

## Topic in Brief

### Opportunities to increase the normative graduation rate: Transfer entrants

January, 2017

The 2-year graduation rate of transfer entrants might be increased by focusing on high-achieving students who may otherwise graduate in 2.5 years, by admitting Letters & Science students into majors, and by offering programs to prepare STEM majors to graduate in two years.

#### OVERVIEW

This briefing note highlights the main points from the more in-depth report, “Factors related to graduation rates: Transfer entrants,” and has a companion briefing note on freshman entrants, “Opportunities to increase the normative graduation rate: Freshman entrants.”

Most Berkeley transfer students (60%) graduate within the normative time frame of two years. However, a sizeable portion (17%) takes one extra Fall or Spring term to graduate. For comparison, freshmen who entered in Fall 2008 and Fall 2009 had a normative (4-year) graduation rate of 72%, with an additional 10% graduating in one extra term.

Opportunities for increasing normative graduation rates surfaced when we identified large numbers of students from certain groups who graduated in one extra term. Students who are doing well academically are a promising group to focus on to increase the overall 2-year graduation rate for transfer students. In their first term, most transfer students earned at least a B average (82%,  $n = 7,072$ ) and attempted at least 13 units (93%,  $n = 8,371$ ). By the end of the second term, 92% had declared a major. Although these groups of students are over-represented among those graduating within 2 years, many take an extra Fall or Spring term to graduate.

In the analysis, differences emerged in graduation rates by School, College, or Division of the first declared major. Those differences that persisted after controlling for demographic variables and admissions criteria highlight the potential benefits of clearly articulated 2-year pathways, matching course availability with student demand, and offering courses for students entering science, technology, engineering, and math (STEM) units in the summer before matriculation.

The vast majority of students declared their majors by the end of the second term after entry, and those who did not had significantly lower 2-year graduation rates. There may be opportunities, particularly within the College of Letters & Science (L&S), to admit students into majors.

The analysis also points to opportunities for better curriculum articulation for Work-Study participation and study abroad programs.

#### Methodology

This analysis includes students who entered as transfers during Fall 2008 ( $n = 2,017$ ), Fall 2009 ( $n = 2,205$ ), Fall 2010 ( $n = 2,199$ ), and Fall 2011 ( $n = 2,337$ ). These cohorts were chosen to allow for the analysis of 3-year graduation rates.

Graduation data include degree recipients through Summer 2014. Normative

graduation for transfer entrants is two years from the time of entry. One extra term is defined as one academic-year term (Fall or Spring) beyond the normative graduation time.

Demographic variables (gender, ethnicity, Pell Grant recipient status, and first-generation college student information) were sourced from Cal Answers in Spring 2016. “First-generation college” is defined as a student who reported that neither parent graduated from a four-year college. “Pell Grant recipient” is defined as a student who received a Pell Grant while at Berkeley. U.S. residents and eligible non-citizens at lower annual income levels (typically less than \$45,000) are eligible to receive Pell Grants.

Admissions selection data, including transfer grade point average (GPA) and athlete at entry, were sourced from Cal Answers. One percent (n = 92) of the students were athletes at entry, about one-third of whom entered with fewer than 60 units. Given the small number of athletes at entry and the sizeable proportion who entered at less than Junior standing, athletes at entry were not considered separately for analysis.

Initial academic indicators include first-term units attempted, first-term GPA, and first-year Academic Probation. The number of units attempted was measured at the time of Census for each student’s first term at Berkeley. To evaluate academic performance, students were placed into groups based on their first-term GPA and whether or not they were on Academic Probation in their first year:

- GPA < 2.00 or Academic Probation
- GPA 2.00-2.69 (C / C+)
- GPA 2.70-3.69 (B average)
- GPA 3.70-4.00 (A average)

Students were grouped into the School, College, or Division in which they first declared a major. If a student declared more than one major at the same time, the first major alphabetically was used. Time to declaration was measured in elapsed terms from entry. Data on academic indicators were sourced from Cal Answers.

Campus experiences included in the analysis were Work-Study participation and

study abroad participation. Information was provided by the Berkeley Study Abroad Office for students who participated in UC Education Abroad Program (EAP) / Berkeley Abroad from Summer 2008 through Spring 2016. The Berkeley Financial Aid and Scholarships Office supplied data about Work-Study activity from academic year 2008-09 through 2015-16.

These demographic, admissions selection, academic indicator, and campus experience factors were used in logistic regression models. Two separate models were estimated:

- Graduating within 2 years compared to graduating at 2.5 years
- Graduating within 2.5 years compared to graduating at 3 years

Adjusted graduation rates were calculated post hoc.

## GRADUATION RATES

For students who entered as transfers in the Fall term of 2008, 2009, 2010, and 2011 (N = 8,758), the 2-year graduation rate was 60% and the 2.5-year graduation rate was 77%. Within three years of entry, 87% of students in these cohorts had graduated.

### Cumulative graduation rates (N = 8,758)

	Count	Rate
<b>2-year</b>	5,234	60%
<b>2.5-year</b>	6,706	77%
<b>Ever graduated</b>	8,087	92%

For only those students who graduated within 2.5 years (N = 6,706), 78% (n = 5,234) graduated within 2 years and 22% (n = 1,472) took an extra term.

## DEMOGRAPHIC VARIABLES

In bivariate analysis of graduation rates by demographic groups (see report “Factors related to graduation rates: Transfer entrants”), there were two demographic groups with 2-year graduation rates below 55%: Underrepresented Minority (URM) students and Pell Grant recipients. The 2-year graduation rate for URM students was 51%, compared with 62% for non-URM students.

## Count and percent of students graduating within two years, by Underrepresented Minority students and by family income

	URM students				Not URM students				Point difference in 2-year rate
	Within 2 years		>2 years		Within 2 years		>2 years		
	n	%	n	%	n	%	n	%	
<b>Total</b>	845	51%	822	49%	4,389	62%	2,702	38%	11
Not Pell recipient	308	66%	156	34%	2,498	69%	1,131	31%	3
Pell Grant recipient	537	45%	666	55%	1,891	55%	1,571	45%	10

The share of URM students in the Fall 2008 and Fall 2009 cohorts of freshman entrants was 14%, compared to 19% for the transfer cohorts in this analysis.

Transfer Pell Grant recipients had a 52% normative graduation rate, compared with 69% for students who were not Pell recipients. The share of Pell Grant recipients in the Fall 2008 and Fall 2009 cohorts of freshman entrants had a smaller proportion of Pell Grant recipients (33%) than the transfer students in this analysis (53%).

Additional analyses on URM students and Pell Grant recipients are presented in the report, “Factors related to graduation rates: Transfer entrants.” It emerged from these analyses that family income is an important factor in normative graduation. A table from the report is excerpted above; the full table is available in the report on page 6. For students who were not Pell recipients, the 2-year graduation gap between URM students (66%) and non-URM students (69%) was relatively small. These findings suggest that when family income is above a certain threshold, URM students graduate at similar rates as non-URM students.

The differences in 2-year graduation between URM compared with non-URM students and between Pell Grant recipients compared with students who did not receive a Pell Grant were relatively small in the Haas School of Business and relatively large in the L&S Math & Physical Sciences Division and College of Natural Resources (see tables on pages 7 and 9 of the report).

### ACADEMIC INDICATORS

The majority of transfer entrants attempted at least 13 units in their first term

and earned at least a B average. While most of these students graduated within 2 years, a sizeable portion finished in 2.5 years.

### Units attempted in the first term

For students who attempted fewer than 13 units in their first semester, 19% (n = 118) graduated in one extra term. If these 118 students had graduated within 2 years, the overall 2-year graduation rate would have increased by one point, to 61%. The small size of the change is due to the small proportion of students who attempted fewer than 13 units (7%, n = 624). Additional analysis is available in a separate briefing note, “Transfer student first-term academic load and graduation (September 2016).”

### Potential change in campus 2-year graduation rate: Units attempted

Units attempted in the first term	Actual number graduated at 2.5 years	Overall 2-year rate if 2.5-year graduates finished in 2 years
<13	118	61%
13+	1,354	75%

Greater gains would have been made if those who attempted 13 units or greater and graduated in 2.5 years (n = 1,354) had not taken that extra term. In this scenario, the overall 2-year graduation rate would have increased 15 points to 75%.

### First-term GPA and first-year Probation

Students whose first-term GPA was lower than 2.00 or who were placed on Academic Probation in their first year had a

lower normative graduation rate (23%) than other students. Within this population, if the students who had graduated in 2.5 years (n = 84) had instead graduated within 2 years, the overall 2-year graduation rate would have increased one point, to 61%.

Instead, focusing on students who earned an A or B average leads to greater potential gains, in addition to presumably being more feasible since these students are high achieving. If high-achieving students who took an extra term to graduate (n = 1,194) had instead graduated within 2 years, the overall 2-year graduation rate would have been 74%.

**Potential change in campus 2-year graduation rate: First-term GPA**

First-term GPA	Actual number graduated at 2.5 years	Overall 2-year rate if 2.5-year graduates finished in 2 years
<2.00 or Probation	84	61%
C to C+	184	62%
A or B avg	1,194	74%

**Declaring a major**

It is difficult for graduation rates within one School or College to greatly impact the overall campus 2-year graduation rate, with the exception of L&S. For example, if the students who first declared in the College of Engineering and graduated in 2.5 years (n = 315) had graduated within 2 years, the overall campus 2-year graduation rate would have increased three points, to 63%.

Due to its absolute number of students, focusing on students in L&S would have a greater impact on overall campus 2-year graduation rates. Compared to freshman entrants, transfer students are more concentrated in L&S and the Social Sciences Division in particular.

**Potential change in campus 2-year graduation rate: Unit of first declared major**

Unit of first major	Actual number graduated at 2.5 years	Overall 2-year rate if 2.5-year graduates finished in 2 years
Chemistry	80	61%
Engineering	315	63%
CED	17	61%
CNR	51	60%
Haas	12	60%
L&S	997	71%
Administered	99	61%
Arts & Hum	228	62%
Bio Sciences	67	61%
MPS	153	62%
Soc Sciences	307	63%
Undergrad	143	61%

Students who had not declared their majors by the end of the second term had a lower 2-year graduation rate (18%) than those who declared by the end of the second term (63%). If those students who declared their majors by the end of the second term and graduated in 2.5 years (n = 1,396) had instead graduated within 2 years, the overall 2-year graduation rate would have increased 16 points, to 76%.

**Focusing on high-achieving students is the most effective way to increase the 2-year graduation rate**

The large number of students who had declared their majors by the end of the second term could be the focus of attempts to increase 2-year graduation. As with the previous findings in this briefing note and the findings for freshman entrants, students who are poised to do well are the most promising population for increasing the normative graduation rate.

**Potential change in campus 2-year graduation rate: Timing of declaration**

Declared major	Actual number graduated at 2.5 years	Overall 2-year rate if 2.5-year graduates finished in 2 years
After 2nd term	76	61%
By 2nd term	1,396	76%

Clear curricular pathways to graduation might help students who declare the end of the second term, with potential benefits for all students.

The vast majority of transfer students (92%, n = 8,099) declared a major before the end of the second term (see table below). However, opportunities remain, particularly within L&S, to admit students to majors, or to compel students to declare their majors by the end of the second term after entry.

**Declared by end of 2nd term, by Unit**

	Count	%
Chemistry	265	100%
Engineering	769	100%
CED	261	100%
CNR	449	99%
Haas	365	100%
L&S	5,990	93%
Administered	476	90%
Arts & Hum	1,539	95%
Bio Sciences	336	91%
MPS	506	94%
Soc Sciences	2,296	97%
Undergrad	837	80%

Note: Students who did not declare a major (n = 177) are not included.

**Adjusted graduation rates by Unit**

We fit a model estimating the relationship of School, College, or Division with graduating within 2 years compared to in exactly 2.5 years. This model included only students who graduated within 2.5 years, and excluded students who graduated in 3 years or greater or who had not yet graduated. Many of the differences between the Haas School of Business (reference category) and the other Colleges or Divisions remained after adjusting for demographic variables and transfer GPA (see Model I in the table in the next column).

**Students who graduated within 2 years compared to in 2.5 years: Unit of first declared major (N = 6,706)<sup>1</sup>**

	2-year share		Model I <sup>2</sup>	
Chemistry	59%	*	58%	*
Engineering	49%	*	50%	*
CED	93%	*	93%	
CNR	86%	*	85%	*
Haas (reference)	96%		96%	
Letters & Science	80%	*	81%	*
Administered	76%	*	78%	*
Arts & Hum	82%	*	83%	*
Bio Sciences	78%	*	78%	*
Math & Phys Sci	63%	*	61%	*
Social Sciences	83%	*	85%	*
Undergrad Div	81%	*	81%	*

\* Significant at the 0.05 level; <sup>1</sup> Excludes students who graduated in 3 years or greater or who had not graduated; <sup>2</sup> Adjusted for gender, ethnicity, parent education, family income, transfer GPA

Notably, the shares of students graduating within 2 years (compared to within 2.5 years) within the College of Engineering (49%) and L&S Math & Physical Sciences are low (63%). It appears that students in STEM units have particularly low rates of graduating within 2 years, compared to at 2.5 years.

For freshman entrants, many of the differences between Haas (reference) and other Colleges or Divisions were reduced after controlling for demographic variables. This suggests that, for differences across units, demographic and admissions factors are not as salient to normative graduation of transfer students as they are for freshman entrants.

**CAMPUS EXPERIENCES**

**Work-Study**

Twelve percent of students participated in Work-Study (n = 1,088). We fit a model estimating the relationship of Work-Study with graduating within 2 years compared to in exactly 2.5 years. This model excludes students who graduated in three years or greater or who had not yet graduated.

The relationship of Work-Study participation to graduating within 2 rather than graduating at 2.5 years was statistically significant.

**Students who graduated within 2 years compared to in 2.5 years: Work-Study participation (N = 6,706)<sup>1</sup>**

	2-year share	Model 1 <sup>2</sup>	Model 2 <sup>3</sup>
Work-Study	75% *	77%	78% *
Not Work-Study (ref)	79%	79%	82%

\* Significant at the 0.05 level; <sup>1</sup>Excludes students who graduated in 3 years or greater or who had not graduated; <sup>2</sup> Adjusted for gender, ethnicity, parent education, family income, transfer GPA; <sup>3</sup> Further adjusted for first-term units attempted, first-term GPA / first-year Probation, timing and unit of first major declared

Taking into account demographic factors (e.g., parental education and family income) and transfer GPA, participation in Work-Study was no longer related to graduating within two years (see Model 1 in the table above). Further adjusting for academic indicators while at Berkeley, the difference re-emerged (see Model 2). These results suggest that there is an opportunity to better integrate Work-Study into student pathways to 2-year graduation. A similar finding was reported for freshman entrants.

**Study Abroad**

Less than 10% of students (n = 778) in these four cohorts studied abroad. Of those who studied abroad, 45% (n = 354) went on one (n = 343) or more (n = 11) summer trips. These students were just as likely as students who did not study abroad to graduate within 2 years compared to in exactly 2.5 years.

**Students who graduated within 2 years compared to in 2.5 years: Study abroad participation (N = 6,706)<sup>1</sup>**

	2-year share	Model 1 <sup>2</sup>	Model 2 <sup>3</sup>
No study abroad (ref)	79%	80%	82%
Summer trip(s)	77%	78%	75% *
Trip(s) during academic year	57% *	59% *	53% *

\* Significant at the 0.05 level; <sup>1</sup>Excludes students who graduated in 3 years or greater or who had not graduated; <sup>2</sup> Adjusted for gender, ethnicity, parent education, family income, transfer GPA; <sup>3</sup> Further adjusted for first-term units attempted, first-term GPA / first-year Probation, timing and unit of first major declared

After controlling for demographic variables, transfer GPA, and academic indicators at Berkeley, the difference became statistically significant, suggesting that studying abroad during the summer affected the ability of these students to graduate within 2 years. This differed from the finding for freshman entrants that one study abroad trip in the summer was not related to normative graduation.

Students who studied abroad during the academic year (n = 424) had lower shares of 2-year (57%) graduates than students who studied abroad in the summer (77%) or did not study abroad (79%). These findings held after adjusting for demographic variables, transfer GPA (see Model 1 in the previous column), and academic indicators (see Model 2).

A tight integration of study abroad programs with major-specific curricula is a promising strategy to increasing the campus 2-year graduation rate.

**Web Address**

[opa.berkeley.edu](http://opa.berkeley.edu)

**Office Address**

Office of Planning & Analysis  
 655 University Hall, Mail Code 1510  
 Berkeley, CA 94720-1510  
 Phone: 510-642-5735  
 Fax: 510-643-8448