CLA MIGRATION PROJECT – CSULB Migration Patterns

Monday, April 27, 2019

NOTE: The following report used Fall 2013 first-time freshmen migration data.

Can we identify patterns of migration (i.e. major switching between colleges)?

In the study of the Fall 2013 freshmen cohort, it was revealed that almost 32% of students (excluding students that start out as undeclared) **migrate**[1] from one college to another during their time at CSULB (See Table 1). In reviewing total college migration patterns, including students who begin at CSULB as undeclared, that number jumped to 44%. Although the scope of the current CLA Data Fellows project was on college migration, department migration was even more prevalent (See Table 1).

Table 1

SCOPE OF CSULB MIGRATION (Includes Students that Left University before Obtaining a Degree)					
ENTRY INFORMATION		**TOTAL MIGRATION**			
Entry College	**Cohort Size**	**College Migration**	**% College Migration**	**Dept Migration**	**% Dept Migration**
Business Administration	380	111	29.2%	182	47.9%
Education	43	14	32.6%	14	32.6%
Engineering	710	197	27.7%	305	43.0%
Health and Human Services	816	275	33.7%	426	52.2%
Liberal Arts	528	103	19.5%	200	37.9%
Natural Sciences & Mathematics	424	257	60.6%	273	64.4%
The Arts	371	74	19.9%	98	26.4%
Undeclared	1071	892	83.3%	904	84.4%
Grand Total Migration	**4343**	**1923**	**44.3%**	**2402**	**55.3%**
Grand Total Migration (Excluding Undeclared)	**3272**	**1031**	**31.5%**	**1498**	**45.8%**

As seen in Table 1, migration patterns vary by college. Excluding undeclared students, which are expected to migrate once they declare a major, the college with the highest college migration was Natural Sciences & Mathematics (CNSM), with 60.6% of students migrating.[2] Once accounting for attrition rates, as some students
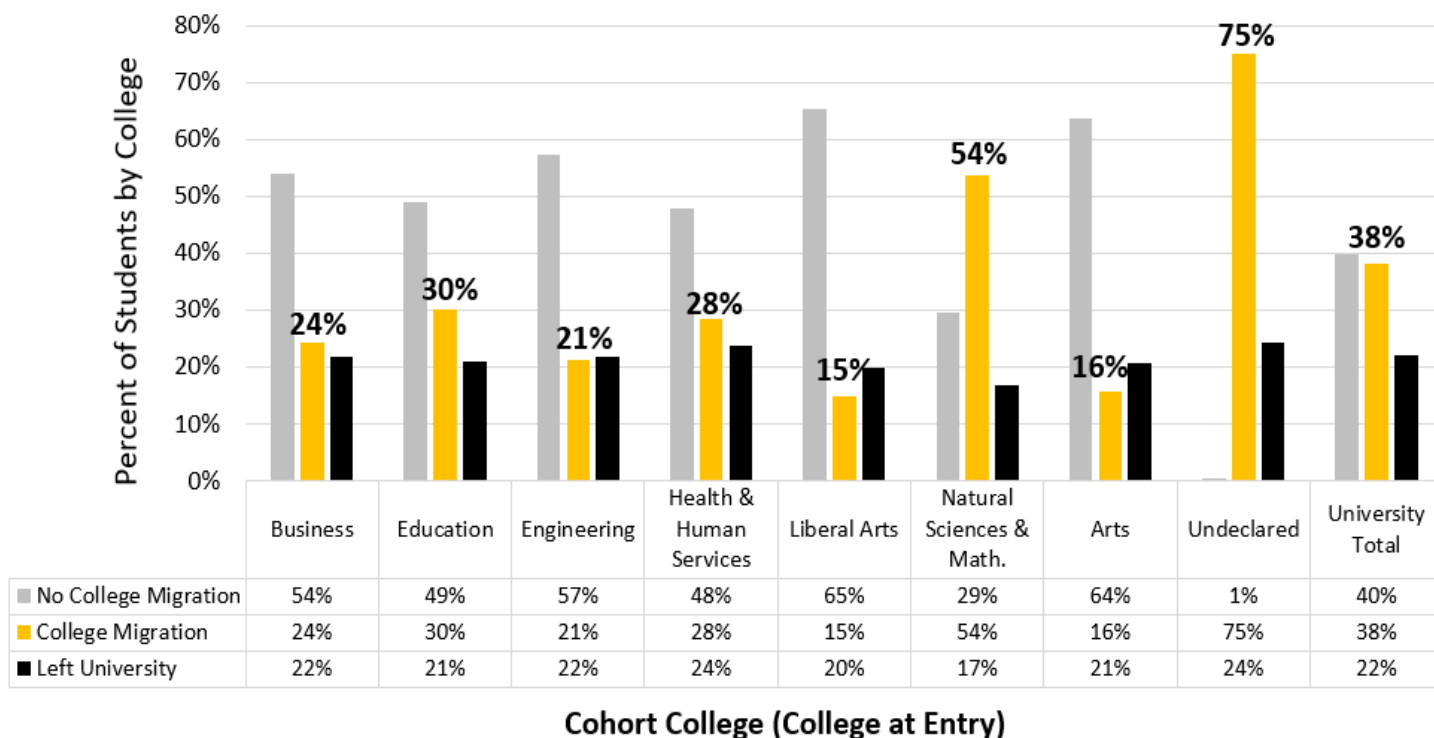
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[1] **Migration** broadly refers to changing majors. **College migration** refers to changing majors from one college to another, including from undeclared to another college unless indicated. **Department migration** refers to changing majors from within one department to another, including from undeclared to another department unless indicated. Because the focus of the study is on these broader migration patterns rather than **major switching** (i.e. the switch from one major to another major), the magnitude of total major switching is not captured in this report, but can be expected to be even more prevalent than the college and department migrations demonstrated in this report.
[2] Note that Table 1 captures all students that migrated to another college, regardless of whether they ended up obtaining a degree, continued to be enrolled, or left the university before obtaining a degree.

who migrate end up leaving the university, the migration patterns do decline somewhat, with CNSM going from 60.6% migration to 54% migration (See Figure 1). Comparing college and department migration rates for CNSM showed that most of the students that migrate from one department to another (64.4%) primarily migrate to another college as well (60.6%). The college with the lowest migration was Liberal Arts (CLA), followed by The Arts (COTA).

Figure 1

Fall 2013 Freshmen Migration Patterns by College

	Business	Education	Engineering	Health & Human Services	Liberal Arts	Natural Sciences & Math.	Arts	Undeclared	University Total
No College Migration	54%	49%	57%	48%	65%	29%	64%	1%	40%
College Migration	24%	30%	21%	28%	15%	54%	16%	75%	38%
Left University	22%	21%	22%	24%	20%	17%	21%	24%	22%

Cohort College (College at Entry)

When do students migrate?

61% of students who migrate colleges migrate in the first or second year (with 24% migrating in the first year and 37% migrating in the second year).[3] However, an additional 29% of students also migrate in the third year, and another 10% of students migrate in their fourth and fifth years . See Table 2 for semester-by-semester breakdowns for both the university and each college.[4]

Figure 2 shows percentage breakdown of semester-by-semester migrations for the entire university.

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[3] Note that this captures the first time a student migrated colleges. Some students migrated multiple times.
[4] The project webpage on the Data Fellows website has an exact breakdown of which terms are included under each semester's figures.

Table 2

| TOTAL CSULB MIGRATION: When do students migrate?*										
(Includes Migration Patterns of Students that Left University before Obtaining a Degree)										
Entry College	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10	Grand Total
Business Administration	27	18	21	19	12	10	2	2		111
Education	6	2	1		2	3				14
Engineering	40	55	30	34	11	15	5	5	2	197
Health and Human Services	94	55	38	42	20	19	3	3	1	275
Liberal Arts	55	14	11	13	4	4	1	1		103
Natural Sciences & Mathematics	93	42	45	34	24	9	6	4		257
The Arts	30	14	13	14	2	1				74
Undeclared	112	165	192	226	96	72	15	13	1	892
Grand Total	457	365	351	382	171	133	32	28	4	1923
When do students migrate?*										
(as percentage of total migration by college)										
Entry College	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10	Grand Total
Business Administration	24%	16%	19%	17%	11%	9%	2%	2%	0%	100%
Education	43%	14%	7%	0%	14%	21%	0%	0%	0%	100%
Engineering	20%	28%	15%	17%	6%	8%	3%	3%	1%	100%
Health and Human Services	34%	20%	14%	15%	7%	7%	1%	1%	0%	100%
Liberal Arts	53%	14%	11%	13%	4%	4%	1%	1%	0%	100%
Natural Sciences & Mathematics	36%	16%	18%	13%	9%	4%	2%	2%	0%	100%
The Arts	41%	19%	18%	19%	3%	1%	0%	0%	0%	100%
Undeclared	13%	18%	22%	25%	11%	8%	2%	1%	0%	100%
% Total	24%	19%	18%	20%	9%	7%	2%	1%	0%	100%

* Captures college migration. Note that some students migrate colleges multiple times. The semester indicated depicts the first time students may have migrated a college. Refer to the QR code on the Data Fellows website for a document breaking down the what terms are included under each semester's counts.

Figure 2

University Migration Patterns: When do students migrate?

Of the 1,923 students that migrated from the Fall 2013 freshmen cohort (n = 4,343), what is the distribution by semester they migrated?
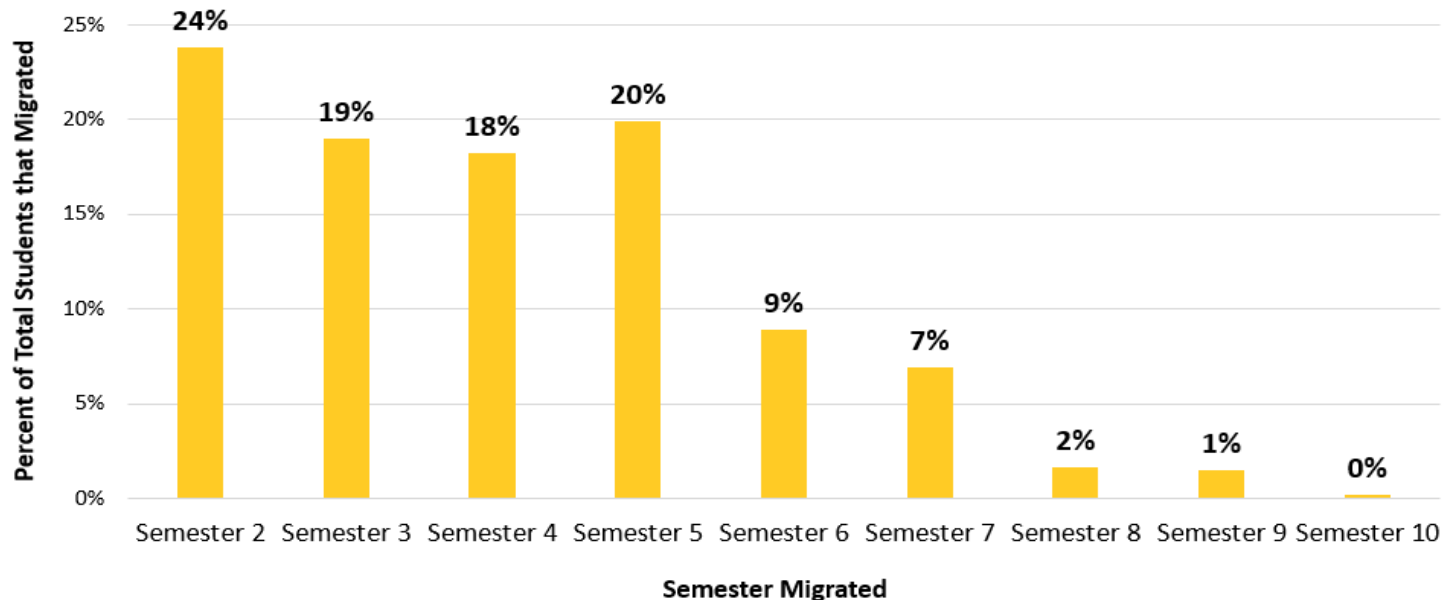
Where do students migrate to?

As shown in Figure 3, 39% of all students who migrate colleges migrate to CLA, followed by CHHS at 23%.

Figure 3

University Migration Patterns: Where do students migrate to?

Of the 1,923 students that migrated from the Fall 2013 freshmen cohort (n = 4,343), what is the distribution by college students migrated to?
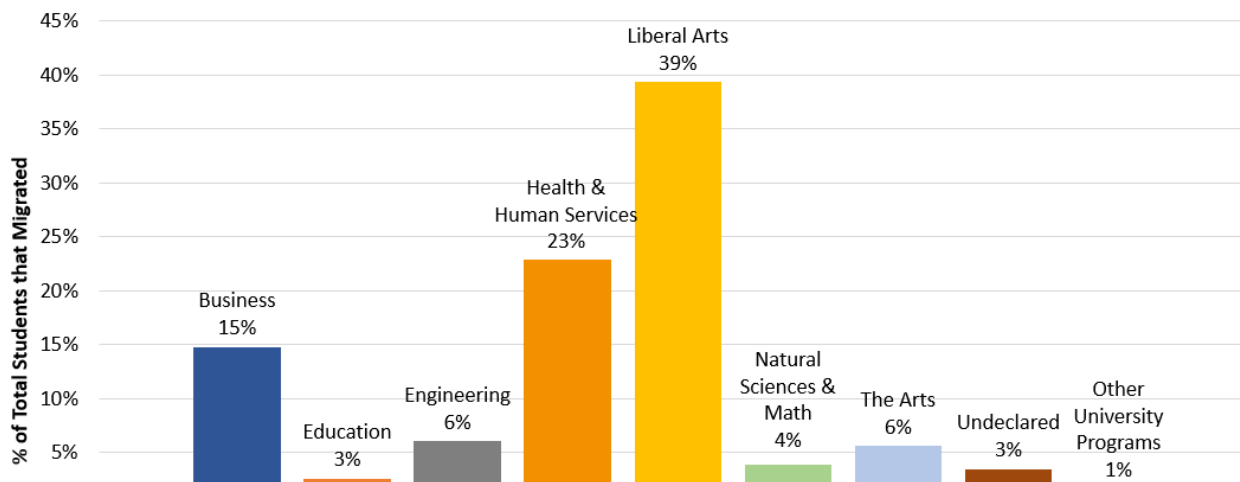

Table 3 shows breakdowns of migration by college of origin and by "final destination" college.

Table 3

TOTAL CSULB MIGRATION: Where do students migrate to?*									
(Includes Migration Patterns of Students that Left University before Obtaining a Degree)									
	Final Destination College								
Entry College	Business	Education	Engineering	Health & Human Services	Liberal Arts	Natural Sciences & Math	The Arts	Undeclared	Other University Programs	Grand Total
Business	6 **	3	4	30	50		6	7	5	111
Education	2	1 **	1	3	6				1	14
Engineering	55		8 **	19	60	17	13	17	8	197
Health & Human Services	33	12	6	34 **	157	15	1	11	6	275
Liberal Arts	17	10		26	31 **	2	9	4	4	103
Natural Sciences & Math	31	3	26	74	97	1 **	9	14	2	257
The Arts	9	1	4	12	30	1	3 **	12	2	74
Undeclared	131	20	67	242	325	38	67	2 **		892
Grand Total	284	50	116	440	756	74	108	67	28	1923

Where do students migrate to?*									
(as percentage of total migration by college)									
	Final Destination College								
Entry College	Business	Education	Engineering	Health & Human Services	Liberal Arts	Natural Sciences & Math	The Arts	Undeclared	Other University Programs	Grand Total
Business	5%	3%	4%	27%	45%	0%	5%	6%	5%	100%
Education	14%	7%	7%	21%	43%	0%	0%	0%	7%	100%
Engineering	28%	0%	4%	10%	30%	9%	7%	9%	4%	100%
Health & Human Services	12%	4%	2%	12%	57%	5%	0%	4%	2%	100%
Liberal Arts	17%	10%	0%	25%	30%	2%	9%	4%	4%	100%
Natural Sciences & Math	12%	1%	10%	29%	38%	0%	4%	5%	1%	100%
The Arts	12%	1%	5%	16%	41%	1%	4%	16%	3%	100%
Undeclared	15%	2%	8%	27%	36%	4%	8%	0%	0%	100%
% Total	15%	3%	6%	23%	39%	4%	6%	3%	1%	100%

* Captures college migration. Note that some students migrate colleges multiple times. The "Final Destination" college captures the college that students migrated to and either obtained a degree from, the college they were still enrolled in as of the end of their fifth year, or the last college they were enrolled in before leaving the university without having obtained a degree.

** Students depicted as having migrated but still listed as part of the same college they started in were students that migrated out of the college but ended up returning to the college of origin.

When and where do undeclared students eventually declare?

As shown in Table 2, 53% of migration among undeclared students occurred in the first and second years (13% in the first year and 40% in the second year). However, an additional 36% migrated in the third year (with 25% of these migrating in Semester 5), and an additional 11% migrated in the fourth and fifth year.

As shown in Table 3, 36% of undeclared students that migrated went to CLA, followed by 27% to CHHS.

What student characteristics predict migration? Are some students more likely to migrate?

Holding constant other factors, such as college preparedness:

- LBUSD graduates are more likely to migrate.
- Underserved minorities are more likely to migrate into CLA.

See Table 4 for statistically significant factors that predict migration.

Table 4

Table 1. Statistically Significant Findings		
Research Question	Increased Probability	Decreased Probability
Among freshmen who entered with any declared major, what factors predicted switching to a major in a different college? (*n* = 3,272)	• Lived in on-campus housing* • Graduated from LBUSD high school* • Had any remedial needs* • Completed AP Calculus (S)* • Entered in a CNSM major** • Greater importance of "To be able to make more money" in decision to go to college (S)* • Higher stated likelihood of changing majors (S)**	• Greater age at entry* • Higher eligibility index*
Among freshmen who entered with a declared major outside of the CLA, what factors predicted switching to a CLA major? (*n* = 2,744)	• Underserved minority* • Lived in on-campus housing** • Graduated from LBUSD high school** • Completed AP Calculus (S)** • Higher stated likelihood of changing majors (S)** • Higher self-rated writing ability (S)**	• Greater importance of "To make me a more cultured person" in decision to go to college (S)*
Among freshmen who entered undeclared, what factors predicted declaring a CLA major? (*n* = 1,071)	• Female** • Pell eligible** • Athlete** • More college preparatory courses** • Completed AP Statistics (S)**	• Greater importance of "To get training for a specific career" in decision to go to college (S)**
How does switching colleges, along with other factors, affect the probability of graduating within four years? (*n* = 4,343)	• Female* • Entered in a CLA major** • Higher eligibility index** • More college preparatory courses** • More units attempted in first semester** • Number of AP exams passed** • Declared or switched colleges in 2nd semester*	• Pell eligible* • Underserved minority** • Graduated from LBUSD high school** • Had any remedial needs** • Entered in a CNSM major* • Greater importance of "To gain a general education and an appreciation of ideas" in decision to go to college" (S)* • Declared or switched colleges in 5th semester** • Declared or switched colleges in 6th semester** • Declared or switched colleges in 7th semester**

How does the timing of migration, controlling for other factors, affect the probability graduating within 4 years?

- LBUSD graduates and underserved minorities are less likely to graduate within 4 years, partly due to their migration tendencies.
- Migrating from the 5th semester onward reduces the likelihood of graduating within four years.
- Freshmen who indicate on The Freshman Survey that they are more likely to switch majors are indeed more

LBUSD graduates, underserved minorities, and those who state that they are more likely to switch majors are examples of student populations that can be identified as at risk of delayed graduation.

See Table 4 for statistically significant factors that affect the probability of graduating in four years.