0.009

Standard Errors reported below estimates.



**Table 4: Probit estimates of the probability of graduating in 6 years**

	"Raw": Treatment Variable Only	IS Courses Added	Entering Academic Characteristics	Demographic, Socioeconomic Variables
VARIABLES				
<i>FIG</i>	-0.0981** (0.0451)	-0.0122 (0.0461)	0.0190 (0.0476)	0.0347 (0.0482)
<i>FLC</i>	0.122*** (0.0418)	0.0867** (0.0423)	0.0994** (0.0436)	0.0786* (0.0445)
<i>LLC</i>	0.0810 (0.127)	0.0886 (0.128)	0.0737 (0.131)	0.141 (0.132)
<i>IS</i>		-0.561*** (0.0359)	-0.173*** (0.0457)	-0.152*** (0.0462)
<i>ACT</i>			-0.0424* (0.0224)	-0.0538** (0.0228)
<i>HS GPA</i>			1.340*** (0.148)	1.400*** (0.150)
<i>GPA Adjust</i>			-0.920*** (0.290)	-0.846*** (0.293)
<i>Female</i>				0.176*** (0.0362)
<i>Hispanic</i>				0.00187 (0.0398)
<i>Amer. Indian</i>				-0.236*** (0.0833)
<i>Black</i>				-0.0169 (0.107)
<i>Asian</i>				0.157* (0.0931)
<i>Lunch</i>				-0.937*** (0.0901)
<i>Parent Coll</i>				0.0673* (0.0369)
<i>Constant</i>	-0.149*** (0.0200)	0.0221 (0.0228)	-2.235*** (0.484)	-2.020*** (0.493)
Observations	6,029	6,029	6,029	6,029
ll	-4133	-4009	-3703	-3611
df_m	3	4	7	14
chi2	15.72	265.6	877.1	1061

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4A: Marginal Effects, Six-year Graduation**

VARIABLES	"Raw": Treatment Variable Only	IS Courses Added	Entering Academic Characteristics	Demographic, Socioeconomic Variables
<i>FIG</i>	-0.039 0.018	-0.005 0.018	0.007 0.048	0.014 0.019
<i>FLC</i>	0.048 0.017	0.034 0.017	0.039 0.044	0.031 0.018
<i>LLC</i>	0.032 0.050	0.035 0.050	0.029 0.131	0.056 0.052
<i>IS</i>		-0.222 0.014	-0.068 0.046	-0.060 0.018
<i>ACT</i>			-0.017 0.022	-0.021 0.009
<i>HS GPA</i>			0.528 0.148	0.551 0.059
<i>GPA Adjust</i>			-0.362 0.290	-0.333 0.115
<i>Female</i>				0.069 0.014
<i>Hispanic</i>				0.001 0.016
<i>Amer. Indian</i>				-0.093 0.033
<i>Black</i>				-0.007 0.042
<i>Asian</i>				0.062 0.037
<i>Lunch</i>				-0.369 0.035
<i>Parent Coll</i>				0.026 0.015

**Table 5: OLS estimates of predictors, 2-year credit accumulation**

	Treatment Variable Only	IS Courses Added	Entering Academic Characteristics	Demog, SES Variables
<i>FIG</i>	-2.031*** (0.486)	-0.303 (0.471)	0.311 (0.443)	0.526 (0.439)
<i>FLC</i>	1.992*** (0.396)	2.037*** (0.381)	2.337*** (0.358)	2.205*** (0.356)
<i>LLC</i>	4.465*** (0.996)	4.041*** (0.958)	2.552*** (0.898)	3.081*** (0.888)
<i>IS</i>		-10.41*** (0.329)	-3.505*** (0.395)	-3.176*** (0.391)
<i>ACT</i>			-0.345* (0.176)	-0.435** (0.175)
<i>HS GPA</i>			17.83*** (1.172)	18.18*** (1.166)
<i>GPA Adjust</i>			-11.82*** (2.320)	-11.01*** (2.298)
<i>Female</i>				1.508*** (0.297)
<i>Hispanic</i>				0.901*** (0.336)
<i>Amer. Indian</i>				-0.247 (0.650)
<i>Black</i>				1.778** (0.856)
<i>Asian</i>				4.718*** (0.725)
<i>Lunch</i>				-9.846*** (0.739)
<i>Parent College</i>				1.316*** (0.308)
<i>Constant</i>	44.54***	47.77***	11.82***	13.49***

	(0.197)	(0.216)	(3.841)	(3.831)
Observations	12,538	12,538	12,538	12,538
R-squared	0.005	0.079	0.194	0.213
df_m	3	4	7	14

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6: OLS Estimates of effects on 4<sup>th</sup> Semester GPA**

	“Raw”: Treatment Variable Only	IS Courses Added	Entering Academic Characteristics	Demographic, Socioeconomic Variables
<i>FIG</i>	-0.0823*** (0.0236)	-0.00859 (0.0231)	0.0293 (0.0205)	0.0403** (0.0202)
<i>FLC</i>	0.107*** (0.0192)	0.109*** (0.0187)	0.133*** (0.0166)	0.121*** (0.0164)
<i>LLC</i>	0.258*** (0.0483)	0.240*** (0.0469)	0.144*** (0.0416)	0.169*** (0.0409)
<i>IS</i>		-0.444*** (0.0161)	-0.0294 (0.0183)	-0.0154 (0.0180)
<i>ACT</i>			0.0289*** (0.00817)	0.0242*** (0.00809)
<i>HS GPA</i>			0.813*** (0.0543)	0.805*** (0.0537)
<i>GPA Adjust</i>			-0.0239 (0.107)	0.0434 (0.106)
<i>Female</i>				0.128*** (0.0137)
<i>Hispanic</i>				-0.0286* (0.0155)
<i>Amer. Indian</i>				-0.198*** (0.0299)
<i>Black</i>				-0.0344 (0.0395)
<i>Asian</i>				0.0952*** (0.0334)
<i>Lunch</i>				-0.448*** (0.0340)
<i>Parent College</i>				0.0650*** (0.0142)
<i>Constant</i>	2.743***	2.881***	-0.579***	-0.446**

	(0.00957)	(0.0106)	(0.178)	(0.177)
Observations	12,538	12,538	12,538	12,538
R-squared	0.006	0.063	0.266	0.291
df_m	3	4	7	14

---

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1