

Completing College

2019 National Report



KEY FINDINGS & IMPLICATIONS

1. [The national college completion rate continues to rise, albeit more slowly in recent years.](#)
2. [First-time entering college students are becoming increasingly traditional in demographics and education pathways.](#)
3. [An additional five percent of the 2011 entering student cohort completed during their seventh and eighth years.](#)
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ERRATA (Feb 2022)

The six-year national and state outcomes for the 2013 entering cohort shown in this report have been revised. [View the updated results.](#)

ABOUT THIS REPORT AND WHAT'S NEW

As the eighth in the Completing College report series, the 2019 edition presents both the national six-year completion outcomes for the 2013 entering student cohort and the national eight-year results for the 2011 entering student cohort.

The report looks at the various education pathways first-time students traversed toward a degree or certificate completion, as well as the completion outcomes for the different groups of students who followed each pathway from the fall of 2011 or the fall of 2013 through spring (June) 2019, that is, within eight years or six years of enrolling.

The national completion rate counts all students who enter postsecondary education for the first time each year, enrolling full-time or part-time at two-year or four-year institutions, and completing at any U.S. degree-granting institution. It includes those who complete after transfer, not just completions at the starting institution. Thus, the results more fully capture today's students' diverse pathways to success, that increasingly involve mobility across institutions and across state lines, re-entry after stop-out, and changes in enrollment intensities.

For an historical national view, this edition provides eight cohort-year trends for the six-year completion rate, as well as six cohort-year trends for the eight-year completion rate. New analyses of major fields at graduation are added for the first time in this edition.

Following this national report, state-by-state completion rates for the same group of students (the 2013 cohort) will become available in the spring of 2020. More about the previous cohorts are available at the NSC Research Center [website](#).

1. The national college completion rate continues to rise, albeit more slowly in recent years.

Over 2.3 million people entered postsecondary education for the first time in the fall of 2013, an increase of 1.8 percent over the previous student cohort. Six years later, 59.7 percent of them (1.4 million students) have completed anywhere in the U.S. This six-year completion rate is 1.4 percentage points higher than the previous cohort's rate, marking a new eight-year high since the start of this report series with the fall 2006 cohort.

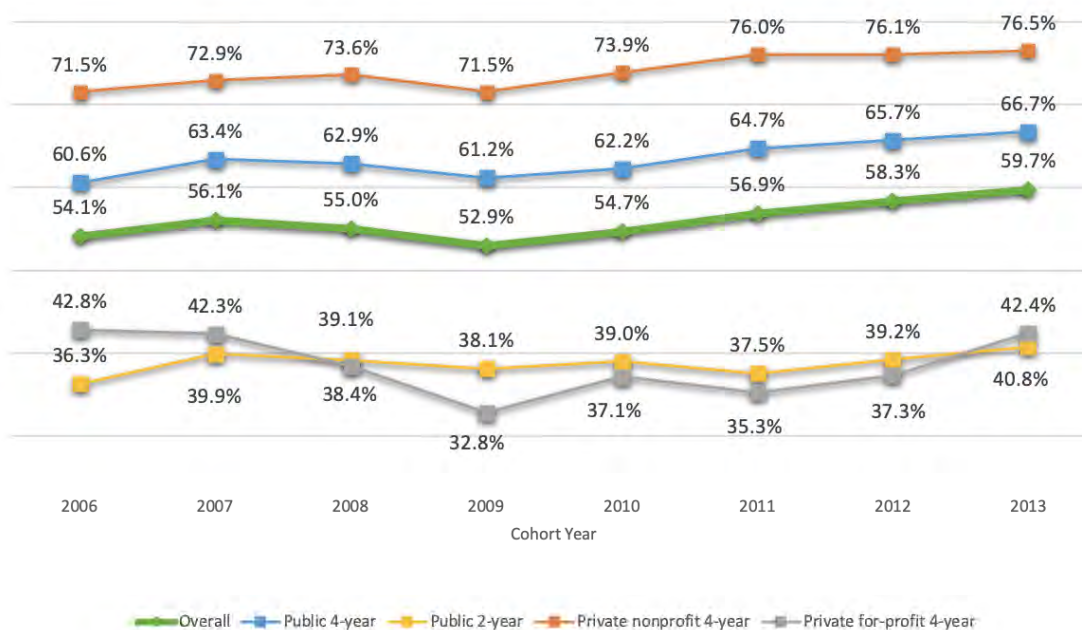
Figure 1 shows the trajectory of the national six-year completion rate for the last eight cohort years.

The completion rate has been on a steady rise since the 2009 cohort year, and the steepest increase occurred between the 2009-2011 cohort years, which is reflective of the post-recession effect on the size and composition of the first-time entering student population. While the total completion rate continued to rise from cohort to cohort, the growth has slowed slightly in last two years, from

2.2 percentage points (2010 to 2011) to 1.5 percentage points (2011 to 2012) and 1.4 percentage points (2012 to 2013). The overall completion rate has increased by a total of nearly seven percentage points in the last four years, from a low of 52.9 percent for the 2009 entering cohort.

Completion rates increased for the 2013 cohort across all types of starting institutions. Both public four-year and public two-year starters reached their highest levels in eight years (66.7% and 40.8%, respectively). These represent 1.0 and 1.5 percentage point gains, respectively, over the 2012 cohort. Private for-profit four-year starters showed the largest gain of all groups, jumping 5.1 percentage points above the rate for the 2012 cohort. The combined effect of a smaller cohort size (24% smaller than the previous year) and a 5.7 percentage point increase in the rate of completions at the starting institution are largely responsible for the sector's gain since last year.

Figure 1. Six-Year Completion Rates by Starting Institution Type: 2006-2013 Entering Cohorts

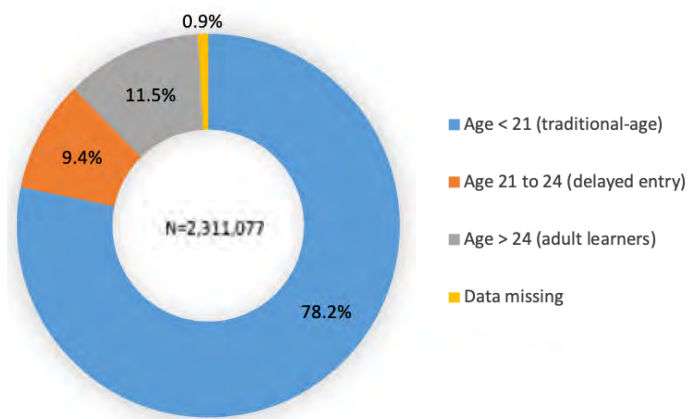


Note: Two methodological changes are noteworthy. Beginning in 2011, current dual enrollment students (students taking college courses while in high school) were excluded from our definition of first-time entering student cohort, impacting largely two-year institutions. Also, all-years look-back was applied in defining prior enrollees. After these changes, year-over-year comparisons can still be reliably made. But interpret the trends with caution for two-year starters because removing current dual enrollment students caused the completion rate to decline. See Methodological Notes on page 9 for details.

2. First-time entering college students are becoming increasingly traditional in demographics and education pathways.

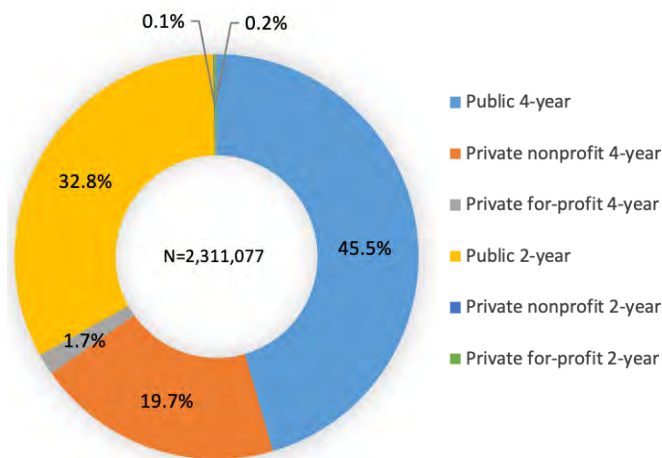
Consistent with the previous year's report, the 2013 entering cohort is predominantly traditional-age students (20 or younger at entry). The share of traditional-age students in the cohort increased 0.4 percentage points to 78.2 percent, while the proportion of adult learners (age 25 and over) declined almost one percentage point to 11.5 percent (**Figure 2**).

Figure 2. 2013 Entering Cohort by Student Age at First Entry



In terms of students' enrollment patterns, initial enrollments at a four-year institution increased slightly while initial enrollments in two-year institutions decreased. A total of 45.5 percent of the cohort started in public four-year institutions, an increase of 0.7 percentage points. The public two-year starters decreased 0.4 percentage points to 32.8 percent of the cohort (**Figure 3**).

Figure 3. 2013 Entering Cohort By Starting Institution Type



Also, almost half (48%) of the 2013 cohort were enrolled exclusively full time, up one percentage point over the previous cohort. "Exclusively" means during all regular terms in which the student was enrolled and does not account for summer terms or stop-outs. Another 46 percent of the cohort had a mix of full-time and part-time enrollments.

The declining shares of older students and mixed or part-time enrollments account for much of the increase in completion rates. Traditional age students are roughly 50 percent more likely to complete within six years than older students (64% vs. 45%). Exclusively full-time students are almost twice as likely as mixed enrollees to complete (80.9% vs. 42.8%), and nearly four times as likely as exclusively part-time students (22.3%). For public four-year starters who were enrolled exclusively full time, 83.8 percent completed within six years (see [Appendix](#)).

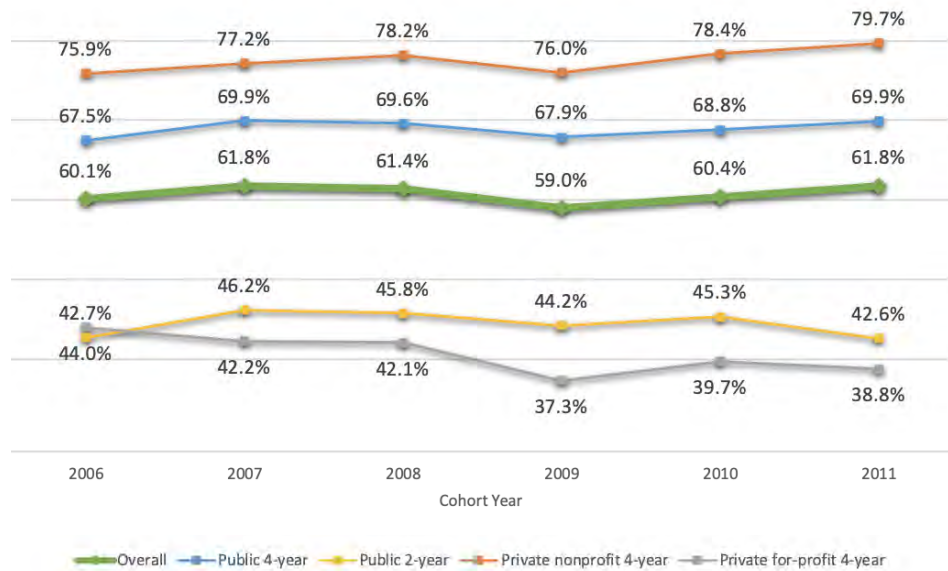
Transfer behaviors also declined, as completions at the starting institution increased for each type of starting institution. In total, 48.5 percent of the 2013 cohort completed a credential at the starting institution, representing a 1.6 percentage point increase from the 2012 cohort. Similar growth was observed for both two-year starters (1.7 percentage points increase to 29.6 percent) and four-year starters (1.4 percentage points increase to 57.9 percent). It should be noted, however, that students who transferred and did not complete within six years are included in the *still enrolled* and *not enrolled (stopped out)* categories, without differentiation from single-institution enrollees who did not complete.

Although these changes are small, they come together to signify a shifting postsecondary landscape. Comparing to the 2012 cohort, students in the 2013 cohort were younger and more likely to start at a four-year institution. They were more likely to have studied full time and, among those who completed, more likely to have stayed at their starting institution.

3. An additional five percent of the 2011 entering student cohort completed during their seventh and eighth years.

The eight-year completion rate for the 2011 cohort reached 61.8 percent, five percentage points greater than its six-year completion rate (56.9%). **Figure 4** shows steady gains in the overall eight-year completion rate since 2009, ending with an increase of 1.3 percentage points to 61.8 percent in 2011. The latest number is a new six-year high since we started tracking the eight-year outcomes.

Figure 4. Eight-Year Completion Rates by Starting Institution Type: 2006-2011 Entering Cohorts



Note: Two methodological changes are noteworthy. Beginning in 2011, current dual enrollment students (students taking college courses while in high school) were excluded from our definition of first-time entering student cohort, impacting largely two-year institutions. Also, all-years look-back was applied in defining prior enrollments. After these changes, year-over-year comparisons can still be reliably made. But interpret the trends with caution for two-year starters because removing current dual enrollment students caused the completion rate to decline. See Methodological Notes on page 9 for details.

The eight-year completion rates increased for students who started at public four-year and private non-profit four-year institutions (by 1.0 and 1.3 percentage points), but declined among students who started in public two-year and private for-profit four-year institutions (2.7 and 0.9 percentage points, respectively).

4. More progress made among older students generally, and Hispanics in particular.

The increase in completion rates from 2012 to 2013 is uneven across different student groups. Completion gains among adult learners surpassed those of traditional-age students (Figure 5). Across all starting institution types, the completion rate for delayed-entry students (age 21-24) reached 45.1 percent, representing a 2.6 percentage point gain from the previous year. Similarly, for adult learners (age 25 and over), the completion rate reached 45.8 percent, up 2.3 percentage points from the previous cohort. In contrast, the traditional-age student completion rate improved just 1.2 percent points. The age-related growth patterns are similar in the previous period from 2011 to 2012.

Evidence of greater gains among older students is even more noticeable when accounting for race and ethnicity and gender. In fact, where completion rates generally declined or stayed flat for delayed-entry and older Asian

and white students, older Hispanic student completion rates generally increased. The increases are particularly notable for Hispanic women. Delayed-entry and older Hispanic women student completion rates went from 36.1 and 34.9 percent to 39.6 and 37.5 percent, respectively, representing the highest completion rate gains (3.5 and 2.6 percentage points), of any racial/ethnic groups by age and gender.

In terms of the overall completion rate for students of all ages, African American and Hispanic students made some gains compared to the prior year cohort, which exceeded the advances of white and Asian students observed over the same period. Despite these gains, the overall racial and ethnic completion disparities remained substantial. For example, African Americans were 40 percent less likely to have completed college in six years than Asians.

It is important to note, however, that among African American male students who started at public four-year institutions, the completion rate surpassed the stop-out rate (Figure 6). The African American male student completion rate moved up to 41.7 percent from 40.7 percent, while the stop-out rate fell to 38.3 percent from 42.7 percent, the sharpest drop of all groups, followed by Hispanic men (decreased by 4.1 percentage points to 27.7%).

Figure 5. Six-Year Completion Rates by Student Age at First Entry: 2007-2013 Entering Cohorts

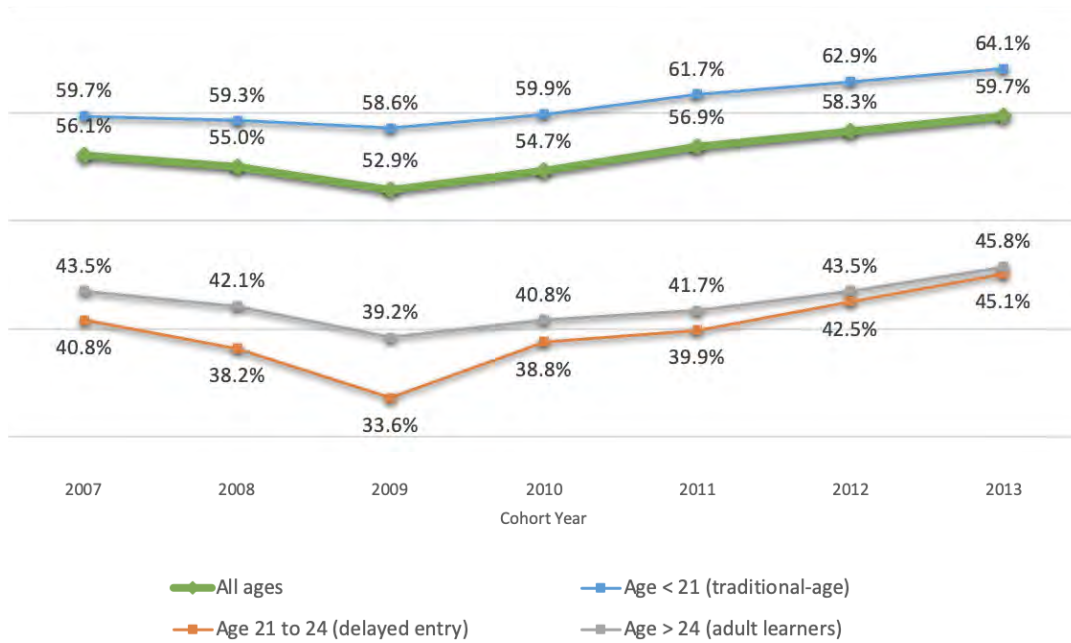
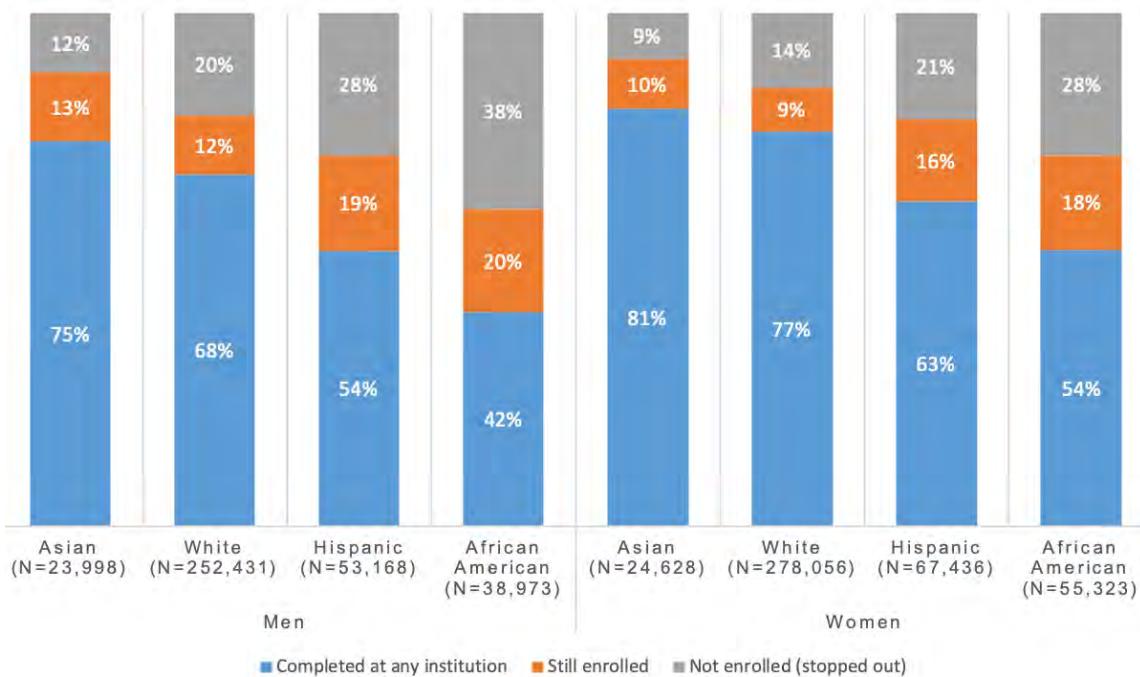


Figure 6. Percent Completed, Stopped-Out, and Still Enrolled Six Years After Enrolling by Race/Ethnicity and Gender: 2013 Entering Cohort Public 4-Year Starters



5. Racial/ethnic and gender disparities exist in major choice at completion.

In a new analysis on the graduates' major fields, we found that of nearly 50 college major fields broadly defined by the US Department of Education's Classification of Instructional Programs, the ten most common major fields account for 69 percent of the students who started postsecondary education in the fall of 2013 and graduated within six years of enrolling. Particularly for students earning associate degrees and certificates, the choice of majors often comes down to two to three fields.

One out of every two certificate earners (51%) majored in the following three fields: Health Professions and Related Clinical Sciences (30%), Business, Management, Marketing, and Related Support (11%), and Liberal Arts and Sciences, General Studies and Humanities (11%).

For AA degree earners, nearly one in two (47%) has the same major field, Liberal Arts and Sciences, General Studies and Humanities, followed by Business, Management, Marketing, and Related Support (10%) and Health Professions and Related Clinical Sciences (10%).

Seven fields account for 61 percent of baccalaureates: Business, Management, Marketing, and Related Support (18%); Social Sciences, Engineering, Biological and Biomedical Sciences, and Health Professions and Related Clinical Sciences (8% each); Psychology (6%); and Communication, Journalism and Related Programs (6%).

Graduates who majored in Business, Management, Marketing, and Related Support are likely to hold a bachelor's degree (76%), whereas the Liberal Arts and Sciences, General Studies and Humanities majors are predominantly associate degree earners (85%). About half of Health Professions and Related Clinical Sciences graduates are bachelor's degree recipients (54%).

Figure 7 displays the top five common majors by gender and starting institution type. For public four-year starters, business is the top choice for both men and women, but stark differences emerge among the rest of the top five. The second most common major for men is engineering (15%), whereas for women, health was the second common choice and less than 4 percent graduated with a credential in engineering. Similarly, Computer and Information Sciences and Support Services is the fourth

Figure 7. Top Five Common Majors at Completion by Gender and Starting Institution Type: 2013 Entering Cohort

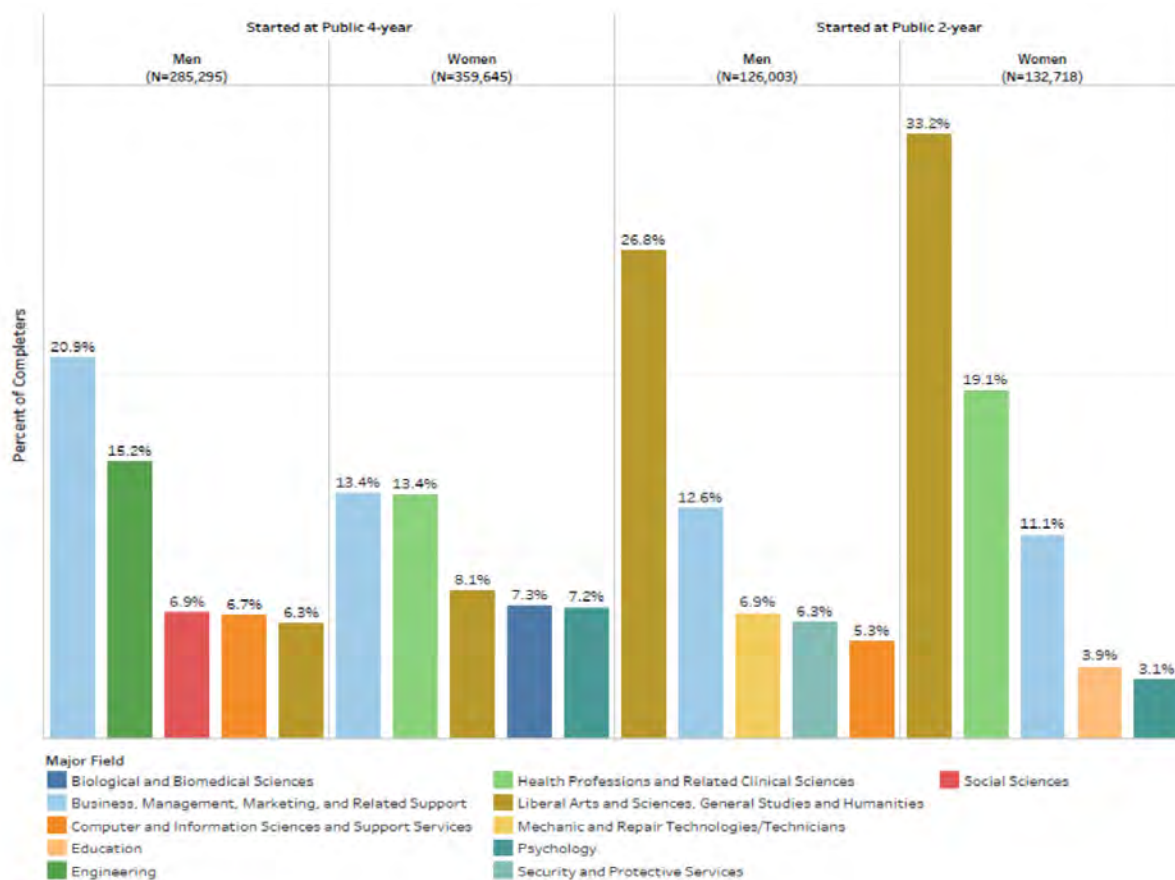
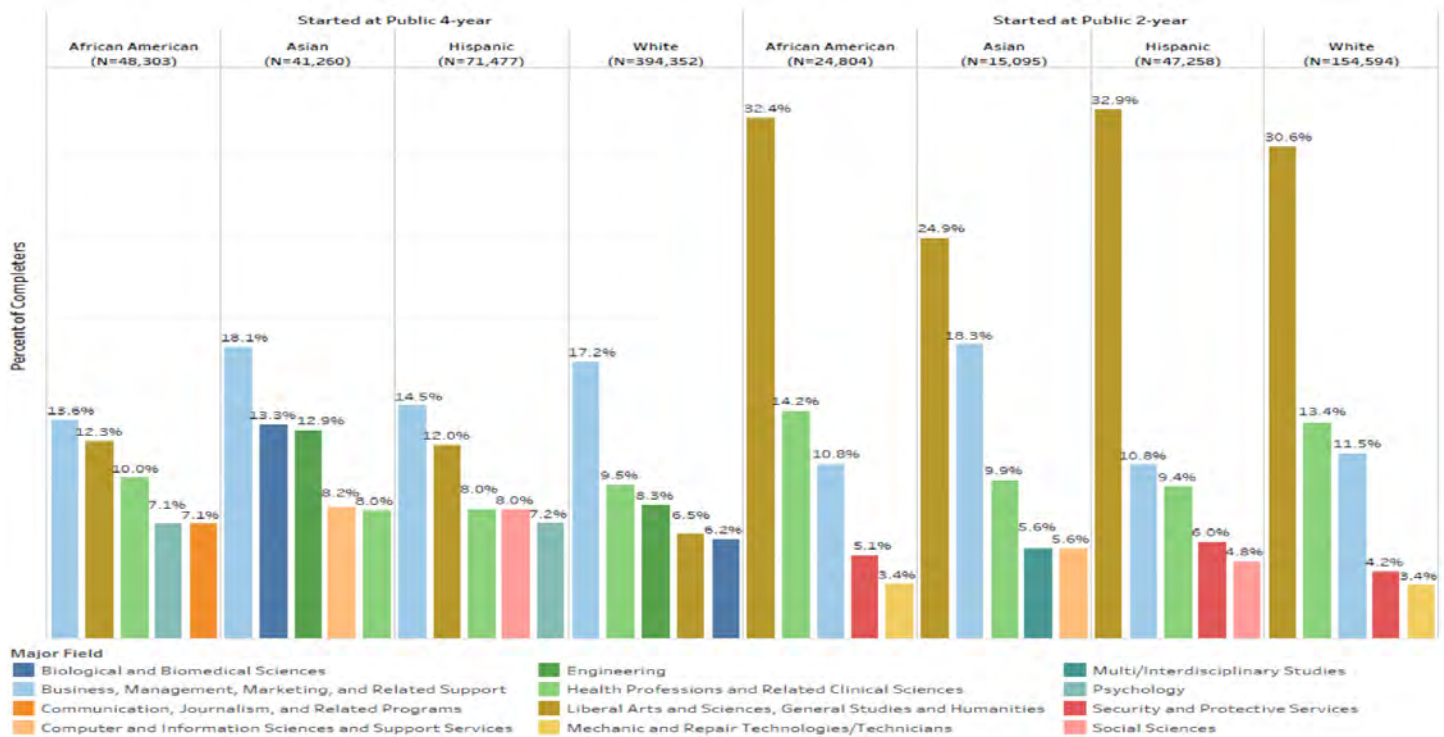


Figure 8. Top Five Common Majors at Completion by Race/Ethnicity and Starting Institution Type: 2013 Entering Cohort



most popular field for men (6.7%), but it is only ranked as the 18th for women (1.4%).

Among public two-year starters, following the common top three majors, Education (3.9%) and Psychology (3.1%) are the fourth and fifth most popular majors for women, whereas Security and Protective Services (6.3%) and Computer and Information Sciences and Support Services (5.3%) are the fourth and fifth most popular majors for men.

Across racial/ethnic lines (**Figure 8**), engineering is the third most popular major for both Asian and white students who started at public four-year institutions, but it is ranked 12th for African Americans (3%) and 7th for Hispanics (6%). The top five common major choices for Asians are all science and business-related. For public two-year starters, Liberal Arts and Sciences, General Studies and Humanities is the most popular major for every race and ethnicity, followed by health and business majors (which trade second and third place among the categories). However, different majors emerge for each racial/ethnic group in the fourth and fifth most popular choices: vocationally oriented technical fields such as Security and Protective Services, or Mechanic and Repair

Technologies/Technicians appear for African American, Hispanic, and white students, while Computer and Information Sciences and Support Services is the fourth popular major for Asians (5.6%).

6. Implications

To summarize the main findings, after steady increases over the last four years, the overall six-year completion rate has reached 60 percent for the 2013 entering cohort, representing a new eight-year high since the start of the report series. Each of the three largest institutional sectors, public four-year, public two-year and private nonprofit four-year, have also reached their highest levels (67%, 41%, and 77%, respectively). Although the completion rate has continued to rise, each cohort's gain has diminished, from 2.2 percentage points (2010 to 2011) to 1.5 percentage points (2011 to 2012) to 1.4 percentage points (2012 to 2013).

There is uneven growth across different groups of students. Between the 2012 and 2013 cohorts, delayed-entry and adult students (age 21 and over) gained more ground in completion rates than traditional-age students. This was particularly notable among Hispanic students, both men, and women. We also found steady gains

among African American students. The completion rates for traditional-age students have risen steadily, but at a slightly slowing pace in recent years. The same is true for Asian students and white students, students enrolling exclusively full time, and students who started at private nonprofit four-year institutions.

Although continuous gains made by racial/ethnic minorities are promising, the existing completion gaps remain substantial and show little sign of significant shrinkage. In addition, there are large gender divides in major choice at completion at both two-year and four-year institutions. Yet, the results also show that more and more students who earn their first undergraduate degree or certificate are doing so from the institution at which they first enrolled. This suggests that institutional efforts to improve retention, progression and success from the start of each student's college career may be increasingly effective in the aggregate, as fewer students transfer to different programs mid-stream. With better tracking and disaggregation of data on major choice, institutions may also begin to promote more interest and retention in high-demand career fields for historically underserved students.

METHODOLOGICAL NOTES

National Coverage of the Data

This report examines six-year and eight-year college student success outcomes, focusing primarily on degree and certificate completion of a cohort of first-time-in-college, degree-seeking students who started their postsecondary education at U.S. colleges and universities in the fall of 2013 and fall of 2011 through June 30, 2019. Outcomes examined include completion (i.e., receipt of any postsecondary credential by the end of the study period), major at completion, persistence (i.e., having enrollment records at any postsecondary institution during the last year of the study period), and stop-out without completion (i.e., having no enrollment records at any postsecondary institution during the last year of the study period). The report mainly focuses on students' first-ever completions, with further distinctions drawn between completions awarded at the institution where a student first enrolled (his or her starting institution) and those awarded at an institution other than their starting institutions. For students who started at a two-year public institution, this report also presents an overview of their completions at a four-year institution, either as a first completion (i.e., those who completed at a four-year institution without having first earned a credential at a two-year institution¹) or as a subsequent degree after a first completion awarded in the two-year sector. In addition to results on degree and certificate completion rates by enrollment intensity, age group, gender, race and ethnicity, and starting institution type, the report includes results on completion across state lines and for students who started at multistate institutions.

¹ Throughout this report, "two-year institution" is used broadly to designate institutions offering both associate degrees and less-than two-year degrees and certificates.

Data Coverage

The National Student Clearinghouse currently collects data from more than 3,600 postsecondary institutions, which represent 97 percent of the nation's postsecondary enrollments in degree-granting institutions, as of 2018. The enrollment data used in this report provide an unduplicated headcount for the fall 2013 first-time college entering student cohort. Clearinghouse data track enrollments nationally and are not limited by institutional and state boundaries. Moreover, because this database is comprised of student-level data, researchers can use it

to link concurrent as well as consecutive enrollments of individual students at multiple institutions.

Cohort Identification, Data Cut, and Definitions

This report examines completion, over a span of six years, for the cohort of first-time-in-college degree-seeking students who started their postsecondary studies at U.S. colleges and universities in the fall of 2013 for six-year outcomes as well as in the fall of 2011 for eight-year outcomes (through June 30th, 2019). To limit the cohort to first-time undergraduate students only, the study uses data from the Clearinghouse's enrollment reporting and DegreeVerify services to confirm that students included in the study fulfilled the following conditions:

1. Enrolled in a Title IV degree-granting institution in fall 2013, excluding territories outside the U.S. (e.g., Guam, Puerto Rico, or the U.S. Virgin Islands).
2. Did not have a previous enrollment record, as shown in the Clearinghouse data, prior to the first day of enrollment in the fall of 2013, unless the previous enrollment record was before the student turned 18 years old (qualified as former dual enrollment students);
3. Did not receive any degree or certificate from a postsecondary institution prior to the first day of enrollment in fall 2013, according to Clearinghouse data unless the award date was before the student turned 18 years old (dual enrollment);
4. Had at least one legitimate enrollment status throughout the study period; that is, enrolled for at least one term with full-time, part-time (i.e., halftime or less than half-time), or withdrawal status³;
5. Showed intent to seek a degree or certificate. That is:
 - For students who started at four-year institutions, enrolled at least one term with an intensity of half-time or higher.
 - For students who started at two-year institutions, either:
 - Enrolled full time for at least one term before August 10, 2014, or
 - Enrolled three-quarter time for at least one term or half time for any two terms before December 31, 2014

² We excluded 299,963 students who began at two-year institutions as non-degree-seeking students as a result.

³ The Clearinghouse receives enrollment status data as full-time, half-time, less-than-half-time, withdrawal, or other statuses from its participating institutions.

Race and Ethnicity

The race and ethnicity categories include Asian, African American (of non-Hispanic origin), Hispanic, White, Other or two or more races. The Other category includes American Indian/Alaskan Native, and Native Hawaiian or other Pacific Islander. Seventeen percent of the data is unknown or missing race/ethnicity.

Former Dual Enrollment Students

Beginning in the fall 2011 entering cohort, our definition of first-time student cohort excludes current dual enrollment students, impacting largely two-year institutions. Interpret the trends with caution for two-year starters because removing current dual enrollment students caused the completion rate to decline. The cohort used in this study only includes former dual enrollment students: first-time college students who had previously taken dual enrollment courses. These are the students who enrolled in college courses prior to fall 2013 while still in high school. Students were identified as former dual enrollment students if their enrollment or degree record prior to fall 2013 was before the student turned 18 years old. Former dual enrollment students represent 18.51 percent of the fall 2013 cohort. As a proportion of the sample for each sector, former dual enrollment students represent 21.92 percent of the students who started in four-year public institutions, 15.49 percent of the students who started in two-year public institutions and 16.83 percent of those who started in four-year private nonprofit institutions. Only 6.97 percent of the students who started in four-year private for-profit institutions had prior dual enrollments.

Enrollment Intensity

In this report, enrollment intensity is classified as exclusively full-time, exclusively part-time, or mixed enrollment (including both full-time and part-time enrollments) throughout the study period. Each enrollment type is based on students' enrollments across all terms in which the student was enrolled. Hence, the

report does not exclude stop outs through the first completion or, for non-completers, through the entire study period. In establishing students' enrollment intensity in this way, enrollments during summer terms (defined as terms with both the start date and the end date falling between May 1 and August 31 in any given year) and short terms (defined as terms lasting less than 21 days) were excluded from consideration.

For terms in which a student showed concurrent enrollment records (i.e., records that overlapped by 30 days or more), the two highest-intensity enrollments were considered. For example, a student concurrently enrolled half-time at two institutions was categorized as enrolled full-time for that term. In doing this, we create one single enrollment record from a set of concurrent enrollment records. The enrollment status for the single enrollment record is defined as full-time if (1) for terms with concurrent enrollments, the two highest-status enrollment records included at least one full-time enrollment, or one three-quarter-time enrollment and one at least less than half-time enrollment; or (2) for terms with concurrent enrollments, the two highest-status enrollment records both reflected half-time enrollment. The enrollment status for the single enrollment record is defined as half-time if for terms with concurrent enrollments, the two highest-status enrollment records included some combination of half-time and less than half-time enrollments, but no full-time enrollment, and no more than one half-time enrollment.

Overall, for each term under consideration (i.e., all terms except summer terms and short terms – less than 21 days – up through the first completion, or, if no completion, throughout the entire study period), the “exclusively full-time enrollment” designation was assigned to students whose enrollment showed exclusively full-time enrollment for all terms. The “part-time enrollment” designation was assigned to students whose enrollment for each term under consideration showed exclusively three-quarter-time, half-time or less than half-time enrollment.

The category of mixed enrollment was applied to students who showed a combination of full-time and part-time enrollments across the terms under consideration. Finally, students who showed records indicating withdrawal (i.e., students who were enrolled, but withdrew before the term ended) but no full-time or part-time enrollments were randomly assigned to an enrollment intensity category.

Concurrent Completion

For this report, we examined completion by first-time students at either two-year or four-year institutions. We defined completion as having obtained a degree or certificate at any institution within the six-year or eight-year study period (i.e., by June 30, 2019). Clearinghouse data provide a unique headcount of U.S. college enrollments during each term, which allows for the tracking of individuals including those with concurrent completion. In preparing data for this report, a small number of individuals showed more than one completion awarded at multiple institutions on the same day. In these instances, a primary completion record was selected using decision rules specific to the sector of the student's starting institution.

The first set of decision rules was applied to students with concurrent completions who started at a two-year institution:

1. Concurrent Completions at Two Different Two-Year Institutions
 - Same institution over different institution: Completions at the starting institution were selected over completions at other institutions.
 - Random selection: If the first decision rule did not result in a single completion record being selected, then a completion record was selected at random.
2. Concurrent Completions at a Two-Year Institution and a Four-Year Institution
 - Two-year then four-year: The two-year degree completion was considered the first completion and the four-year degree completion was considered a subsequent completion.
3. Concurrent Completions at Two or More Four-Year Institutions
 - Random selection: If a student started at a two-year institution but later completed at two or more four-year institutions concurrently, then a completion record was selected at random.

The second set of decision rules was applied to students who started at four-year institutions and later showed concurrent completion records:

1. Same institution over different institution: Completions at the starting institution were selected over completions at other institutions.

2. Four-year over two-year: If the first decision rule did not result in the selection of a single completion record, then completions at four-year institutions were selected over those at two-year institutions.
3. Random selection: If neither of the first two decision rules resulted in the selection of a single completion record, then a completion record was selected at random.

Major at Completion

The U.S. Department of Education's Classification of Instructional Programs (CIP) was used to report students' field of study at completion. In the most recent academic year (2018-2019), CIP code was reported for 87 percent of the enrollments submitted to the Clearinghouse. In the current data, 0.2 percent of CIP codes were missing or unknown for four-year public completers; 0.1 percent missing for four-year private non-profit completers, and 0.5 percent missing for two-year public completers.

Imputation of Values for Gender

The Clearinghouse's coverage of student gender has increased dramatically for enrollments occurring in recent years. However, imputation of gender for the majority of enrollment records is still necessary in order to use the data for research studies using older cohorts. To meet this need, the Research Center developed an imputation process based on first names. Previously submitted name gender pairs throughout the Clearinghouse database are used to determine the probability of any first name being associated with either gender. To increase the accuracy of the imputation process, the Research Center also draws on name gender data from the Social Security Administration (SSA) and the U.S. Census Bureau.

Because the Clearinghouse collects transactional data, its data contain many more unique first names than other sources. The imputation used only those pairs in which the name occurred in at least two instances and was associated with a single-gender in at least 95 percent of the instances.

The SSA and Census data sets were used to ensure that name gender pairs were consistent across every data set in which they occurred and to enhance the imputation process by contributing name gender pairs that did not occur in the Clearinghouse data. The imputation process

that yielded additional gender codes produced a total gender coverage rate of 94 percent.

Imputation of Missing DegreeVerify Graduation Data

The Clearinghouse collects graduation information from its participating institutions via two data reporting services: Enrollment Reporting and DegreeVerify. Enrollment Reporting has higher data coverage rates but includes only basic completion information such as graduation indicator and the date of graduation. For the fall 2013 cohort, Enrollment Reporting covered 95 percent of all the students in Title IV degree-granting institutions listed in IPEDS (including 99 percent of the students in public institutions, 93 percent in private nonprofit institutions, and 63.5 percent in private for-profit institutions). DegreeVerify includes enhanced information on completions, including degree title, major, level, and CIP code, but covered only 94 percent of enrollments in 2013. Institutions may participate either in Enrollment Reporting alone or in both services. Completions data for this report included information drawn from either service.

An analysis conducted by the Clearinghouse on the 2013 cohort found that graduation data for the institutions that participated in DegreeVerify were relatively more complete for some of the years covered in this study than those for institutions that participated only in Enrollment Reporting, biasing completion rates slightly downwards for institutional sectors with lower participation rates in DegreeVerify.

To correct for this bias, the Research Center conducted a randomized imputation procedure for missing graduation data among students at non-DegreeVerify institutions who were no longer enrolled but for whom outcome data were missing (that is, for whom the institution had reported neither a graduation nor a withdrawal status in their Enrollment Reporting). This involved comparing the Enrollment Reporting and DegreeVerify records for institutions that participated in both services and estimating, for each institution type, the average percentage of students with missing outcomes in the enrollment data who had a reported graduation in the DegreeVerify data. We further specified these underreporting rates by taking into account student age and the academic year. We then used random assignment of graduation outcomes to students with missing data at the institutions that did not participate in DegreeVerify to match each institution's underreporting rate for each

student age group and for every year of the study to the average rate for similar students at institutions of the same type that did participate in DegreeVerify.

This imputation was performed only for students with missing outcomes data at institutions that did not participate in DegreeVerify. It is based on the typical underreporting of graduation outcomes from similar institutions that participate in both Enrollment Reporting and DegreeVerify. The table below shows, for each institution type, the percentage of the starting cohort for whom graduation data were imputed:

Institutional Sector	Percentage of the Starting Cohort With an Imputed Completion
Private For-Profit Two-Year	0.00%
Private Nonprofit Two-Year	0.53%
Public Two-Year	0.25%
Private For-Profit Four-Year	0.19%
Private Nonprofit Four-Year	0.33%
Public Four-Year	0.19%
Total	0.24%

Adjusting Noncoverage through Weighting by State and Institution Type

The institutions participating in the Clearinghouse Enrollment Reporting service (i.e., providing the data coverage) is not 100 percent of all institutions for any individual year. Therefore, to account for the possibilities of not capturing a student's enrollment outcome because of non-coverage of Clearinghouse data, the analysis weights were calculated using 2018 coverage rate of the sector, control, and state of the institution where a student was enrolled for the last enrollment record. Last enrollment record was defined based on the first completion (for completers) or the last enrollment record either before stop-out (for students who had no enrollment records during the last year of the study) or before the end of the study period (for persisters). For students who completed a degree at the starting institution or were still enrolled at the starting institution by the end of the study period, a weight = one was applied. For all other students, two weights were created and applied in this study:

For students who completed a degree or were still enrolled at a different institution by the end of the study period, a "transfer" weight was applied. The transfer weight used was an over-weight based on the coverage of the sector, control, and state of the institution in which the

student was enrolled for the last enrollment record, as calculated by the formula provided below:

$$= \frac{\text{Transfer Counts} + [\text{Missing Counts} * \text{Noncoverage Rate} * \frac{\text{Transfer}}{\text{Nonmissing Counts}}]}{\text{Transferred Counts}}$$

For students who stopped out by the end of the study period, a “missing” weight was applied. The missing weight used was an under-weight based on the coverage of the sector, control, and state of the institution in which the student was enrolled for the last enrollment record, as calculated by the formula provided below:

$$= \frac{\text{Transfer Counts} - [\text{Missing Counts} * \text{Noncoverage Rate} * \frac{\text{Transfer}}{\text{Nonmissing Counts}}]}{\text{Transferred Counts}}$$

Data Limitations

The data limitations in this report center mainly on the data coverage, the methods used for cohort identification, and the definition of key constructs (as outlined above). The representation of private for-profit institutions in the Clearinghouse data is lower than that of other institution types, with 64 percent coverage for four-year private for-profit institutions in fall 2013 compared to 94 percent and 99 percent respectively for four-year private nonprofit institutions and four-year public institutions. Despite the challenges presented by low participation in the early years covered in this report, current Clearinghouse data nevertheless offer near-census national coverage, representing 97 percent of U.S. postsecondary enrollments. In an effort to correct for coverage gaps in this study, data were weighted (as explained above).

Data limitations resulting from the cohort identification methods used in preparing this report should also be noted. Because the Clearinghouse data on designations for class year are incomplete, the researchers identified first-time undergraduate students via two indirect measures:

- No previous college enrollments recorded in the Clearinghouse data, and
- No previous degree awarded in the Clearinghouse’s historical DegreeVerify database.

Given these selection criteria, the sample for this report may include students who had more than 30 Advanced Placement (AP) or International Baccalaureate (IB) credits. It is also possible that a small number of graduate

students are included in the study cohort because of inconsistencies in the historical depth of DegreeVerify database records.

Finally, although Clearinghouse data contain some demographic information on students, historical coverage rates for the demographic data elements are uneven. Consequently, results on gender are based partially on imputed values, as described above and one in five students in the cohort had the race/ethnicity value unknown or missing. No imputation was attempted for missing race/ethnicity data.

Suggested Citation

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