



Undeclared Student Success

The purpose of this report is to describe undeclared students at CSU both relative to declared students and internally by specific undeclared major.

Student success by declared status is assessed across the following metrics:

- ✚ Percent and timing of major declaration
- ✚ Persistence to 2nd, 3rd, 4th fall
- ✚ 6-year graduation
- ✚ Average time to degree

Executive Summary

Undeclared students are just under a third of each entering cohort and are more diverse than their declared counterparts. The following highlights some findings about undeclared student success at CSU.

- ✚ About 1200 undeclared students start each fall semester among the FTFT cohort.
- ✚ The average index for undeclared students is 108 and the average index for declared is 117. First generation students, students of color, and Pell recipients are over-represented among the undeclared majors.
- ✚ The majority of undeclared students declare their major by their second fall semester and not declaring a major in the second or third fall semesters is associated with higher rates of attrition the following semester.
- ✚ Undeclared students take about a half a semester (absolute difference) to a tenth of a semester (relative difference) longer to graduate compared to declared students.
- ✚ Undeclared students graduate at a rate that is 4 to 5 percentage points lower than declared students; however, undeclared students persist and graduate at rates that are similar or slightly higher than declared students once demographic and academic attributes are accounted for.
- ✚ The number of Engineering Interest undeclared students is growing and this group has the lowest graduation rate. Only 11% of Engineering Interest undeclared students graduate from the college of Engineering and only 48% graduate from any college at CSU.
- ✚ Business Interest undeclared students are about 18% of all undeclared students and have a lower average index (102). They also have a relatively low graduation rate from the College of Business (22.8%), but a higher within university graduation rate (62%).
- ✚ Undeclared Exploring have the highest graduation rate (67%) and represent the majority of undeclared students (56%). This group also has a relatively high index (111).

Undeclared students are an important group in the FTFT cohort because of their size as well as their academic / demographic profile and should be regularly monitored to ensure their continued success.



Population

Students that start at CSU as first-time, full-time (FTFT) students in a fall cohort between 2008 and 2015 are included in this study; however, any specific outcome only includes the three most recent applicable cohorts to make sure the outcomes reflect the most recent institutional policy and culture. For instance, persistence to the second fall includes the FA13, FA14, and FA13 cohorts, but six-year graduation only includes the FA08, FA09, and FA10 cohorts. Table 1, below, displays the count of these FTFT cohorts by declared status as well as by specific undeclared major (undeclared majors sub-total to the undeclared group).

Table 1.

| First-Time, Full-Time Cohort Headcounts by Declared Status | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|
| | FA08 | FA09 | FA10 | FA11 | FA12 | FA13 | FA14 | FA15 |
| Declared | 3,081 | 2,981 | 3,134 | 3,268 | 3,180 | 3,233 | 3,216 | 3,436 |
| Undeclared | 1,227 | 1,222 | 1,235 | 1,151 | 1,269 | 1,140 | 1,068 | 1,227 |
| Arts, Humanities, and Design Interest | 48 | 58 | 41 | 34 | 32 | 35 | 33 | 36 |
| Business Interest | 236 | 188 | 222 | 200 | 216 | 209 | 226 | 262 |
| Engineering Interest | 138 | 136 | 144 | 163 | 194 | 181 | 166 | 209 |
| Exploring | 726 | 724 | 708 | 655 | 694 | 616 | 553 | 649 |
| Life Science Interest | 79 | 116 | 120 | 99 | 133 | 99 | 90 | 71 |
| Overall FTFT Cohort | 4,308 | 4,203 | 4,369 | 4,419 | 4,449 | 4,373 | 4,284 | 4,663 |

Undeclared students are about 27% of any entering freshman cohort, which is about 1200 students each fall semester. Undeclared Exploring majors, those that have not stated an academic interest, are the largest major within the undeclared (about 56% of the group) and represent about 660 new students each fall semester. Business and Engineering Interest are also large groups (18% and 11% of the undeclared group which is 220 and 170 new students each fall semester; respectively) mostly because they apply for the respective college but do not meet the admissions requirements so they are filtered to these undeclared majors by default. The overall representation of undeclared students among FTFT cohorts has been relatively consistent, but within undeclared the proportion of Engineering Interest has been consistently increasing and the proportion of Exploring has been decreasing.



Demographics

Prior research at CSU shows a strong positive association between persistence and various demographic attributes; therefore, when comparing declared student outcomes to undeclared student outcomes it is important to consider each groups' academic and demographic profiles. This information is displayed in Table 2.

Table 2.

FA13-FA15 First-Time, Full-time Cohorts' Academic and Demographic Attributes by Declared Status

| | Mean Index | FG (%) | Pell (%) | Minority (%) | Male (%) | Non-Resident (%) |
|---|---------------|-----------|-------------|-----------------|-------------|---------------------|
| Declared (9,885) | 117.4 | 23.1% | 20.1% | 20.0% | 43.2% | 29.5% |
| Undeclared (3,435) | 108.3 | 28.4% | 22.5% | 22.6% | 53.0% | 23.6% |
| Arts, Humanities, and Design Interest (104) | 101.0 | 36.5% | 23.1% | 26.9% | 41.3% | 17.3% |
| Business Interest (697) | 102.0 | 30.7% | 21.4% | 23.8% | 68.0% | 21.4% |
| Engineering Interest (556) | 105.9 | 31.3% | 23.4% | 25.4% | 87.8% | 32.9% |
| Exploring (1,818) | 111.0 | 25.9% | 22.6% | 21.0% | 40.4% | 22.1% |
| Life Science Interest (260) | 113.2 | 30.4% | 23.1% | 23.8% | 30.4% | 22.3% |
| Overall | 115.1 | 24.5% | 20.7% | 20.7% | 45.7% | 28.0% |

Undeclared students in the three most recent cohorts have an average index score that is about 9 index points lower than declared students. First-generation (FG), minority and Pell recipients are over represented in the undeclared group compared to declared students by 5.3, 2.4 and 2.6 percentage points (PP); respectively. Based on these demographics we would expect to see lower persistence and graduation rates among undeclared students because lower average index scores and greater representation of FG students each have a substantively large negative association with student success. There is also a 9 PP difference (53% compared to 43.2%) in the representation of male students but non-residents are under represented by about 5 PP (23.6% compared to 29.5%) among undeclared students compared to declared students.



Student Success Metrics

This section focuses on understanding how undeclared students progress in regards to the student success metrics included in this study.

Timing of Major Declaration

The first student success metric seeks to understand the timing of major declaration. Table 2, below, displays the proportion of undeclared students (by major and overall) that are declared at 2nd, 3rd and 4th fall. Please note that these proportions only include students that persist to these time points.

Table 3.

| Proportion of Students that Declare Each Fall Semester ¹ | | | |
|---|----------|----------|----------|
| | 2nd Fall | 3rd Fall | 4th Fall |
| Arts, Humanities, and Design Interest | 45.8% | 90.7% | 97.6% |
| Declare in CLA | 32.5% | 68.0% | 73.9% |
| Declare in any other college | 13.3% | 22.7% | 24.2% |
| Business Interest | 43.6% | 87.5% | 97.3% |
| Declare in BU | 17.5% | 33.0% | 36.1% |
| Declare in any other college | 26.1% | 54.5% | 62.0% |
| Engineering Interest | 39.9% | 84.6% | 98.7% |
| Declare in EG | 12.5% | 21.8% | 21.4% |
| Declare in any other college | 27.4% | 62.7% | 77.3% |
| Exploring | 55.1% | 93.7% | 97.8% |
| Life Science Interest | 57.3% | 93.2% | 97.6% |
| Declare in CNS | 18.1% | 26.7% | 24.1% |
| Declare in any other College | 39.2% | 66.5% | 74.2% |
| Undeclared Overall | 50.8% | 91.3% | 97.8% |

¹Note that these rates are only among the students who persist to the specified term

Among the overall undeclared group about half (51%) of the students who persist to their second fall have a declared major status and nearly all of the undeclared students who persist to their third and fourth fall semesters have a declared major. Only 33% of undeclared students who persist to second fall, but do not persist to third fall, are declared in their second fall (compared to 51% overall). Similarly, only 75% of undeclared students that persist to their third fall but do not persist to their fourth fall are declared in their third fall (compared to 91% overall). These lower rates of declaration among undeclared students who do not persist to the following semester suggest that second year and third year students who do not declare are at higher risk for attrition.

Among the specific undeclared majors, Exploring and Life Science Interest students have the highest rates of declaration and Engineering and Business have the lowest rates of declaration at the second and third fall. Additionally, table 2 displays the college that students declare within their academic interest area. For instance, 40% of undeclared seeking Engineering declared by their second fall, but only 12% actually declared in EG and only 21% end up declaring in the College of Engineering by their fourth summer. These rates are slightly higher for Undeclared seeking Business, about 36% of these undeclared students declare in the College of Business by their fourth fall.



Persistence and Graduation

The remaining outcomes included in this study focus on persistence and graduation. Table 4 displays the 2nd through 4th fall persistence as well as the 6 year graduation rates and average time to graduation by declared status and among the various undeclared majors. Please note that data displayed in table 4 are not adjusted for any of the academic or demographic differences that are previously discussed.

Table 4.

| | Success Metrics by Declared Status | | | | |
|---------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|--------------------------------|--------------------------------------|
| | 2nd Fall Persistence ¹ | 3rd Fall Persistence ² | 4th Fall Persistence ³ | 6 Year Graduation ⁴ | Semesters to Graduation ⁵ |
| Declared | 87.0% | 79.2% | 75.7% | 68.7% | 12.02 |
| Undeclared | 84.0% | 75.9% | 71.9% | 62.9% | 12.42 |
| Arts, Humanities, and Design Interest | 74.8% | 66.7% | 69.0% | 61.2% | 12.26 |
| Business Interest | 84.9% | 79.3% | 76.6% | 62.0% | 12.37 |
| Engineering Interest | 82.9% | 68.4% | 65.2% | 48.6% | 13.57 |
| Exploring | 84.2% | 77.1% | 72.6% | 66.3% | 12.29 |
| Life Science Interest | 86.1% | 77.9% | 70.0% | 61.1% | 12.34 |
| Overall | 86.2% | 78.3% | 74.7% | 67.0% | 12.13 |

¹Includes the FA15, FA14, and FA13 FTFT cohorts

²Includes the FA14, FA13, and FA12 FTFT cohorts

³Includes the FA13, FA12, and FA11 FTFT cohorts

⁴Includes the FA10, FA09, and FA08 FTFT cohorts

⁵Includes students from the FA10, FA09, and FA08 FTFT cohorts that graduated; this is the average number of semesters between graduation term and cohort term, including summer terms.

Within the undeclared majors Arts, Humanities and Design interest as well as Engineering Interest have lower persistence and graduation rates. Among the relatively few (48.6%) Engineering Interest students that graduate, time to graduation is over a semester longer than undeclared students overall (13.57 compared to 12.42). Additionally only 11.2% of Engineering Interest students graduate with a degree from the College of Engineering. Among the 418 undeclared students with an Engineering Interest major (from FA08, FA09, and FA10 cohorts), only 47 of these students actually earn a degree from the College of Engineering. This works out to about 16 students per cohort. The graduation rate among Business Interest students is higher (62%), but only 22.8% of these students earn a degree from the college of Business. There are 646 Business Interest students in the FA08, FA09, and FA10 cohorts and 147 of them earn a degree from the College of Business, which is about 50 students from each cohort. Very few undeclared students who apply for these selective majors actually graduate with a degree from these colleges.

Undeclared students have statistically significant lower persistence (at each time point) and graduation rates compared to declared students. The PP difference by declared status increases as the time increases. For instance, at second fall there is a 3.1 PP difference in 2nd fall persistence (87% compared to 84%) by declared status but by the 4th fall the difference increases to 3.9 PP (75.7% compared to 71.9%) and by the 6th summer there is a 5.8 PP difference in graduation rates (68.7% compared to 62.9%). In terms of time to graduation, overall graduates complete their degrees in 12.13 semesters (including summer), but declared students graduate in 12.02 semesters and undeclared students graduate in 12.42 semesters. This .4 of a semester difference by undeclared status is statistically significant.



Prior to concluding that undeclared students persist and graduate at considerably lower rates than their declared peers, the dramatic differences in index score and demographics by declared status needs to be accounted for.

Methodology

As shown in the demographic section, undeclared students are demographically distinct from declared students at CSU and student success comparisons need to account for these differences. A logistic regression is used to create a demographically similar comparison group of declared students. This model predicts the likelihood of being undeclared based on FG status, minority status, Pell recipient status, residency, gender, ethnicity, and index. After obtaining the probability of being undeclared, declared students are reduced to just those that that can be matched to undeclared students with similar probabilities using a standard propensity matching procedure. The outcomes for this matched declared group are reasonable reference levels for undeclared student success.

Matched Group Persistence and Graduation Comparisons

Table 5 displays the persistence and graduation rates as well as the semesters to graduation for the undeclared students (same as in table 4) and the matched declared students. The declared students included in this matched analysis are statistically similar to undeclared; therefore, this group represents a reference for undeclared student success that accounts for the differences in academic/demographic profiles by declared status. After matching, the new comparison group of declared students have an average index of 108.3 (identical to the undeclared index presented in table 2) and larger representation of minority students (23.5%), first generation students (28.6%) and Pell recipients (23.5%), which is similar to the demographic profile of undeclared students displayed in table 4.

Table 5.

| Matched ¹ Persistence and Graduation Rates by Declared Status | | | | | |
|--|----------------------|----------------------|----------------------|-------------------|-------------------------|
| | 2nd Fall Persistence | 3rd Fall Persistence | 4th Fall Persistence | 6 Year Graduation | Semesters to Graduation |
| Declared | 84.0% | 74.8% | 71.4% | 62.0% | 12.30 |
| Undeclared | 84.0% | 75.9% | 71.9% | 62.9% | 12.42 |

¹Matched indicates that the declared group is reduced to only students who are statistically similar to undeclared students

After the declared students are matched to the undeclared students, the graduation and persistence rates are very similar across declared status (none of the rates are statistically different). For instance, undeclared students graduate at a rate of 62.9% which is very similar (but marginally higher) than the matched declared students (62%). Regardless of the matching, there is still a statistically significant difference in time to graduation by declared status. However, the magnitude of the difference, .12 of a semester, is smaller after the matching than it was prior to matching (the .4 of semester reported in table 4). These results indicate that undeclared students have levels of success that are approximately what would be expected based on CSU's historical associations between academic preparation / demographics and success.



Conclusions

Undeclared students make up a large proportion of each FTFT cohort and these students tend to have a lower index score and are more likely to have demographic attributes associated with higher rates of attrition. When looking at persistence and graduation rates without controlling for academic/demographic characteristics, undeclared students display statistically significant, substantively lower rates of success. However, once declared students are reduced to only those who are statistically similar to undeclared students then the success rates by declared status are very similar. This finding corroborates other research completed by IRP&E that shows undeclared students success approaches or meets expectations based on demographic/academic profiles ([link](#)).

Undeclared students do take longer to complete their degree compared to their declared counterparts even after controlling for demographic and academics attributes. Prior work shows that each major change tends to extend the time to graduation by about a half a semester ([link](#)). Undeclared students must make at least one change of major; therefore, the magnitude of the difference in time to degree by declared status is small relative to this prior finding.

About half of undeclared students who persist to their second fall semester declare by the fall semester and nearly all declare by their third semester. The association between not declaring a major and not persisting to the following semester could be an early indicator of attrition that could help inform advising scheduling or policy.

Undeclared students seeking Engineering and Business have very low graduation rates in these prospective colleges (11.2% and 22.8%; respectively). Engineering Interest also has the lowest graduation rate (48%) within the university among the undeclared majors. Only 16 of the 140 Engineering Interest students in each cohort will graduate with a degree from the college of Engineering.

Undeclared students are a significant proportion (about 27%) of each entering cohort and as cohort size increases, the demand on undeclared student services will increase. Current data indicates that this group of students are succeeding at levels that are similar to expectations for similar declared students. However, it is important to remember that continued dedication to undeclared student services is needed to maintain the success of this group, and that decreases in success rates among undeclared students would have a large impact on overall FTFT persistence and graduation rates.