

# First-Time Subbaccalaureate Students:

An Overview of Their Institutions, Programs, Completion, and Labor Market Outcomes After 3 Years

## STATS IN BRIEF

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### AUTHORS

Rachel Burns  
Alexander H. Bentz  
RTI International

### PROJECT OFFICER

Lisa Hudson  
National Center for Education Statistics

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We encourage readers who are interested in more complex questions and in-depth analysis to explore other National Center for Education Statistics (NCES) resources, including publications, online data tools, and public- and restricted-use datasets. See [nces.ed.gov](https://nces.ed.gov) and references noted in the body of this document for more information.

### Participation in the modern

U.S. economy requires that most workers have education and training beyond high school, with over 60 percent of all jobs and 80 percent of middle-class jobs requiring some level of postsecondary education (Carnevale, Jayasundera, and Hanson 2012; Carnevale, Smith, and Strohl 2013). The growth in jobs that require postsecondary education has accelerated since 1992 (Carnevale, Jayasundera, and Hanson 2012) and has led some analysts to suggest that a 2-year degree is the minimum educational requirement to achieve self-sufficiency (Carnevale, Gulish, and Strohl 2018). In response to these and other demands, some nonprofit organizations, including Complete College America and

Achieving the Dream, have launched initiatives to encourage students to complete a postsecondary credential, and the Lumina Foundation has set Goal 2025: to increase the number of American adults with degrees, certificates, or other credentials to 60 percent by the year 2025. These initiatives have often paid special attention to students pursuing subbaccalaureate degrees (certificates or associate's degrees), as students seeking these degrees often come from groups that are traditionally underrepresented in postsecondary education (Radford et al. 2016).

Numerous studies have provided evidence of the economic benefits of a postsecondary credential, including a subbaccalaureate credential (Baum,

Ma, and Payea 2013; Carnevale, Rose, and Cheah 2011; Rosenbaum, Stephan, and Rosenbaum 2010; Zaback, Carlson, and Crellin 2012). Completing a subbaccalaureate degree or certificate is positively associated not only with employment but also with earnings (Hout 2012; Xu and Trimble 2016; Stevens, Kurlaender, and Grosz 2015). In particular, financial benefits accrue to students who complete certificates and associate's degrees compared with those who have no education

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beyond a high school diploma (Minaya and Scott-Clayton 2017).

In light of the heightened attention to subbaccalaureate students' success, several critical questions remain: How do postsecondary students who enroll in certificate and associate's degree programs fare in both completion and employment outcomes?

This report draws upon data from the 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14) to describe the enrollment patterns, 3-year completion rates, and early labor market experiences of students who began in certificate or associate's degree programs in 2011–12. It is important to note that these labor market outcomes do not describe the outcomes of all subbaccalaureate completers, but only the subset of students who complete within 3 years and transition relatively quickly from

a certificate or associate's degree program into the labor market. Students with shorter time-to-completion tend to borrow less for education (Chen and Wiederspan 2014) and experience lower opportunity costs associated with staying enrolled and delaying entry into the workforce (King 2002).

To provide context for understanding the completion rates and labor market experiences of certificate and associate's degree students, this report begins by examining the institutions they first attended, the programs in which they initially enrolled, and their enrollment intensity during their time in college (i.e., full-time, part-time, or a mix of full- and part-time enrollment).

Throughout the report, the term *control and level of institution* refers to whether an institution is public, private nonprofit, or private for-profit

(institution control) and the institution's highest program offering (institution level). The term *subbaccalaureate students* refers to first-time students who began in either a certificate or an associate's degree program. Additional explanations regarding enrollment intensity and program completion are located in the Technical Notes under Variables Used.

All comparisons of estimates were tested for statistical significance using the Student's *t* statistic, and all differences cited are statistically significant at the  $p < .05$  level unless otherwise specified.<sup>1</sup> The findings contained in this report are purely descriptive and should not be interpreted as implying causal relationships.

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<sup>1</sup> No adjustments for multiple comparisons were made.

# STUDY QUESTIONS

**1** What control and level of institution did subbaccalaureate students first attend, what fields of study did they first pursue, and what was their enrollment intensity during their first 3 years?

**2** What percentage of subbaccalaureate students earned a credential within 3 years, and how did completion rates vary by control and level of institution first attended, field of study, and enrollment intensity?

**3** How did labor market outcomes differ between subbaccalaureate completers and noncompleters?

## KEY FINDINGS

- Among 2011–12 certificate students, 64 percent initially enrolled in private for-profit institutions. In comparison, 82 percent of 2011–12 associate’s degree students initially enrolled in public 2-year institutions (figure 1).
- Among 2011–12 female subbaccalaureate students, health care was the most common field of study: 57 percent of female certificate students and 28 percent of female associate’s degree students enrolled in health care (table 1). Among their male counterparts, the

most common field of study varied between certificate and associate’s degree students. Among male certificate students, the most common field was the combined field of manufacturing, construction, repair, and transportation, chosen by 46 percent. Among male associate’s degree students, general studies and other fields was the most common field, chosen by 19 percent.

- Three years after enrolling, 52 percent of 2011–12 certificate students had earned a credential and an additional 11 percent remained enrolled, whereas 18 percent of

associate’s degree students had earned a credential and an additional 40 percent remained enrolled (table 2).

- Among students who were no longer enrolled after 3 years, there was no significant difference in the median annual salary of certificate completers and certificate noncompleters (\$20,000 for each group); however, employed associate’s degree completers had a higher median annual salary than associate’s degree noncompleters (\$22,000 versus \$19,000) (table 4).

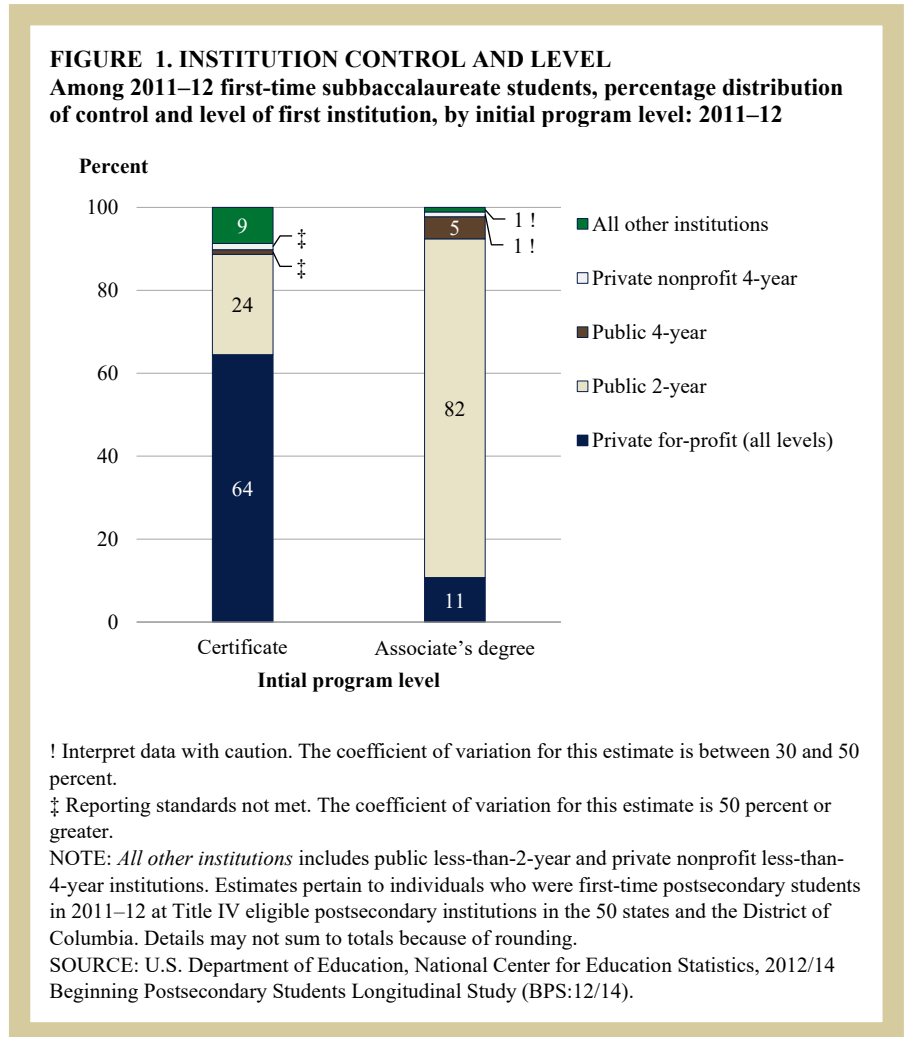
# 1

## What control and level of institution did subbaccalaureate students first attend, what fields of study did they first pursue, and what was their enrollment intensity during their first 3 years?

Among 2011–12 first-time postsecondary students enrolled in a certificate program, 64 percent first attended a private for-profit institution, such as a technical institute, and 24 percent first attended a public 2-year institution, usually a community college (figure 1). Among 2011–12 first-time postsecondary students who enrolled in an associate’s degree program, 82 percent first attended a public 2-year institution, and 11 percent first attended a private for-profit institution.

Health care was the most common field of study among certificate students overall (43 percent), followed by personal and consumer services (23 percent) and manufacturing, construction, repair, and transportation programs (16 percent) (table 1).

The most common certificate field for females was health care, enrolling 57 percent of female certificate students compared with 18 percent of male certificate students. Personal and consumer services enrolled 30 percent of female certificate students compared with 9 percent of male certificate student. Manufacturing, construction, repair, and transportation was the most common certificate field for males, with 46 percent of male certificate students enrolled in this field compared with only 1 percent of female certificate students.



No field of study predominated among 2011–12 associate’s degree students overall, though patterns emerged when looking at students by sex.

For female associate’s degree students, health care was the most common program, constituting 28 percent of enrollments. The most common associate’s degree field for males was general studies and other fields, with 19 percent of enrollments. When

comparing male and female associate’s degree students, males enrolled in four fields of study at higher rates than females did: engineering and engineering technology, computer and information sciences, business, and military technology and protective services. Female associate’s degree students enrolled in three fields at higher rates than males did: health care, social sciences and humanities, and other applied fields.

**TABLE 1. FIELD OF STUDY**

**Among 2011–12 first-time subbaccalaureate students, percentage distribution of field of study, by initial program level and sex: 2011–12**

Field of study	Certificate			Associate's degree		
	Total	Male	Female	Total	Male	Female
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Health care	43.0	17.8	56.6	18.5	7.7	27.9
Personal and consumer services	22.8	8.7	30.3	2.9	2.5	3.2
Manufacturing, construction, repair, and transportation	16.3	45.5	0.7 !	3.6	7.3	‡
Other applied fields	4.0	1.2 !	5.5	10.4	6.0	14.2
Engineering and engineering technology	3.8	10.5	‡	5.5	10.6	0.9
Business	2.9	2.2	3.3	13.3	15.3	11.6
Undecided	2.0 !	‡	‡	3.6	4.4	3.0
Military technology and protective services	1.5	3.3 !	0.6 !	6.7	7.9	5.7
Social sciences and humanities	1.1 !	‡	‡	8.4	6.8	9.8
Computer and information sciences	1.1	2.6	0.2 !	4.5	8.3	1.1
General studies and other fields	0.9 !	‡	‡	18.1	19.3	17.1
Biology and physical science, science technology, math, agriculture	0.6	1.1 !	0.3	4.6	4.0	5.2

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 percent or greater.

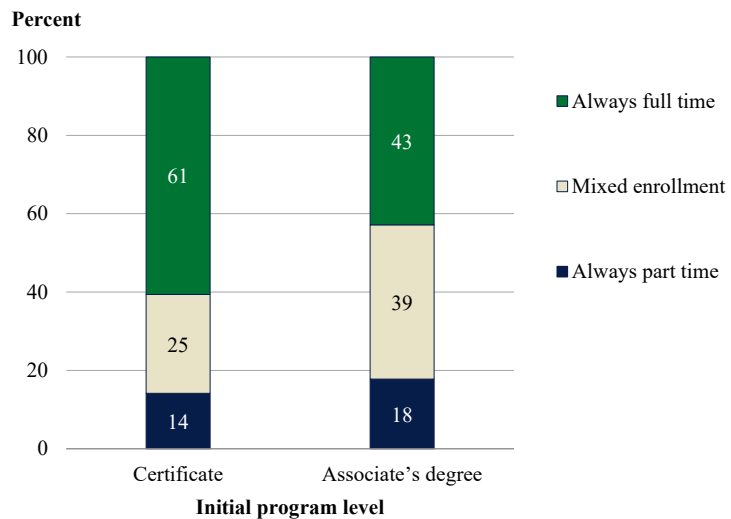
NOTE: *Other applied fields* includes education, architecture, communications, public administration and social services, design and applied arts, law and legal studies, and theology and religious vocations. *Social sciences and humanities* includes foreign languages and literatures, English language and literature, philosophy, psychology, visual and performing arts, history, anthropology, criminology, political science and government, sociology, and other social sciences. *General studies and other fields* includes liberal arts, sciences, and humanities; and multi/interdisciplinary studies.

Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Details may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

Enrollment intensity is key to understanding subbaccalaureate completion because full-time enrollment is typically associated with higher completion rates and a shorter time to completion (Ginder, Kelly-Reid, and Mann 2017, table 6; Green and Radwin 2012, table 3a). Compared with certificate students, fewer associate's degree students were enrolled full time and more had mixed enrollment (figure 2). There were no measurable differences in the percentages enrolled part time.

**Figure 2. ENROLLMENT INTENSITY**  
**Among 2011–12 first-time subbaccalaureate students, percentage distribution of enrollment intensity through 2014, by initial program level: 2014**



NOTE: Full-time status is based on 12 credit hours unless the awarding institution employs a different standard. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Details may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

# 2

## What percentage of subbaccalaureate students earned a credential within 3 years, and how did completion rates vary by control and level of institution first attended, field of study, and enrollment intensity?

Timely completion of a postsecondary credential is important given the opportunity costs associated with postsecondary education (Archibald and Feldman 2011) and the benefits that accrue to subbaccalaureate program graduates (Hout 2012; Marcotte et al. 2005; Stevens, Kurlaender, and Grosz 2015).

In this analysis, *completed credential* refers to students who began in a certificate or associate’s degree program and completed any credential within 3 years. *No credential*

*completed, enrolled* refers to students who began in a certificate or associate’s degree program and had not completed a credential and were still enrolled after 3 years. *No credential completed, not enrolled* refers to students who began in a certificate or associate’s degree program and had not completed a credential and were not enrolled after 3 years.<sup>2</sup>

Three years after entering postsecondary education, 52 percent of certificate students who began in 2011–12 had earned a credential

(table 2).<sup>3</sup> Associate’s degree students completed at a lower rate: 18 percent.<sup>4</sup>

Students who started at public 2-year institutions had lower rates of completion than their counterparts at private for-profit institutions. Among certificate students who started at public 2-year institutions, 35 percent completed a credential within 3 years, compared with 58 percent of their peers who started at private for-profit institutions. Among associate’s degree students who started at public 2-year institutions, 16 percent completed a

**TABLE 2. COMPLETION STATUS**

**Among 2011–12 first-time subbaccalaureate students, percentage distribution of 3-year completion and enrollment status, by initial program level and first institution control and level: 2014**

Control and level of first institution	Certificate			Associate’s degree		
	Completed credential	No credential completed, enrolled	No credential completed, not enrolled	Completed credential	No credential completed, enrolled	No credential completed, not enrolled
<b>Total</b>	<b>52.4</b>	<b>10.8</b>	<b>36.7</b>	<b>17.8</b>	<b>40.1</b>	<b>42.1</b>
Public 2-year	35.4	16.9	47.7	15.6	42.6	41.8
Public 4-year	‡	‡	‡	17.7	42.1	40.2
Private nonprofit 4-year	43.3 !	‡	33.4 !	26.2	30.5	43.3
Private for-profit (all levels)	58.2	8.7	33.0	33.5	20.1	46.4
All other institutions	61.2	5.7 !	33.1	33.8 !	26.8 !	39.4

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 percent or greater.

NOTE: *Completed credential* includes students who began in a certificate program or in an associate’s degree program and completed any credential within 3 years. *No credential completed, enrolled* includes students who began in a certificate program or in an associate’s degree program who had not completed a credential (at any level) and were still enrolled after 3 years. *No credential completed, not enrolled* includes students who began in a certificate program or in an associate’s degree program who had not completed a credential (at any level) and were not enrolled after 3 years. *All other institutions* includes public less-than-2-year and private nonprofit less-than-4-year institutions. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Details may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

<sup>2</sup> Some subbaccalaureate students had transferred to a baccalaureate program by 2014. For example, 9 percent of associate’s degree students and 1 percent of certificate students had transferred to a public 4-year institution as of 2014 (Ifill, Radford, Bentz, Wu, and Velez 2016, table 2.3-B). These transfer students are distributed across the three categories of students analyzed in Question 2.

<sup>3</sup> Nearly all of these completions were certificates—less than 1 percent of beginning certificate students had earned an associate’s degree or bachelor’s degree (Bentz et al. 2016, table 1.1-B).

<sup>4</sup> Nearly all of these completions were associate’s degrees—2 percent of beginning associate’s degree students had earned a certificate and less than 1 percent had earned a bachelor’s degree (Bentz et al. 2016, table 1.1-B).

credential after 3 years, compared with 34 percent of those who started at private for-profit institutions.

Completion rates for certificate and associate’s degree students also varied with the field of study in which they first enrolled. Over half of certificate students in two fields—manufacturing, construction, repair, and transportation (59 percent) and

health care (58 percent)—completed a credential by 2014 (table 3).<sup>5</sup> These completion rates were higher than the completion rates of students in other programs. Among certificate students, those studying manufacturing, construction, repair, and transportation had higher completion rates (59 percent) than students in computer and information sciences (30 percent), business

(28 percent), and other applied fields (25 percent). Associate’s degree students studying manufacturing, construction, repair, and transportation had higher completion rates (38 percent) than their peers in all other fields.

**TABLE 3. COMPLETION BY FIELD OF STUDY**

**Among 2011–12 first-time subbaccalaureate students, percentage distribution of 3-year completion and enrollment status, by initial program level and field of study: 2014**

Field of study	Certificate			Associate’s degree		
	Completed credential	No credential completed, enrolled	No credential completed, not enrolled	Completed credential	No credential completed, enrolled	No credential completed, not enrolled
<b>Total</b>	<b>52.4</b>	<b>10.8</b>	<b>36.7</b>	<b>17.8</b>	<b>40.1</b>	<b>42.1</b>
Health care	58.3	8.6	33.1	19.7	38.1	42.2
Personal and consumer services	55.6	6.4	38.0	20.6	38.0	41.4
Manufacturing, construction, repair, and transportation	58.9	7.2	33.9	38.1	13.6	48.3
Other applied fields	25.1 !	41.0	33.8	19.4	42.1	38.5
Engineering and engineering technology	41.3 !	‡	53.9	20.8	42.6	36.6
Business	28.5 !	35.0 !	36.6 !	17.2	40.0	42.8
Undecided	‡	‡	‡	7.1 !	47.9	45.0
Military technology and protective services	41.6 !	‡	49.2	18.2	38.6	43.2
Social sciences and humanities	‡	‡	56.4 !	17.6	45.6	36.8
Computer and information sciences	29.8 !	17.8 !	52.3	15.8	34.7	49.4
General studies and other fields	‡	‡	‡	12.7	41.3	46.0
Biology and physical science, science technology, math, agriculture	‡	‡	‡	19.1	48.8	32.1

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 percent or greater.

NOTE: *Other applied fields* includes education, architecture, communications, public administration and social services, design and applied arts, law and legal studies, and theology and religious vocations. *Social sciences and humanities* includes foreign languages and literatures, English language and literature, philosophy, psychology, visual and performing arts, history, anthropology, criminology, political science and government, sociology, and other social sciences. *General studies and other fields* includes liberal arts, sciences, and humanities; and multi/interdisciplinary studies.

*Completed credential* includes students who began in a certificate program or in an associate’s degree program and completed any credential within 3 years. *No credential completed, enrolled* includes students who began in a certificate program or in an associate’s degree program who had not completed a credential (at any level) and were still enrolled after 3 years. *No credential completed, not enrolled* includes students who began in a certificate program or in an associate’s degree program who had not completed a credential (at any level) and were not enrolled after 3 years.

Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Details may not sum to totals because of rounding.

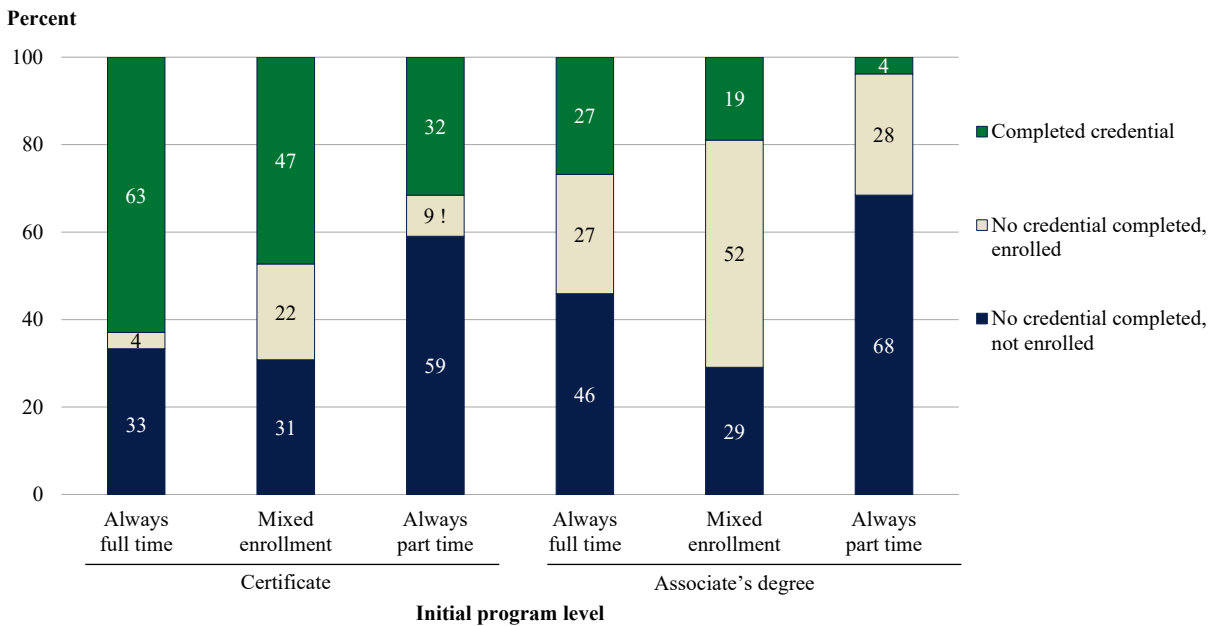
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

<sup>5</sup> The completion rate for consumer services certificate seekers, 56 percent, was not measurably different from 50 percent.

Consistent with past research (Ginder, Kelly-Reid, and Mann 2017, table 6), completion rates for both certificate and associate’s degree students varied by enrollment intensity, with higher completion rates for students who always attended full time or had mixed enrollment, compared with those

who always attended part time (figure 3). Similarly, among associate’s degree students, completion rates were highest among those who always attended full time (27 percent), lower for those with mixed enrollment (19 percent), and lowest for those who always attended part time (4 percent).

**FIGURE 3. COMPLETION BY ENROLLMENT INTENSITY**  
**Among 2011–12 first-time subbaccalaureate students, percentage distribution of 3-year completion and enrollment status, by initial program level and enrollment intensity through 2014: 2014**



! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

NOTE: *Completed credential* includes students who began in a certificate program or in an associate’s degree program and completed any credential within 3 years. *No credential completed, enrolled* includes students who began in a certificate program or in an associate’s degree program who had not completed a credential and were still enrolled after 3 years. *No credential completed, not enrolled* includes students who began in a certificate program or in an associate’s degree program who had not completed a credential and were not enrolled after 3 years. Full-time status is based on 12 credit hours unless the awarding institution employs a different standard. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).



# 3

## How did labor market outcomes differ between subbaccalaureate completers and noncompleters?

This section compares labor market outcomes for subbaccalaureate completers and noncompleters who were no longer enrolled in school.<sup>6</sup> Employment and salary information were collected only for students who were not enrolled in postsecondary education in 2014 and did not plan to reenroll in a degree or certificate program during the subsequent academic year.<sup>7</sup>

### Employment-to-Population Ratio

Three years after starting postsecondary education, 72 percent of certificate completers were employed, compared with 59 percent among certificate noncompleters (table A-4). Associate's degree completers also had a higher employment-to-population ratio<sup>8</sup> (77 percent) than noncompleters (70 percent).

**Salary.** Employed certificate completers and noncompleters had median annual salaries of \$20,000, and there were no statistically significant differences in median salary between employed certificate completers and noncompleters by sex (table 4).

Employed associate's degree completers had a higher median annual salary (\$22,000) than did associate's degree noncompleters (\$19,000). Male associate's degree completers had a higher median annual salary (\$26,000) than did female associate's degree completers (\$19,500).

<sup>6</sup> *Certificate completers* are students who began a certificate program in 2011–12 and earned a certificate as the highest credential earned by 2014, and *associate's degree completers* are students who began an associate's degree program in 2011–12 and earned an associate's degree as the highest credential earned by 2014. *Certificate noncompleters* are students who began in a certificate program in 2011–12 and had not completed any credential after 3 years; *associate's degree noncompleters* are students who began an associate's degree program in 2011–12 and had not completed any credential after 3 years.

<sup>7</sup> Employment questions do not provide information on labor force participation. These outcomes are limited to students who transitioned into the workforce within 3 years.

<sup>8</sup> The employment-to-population ratio is the number of people in a population employed relative to the size of the population (e.g., the number of employed certificate completers divided by the number of certificate completers). The denominator includes population members who are not in the labor force.

**TABLE 4. EARNINGS BY COMPLETION STATUS, SEX, AND FIELD OF STUDY**  
Among 2011–12 subbaccalaureate students who did and did not complete a credential as of 2014, median annual earnings among those employed in 2014, by initial program level, completion status, sex, and field of study: 2014

Sex and field of study	Certificate		Associate's degree	
	Completed credential	No credential completed, not enrolled	Completed credential	No credential completed, not enrolled
<b>Total</b>	<b>\$20,000</b>	<b>\$20,000</b>	<b>\$22,000</b>	<b>\$19,000</b>
<b>Sex</b>				
Male	26,000	24,000	26,000	20,000
Female	17,800	16,000	19,500	18,000
<b>Field of study</b>				
Health care	20,000	18,000	20,000	19,200
Personal and consumer services	16,500	13,500	22,800	16,000 !
Manufacturing, construction, repair, and transportation	29,300	24,000	29,900	20,000
Other applied fields	‡	‡	20,000	16,800
Engineering and engineering technology	‡	‡	29,000	25,000
Business	‡	‡	22,700	19,000
Undecided	‡	‡	‡	18,000
Military technology and protective services	‡	‡	‡	20,700
Social sciences and humanities	‡	‡	‡	18,000
Computer and information sciences	‡	‡	25,000	24,000
General studies and other fields	‡	‡	‡	17,000
Biology and physical science, science technology, math, agriculture	‡	‡	‡	20,800

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 percent or greater.

NOTE: *Other applied fields* includes education, architecture, education, architecture, communications, public administration and social services, design and applied arts, law and legal studies, and theology and religious vocations. *Social sciences and humanities* includes foreign languages and literatures, English language and literature, philosophy, psychology, visual and performing arts, history, anthropology, criminology, political science and government, sociology, and other social sciences. *General studies and other fields* includes liberal arts, sciences, and humanities; and multi/interdisciplinary studies. *Completed credential* includes students who began in a certificate program and completed a certificate and students who began in an associate's degree program and completed an associate's degree within 3 years. *No credential completed, not enrolled* includes students who began in a certificate program or an associate's degree program and had not completed a credential (at any level) and were not enrolled after 3 years. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Earnings are collected only for those students who are no longer enrolled in postsecondary education and did not plan to reenroll in a degree or certificate program during the subsequent academic year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

## FIND OUT MORE

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<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020035>

More detailed information on 2011–12 beginning postsecondary students can be found in Web Tables reports produced by NCES using the BPS:12/14 data. These publications include estimates concerning retention, persistence, attainment, withdrawal, stopout, and transfer:

*First-Time Postsecondary Students in 2011–12:*

*Three-Year Withdrawal, Stopout, and Transfer Rates* (NCES 2016-139).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016139>

*First-Time Postsecondary Students in 2011–12:*

*Three-Year Persistence and Attainment at Any Institution* (NCES 2016-138).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016138>

*First-Time Postsecondary Students in 2011–12:*

*Three-Year Retention and Attainment at First Institution* (NCES 2016-137).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016137>

*First-Time Postsecondary Students in 2011–12:*

*A Profile* (NCES 2016-136).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016136>

Readers may also be interested in the following NCES products related to topics covered in this publication:

*Three-Year Persistence and Attainment Among Subbaccalaureate Occupational Students: 2006 and 2014* (NCES 2019-045).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2019045>

*Working Before, During, and After Beginning at a Public 2-Year Institution: Labor Market Experiences of Community College Students* (NCES 2018-428).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018428>

*Trends in U.S. Subbaccalaureate Certificate Seekers: 2003–04 to 2011–12* (NCES 2016-411).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016411>

*Persistence and Attainment of 2011–12 First-Time Postsecondary Students After 3 Years* (NCES 2016-401).

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016401>

## TECHNICAL NOTES

The estimates provided in this Statistics in Brief are based on data collected through the National Center for Education Statistics’s (NCES’s) 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14). BPS:12/14 is a nationally representative study of the approximately 4 million students who were first enrolled in postsecondary education during the 2011–12 academic year. The cohort of BPS:12/14 students was initially surveyed in 2011–12 and followed up 3 years later in 2014. (A third BPS:12/14 follow-up, not included here, was conducted in 2017).

### Survey Methodology

The BPS cohorts are drawn from larger, national samples of postsecondary students who were surveyed as part of NCES’s National Postsecondary Student Aid Study (NPSAS). NPSAS is a periodic study of student enrollment in postsecondary education and how students and their families finance that education. The 2011–12 NPSAS (NPSAS:12) was the base-year study for BPS:12/14. The NPSAS:12 target population includes students enrolled in Title IV eligible postsecondary institutions in the United States at any time between July 1, 2011, and June 30, 2012.<sup>9</sup> In NPSAS:12, this population included about 23.1 million undergraduates and 3.7 million graduate students enrolled in over 7,000 institutions.

Exhibit 1 presents the population sizes, sample sizes, and responses rates for the BPS:12/14 survey, which is discussed in more detail below. The NPSAS surveys used a two-stage sampling design. First, about 1,700 eligible institutions were sampled from the universe of Title IV participating

schools. Sampled institutions supplied lists of all enrollees between July 1, 2011, and June 30, 2012, from which eligible students were then sampled. From the NPSAS:12 student sample, 37,200 NPSAS undergraduates were identified as potentially BPS eligible and were included in the 2014 BPS data collection. Responses to the 2014 BPS student interviews and administrative data collection provided additional data to determine BPS eligibility; using that more accurate information, approximately 35,500 students in 2012 were identified as beginning students and were included in the BPS:12/14 data files.

BPS:12/14 collected data from a variety of sources, including web- and phone-based student interviews, institutional records, federal financial aid applications and records of federal financial aid awards, and National Student Clearinghouse records. The estimates in this Statistics in Brief reflect data from approximately 24,800 students who participated in the NPSAS:12 data collection and the first BPS follow-up (yielding a response rate of 68 percent). These samples represent the approximately 4.3 million students who were first-time entrants to postsecondary education in the 2011–12 academic year.

**Exhibit 1. Selected statistics for BPS:12/14 data collections**

Statistic	BPS:12/14
Target population	First-time beginning students in 2011–12
Target population size	4.3 million
Sampling frame (institutions)	2009–10 IPEDS IC, <sup>1</sup> Fall Enrollment, 12-Month Enrollment, and Completion files
Number of sampled institutions (NPSAS:12) <sup>2</sup>	1,700
Number of eligible institutions (NPSAS:12) <sup>2</sup>	1,700
Number of participating institutions (NPSAS:12) <sup>2</sup>	1,500
Percent of eligible institutions that provided student enrollment lists (unweighted)	87.8
Percent of eligible institutions that provided student enrollment lists (weighted)	87.0
Number of sampled students	37,200
Number of eligible students	35,500
Interview response rate (unweighted) <sup>3</sup>	69.7
Interview response rate (weighted) <sup>3</sup>	67.6

<sup>1</sup> The 2009–10 Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics (IC), Fall Enrollment, 12-Month Enrollment, and Completion files were used to construct the institution sampling frame in 2011–12.

<sup>2</sup> The 2011–12 National Postsecondary Student Aid Study (NPSAS:12) was the base-year study for BPS:12/14.

<sup>3</sup> For more information on the weighting approach, see *2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14) Data File Documentation* (<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016062>).

NOTE: *BPS:12/14* is the abbreviation for the 2012/14 Beginning Postsecondary Students Longitudinal Study. The analysis weight includes all study respondents who completed a BPS:12/14 interview.

SOURCE: Ifill, N., Radford, A.W., Wu, J., Cataldi, E.F., Wilson, D., and Hill, J. (2016). *Persistence and Attainment of 2011–12 First-Time Postsecondary Students After 3 Years* (NCES 2016-401). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

<sup>9</sup> The target population of students was limited to those who took at least one course for credit that could be applied toward an academic degree or those enrolled in an occupational or vocational program requiring at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award. The target population excluded students who were also enrolled in high school or a high school completion (e.g., GED preparation) program. “Title IV institutions” refers to institutions eligible to participate in federal financial aid programs under Title IV of the Higher Education Act. The target population of institutions was limited to those institutions that offered an educational program designed for persons who have completed secondary education; offered at least one academic, occupational, or vocational program of study lasting at least 3 months or 300 clock hours; offered courses that were open to more than the employees or members of the company or group (e.g., union) that administered the institution; were located in one of the 50 states and the District of Columbia; were not a U.S. service academy institution; and had signed the Title IV participation agreement with the U.S. Department of Education. Students in Puerto Rico were excluded from the analysis in this Statistics in Brief.

More detailed information about the BPS data collections and survey methodology are available in the following reports: *2012/14 Beginning Postsecondary Students Longitudinal Study (BPS: 12/14) Data File Documentation* (<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016062>).

### Sources of Error

Two broad categories of error occur in estimates generated from surveys: sampling errors and nonsampling errors. Sampling errors occur when observations are based on samples rather than on entire populations. The standard error of a sample statistic is a measure of the variation due to sampling and indicates the precision of the statistic. The complex sampling design used in BPS must be taken into account when calculating variance estimates, including standard errors. NCES's web-based software application, PowerStats, was used to generate the estimates in this report; PowerStats uses the balanced repeated replication and jackknife II methods to adjust variance estimation for BPS's complex sample design (Wolter 2007).

Nonsampling errors can be attributed to several sources: incomplete information about all respondents (e.g., some students or institutions refused to participate or students participated but answered only certain items); differences among respondents in question interpretation; inability or unwillingness of respondents to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, and imputing missing data. In the design, conduct, and data processing of NCES surveys, efforts are made to minimize the effects of nonsampling errors.

Throughout the report, the term *control and level of institution* refers to whether the institution is public, private nonprofit, or private for-profit (institution control) and the institution's highest program offering (institution level). The term *always full-time* refers to students who carried at least 12 semester or quarter hours

per term at the undergraduate level or 9 credit hours per term at the graduate level; 24 semester hours or 36 quarter hours per academic year for programs of less than one academic year; or 24 clock hours per week for programs using clock hours for all months enrolled between July 2011 and June 2014. Students who are *always part-time* are students who carried less than full-time credit hours for all months enrolled between July 2011 and June 2014. Students with *mixed enrollment* are students who carried a mix of full-time and part-time enrollment for all months enrolled between July 2011 and June 2014.

The term *subbaccalaureate students* refers to first-time students who began in either a certificate or associate's degree program. *Certificate students* and *associate's degree students* refer to first-time postsecondary students who began in a certificate or associate's degree program, respectively. Question 2 examines the completion rates of these students, looking at the rate at which students who began in each type of program earn any credential. For instance, students who started in an associate's degree program and completed a certificate after 3 years are considered completers in Question 2 because they attained a

credential. Question 3 examines the outcomes for *completers* and *noncompleters*, with completers being defined based on their initial program and highest completion level. Specifically, *certificate completers* refers to students who began in a certificate program and whose highest award within 3 years was a certificate, and *associate's degree completers* refers to students who began in an associate's degree program and whose highest award within 3 years was an associate's degree. *Certificate noncompleters* and *associate's degree noncompleters* refer to students who began in a certificate or associate's degree program, respectively, and who had not completed any credential within 3 years. For question 3, both completers and noncompleters are restricted to students who were no longer enrolled 3 years after they began. This is because employment questions were asked only of unenrolled students at the time of the 2014 interview.

Some subbaccalaureate students had transferred to a baccalaureate program by 2014. For example, 9 percent of associate's degree students and 1 percent of certificate students had transferred to a public 4-year institution

### VARIABLES USED

The variables used in this Statistics in Brief are listed below. Visit the NCES DataLab website at <https://nces.ed.gov/datalab> to view detailed information on question wording for variables coming directly from an interview, how variables were constructed, and the data collection source for each variable. The program files that generated the statistics presented in this Statistics in Brief can be found at <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020035>.

Label	Name
Annual salary 2014	SALARY14
Attainment/level of last institution enrolled 2014	PRLVL3Y
Attendance intensity through June 2014	ENINPT3Y
Control and level of first institution 2011–12	FSECTOR
Field of study: undergraduate	MAJORS2Y
Job 2014: employment status	JOBST14
Persistence anywhere through June 2014	PRAT3Y
Sex	GENDER
Undergraduate degree program 2011–12	UGDEG

as of 2014 (Ifill et al. 2016, table 2.3-B). These students are distributed across the three categories of students analyzed in Question 2. Subbaccalaureate students who transferred to a baccalaureate program were likely to be enrolled in 2014; therefore, they were excluded from the analysis for Question 3. Some subbaccalaureate students who transferred to a baccalaureate program but were no longer enrolled in 2014 were captured in the analysis for Question 3; analyzing these students

separately is not feasible due to small sample sizes.

### Response Rates and Nonresponse Bias Analysis

NCES Statistical Standard 4-4-1 states that “[a]ny survey stage of data collection with a unit or item response rate less than 85 percent must be evaluated for the potential magnitude of nonresponse bias before the data or any analysis using the data may be released” (Seastrom 2014). For BPS data, nonresponse can occur at three

levels: institution, student (sample member), and item. The weighted institution response rate for NPSAS:12 was 87 percent. Therefore, nonresponse bias analysis was not required at that level.

Exhibit 1 shows that of the 35,500 eligible sample members for BPS:12/14, the weighted interview response rate was below 85 percent (68 percent). Exhibit 2 provides a summary of the results of nonresponse bias analyses conducted on the

**Exhibit 2. Summary of nonresponse bias analysis results and differences between pre- and post-stratification estimates using panel weight, by first institution control and level: 2012**

Nonresponse bias statistics	Overall	Public less-than-2-year	Public 2-year	Public 4-year non-doctorate-granting	Public 4-year doctorate-granting	Private nonprofit less-than-4-year	Private nonprofit 4-year non-doctorate-granting	Private nonprofit 4-year doctorate-granting	Private for-profit less-than-2-year	Private for-profit 2-year	Private for-profit 4-year
<b>Before nonresponse weight adjustments</b>											
Mean estimated relative bias	10.7	7.8	6.4	8.9	4.2	12.9	7.1	4.7	13.0	9.6	7.2
Median estimated relative bias	6.3	5.1	3.8	4.6	2.7	8.8	4.0	3.8	7.5	5.4	5.5
Percent of variable categories significantly biased	62.1	36.4	29.0	43.2	33.3	7.4	32.6	29.3	25.0	8.3	11.7
<b>After nonresponse weight adjustments</b>											
Mean estimated relative bias	2.5	3.7	3.8	4.4	2.9	9.5	3.6	1.8	6.0	6.8	6.0
Median estimated relative bias	#	3.9	2.5	2.7	1.4	5.6	1.9	1.3	3.1	4.8	3.1
Percent of variable categories significantly biased	6.9	#	3.2	11.4	16.7	11.1	14.0	#	2.5	8.3	8.3
<b>Difference between means and medians for respondents before and after poststratification adjustment<sup>1</sup></b>											
Mean absolute difference across characteristics	0.8	6.2	1.6	2.2	1.3	5.6	2.6	1.1	2.8	3.0	1.3
Median absolute difference across characteristics	0.5	4.9	0.3	1.4	1.0	5.7	2.1	0.9	1.2	1.1	1.1
<b>Difference between means and medians for full sample and respondents after poststratification adjustment<sup>2</sup></b>											
Mean absolute difference across characteristics	0.7	5.4	1.7	1.6	1.1	4.9	2.4	1.2	2.8	3.2	1.3
Median absolute difference across characteristics	0.5	1.8	0.6	1.3	0.8	4.4	2.2	0.8	1.7	1.7	0.8

# Rounds to zero.

<sup>1</sup> Respondents before poststratification adjustment were weighted using the base weight, adjusted for nonresponse. Respondents after poststratification adjustment were weighted using the base weight, adjusted for nonresponse and poststratification.

<sup>2</sup> The full sample was weighted using the base weight. Respondents after poststratification adjustment were weighted using the base weight, adjusted for nonresponse and poststratification.

NOTE: Relative bias and significance were calculated on respondents versus the full sample. Relative bias is defined as the ratio of estimated bias to the weighted mean of the full sample. Variable categories with fewer than 30 nonrespondents were suppressed for calculations in this table.

SOURCE: Ifill, N., Radford, A.W., Wu, J., Cataldi, E.F., Wilson, D., and Hill, J. (2016). *Persistence and Attainment of 2011–12 First-Time Postsecondary Students After 3 Years* (NCES 2016-401). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

BPS:12/14 sample before and after the weights were adjusted to account for nonresponse. Each statistic is based on analyses of the following characteristics: institution control, level, doctorate-granting status, region, enrollment, and graduation rate; student age group in NPSAS:12; whether the student filed a Free Application for Federal Student Aid (FAFSA) (had a Central Processing System match) in NPSAS:12, was a federal aid recipient, was a Pell Grant recipient and Pell Grant amount received, was a Direct Loan recipient and Direct Loan amount received; whether the student was an institutional aid recipient; whether the student was a state aid recipient; students' major; and whether the student was a grant aid recipient. Within each category of institution control and level, nonresponse weight adjustments reduced the estimated bias. For example, the mean estimated relative bias of estimates based on students who attended public 2-year institutions had a value of 6 before nonresponse weight adjustments were made and a value of 4 after those adjustments. In addition, whereas 29 percent of examined variable categories had estimates with significant bias before these adjustments, only 3 percent did afterwards. Poststratification adjustments also had effects on the bias estimates. The difference between respondents' means before and after

poststratification ranged from 1 to 6, and the differences between the full sample estimates and those of respondents after poststratification did not exceed 5.<sup>10</sup>

At the item level, only one variable used in this report, JOBST14, had a response rate below 85 percent (79 percent) and required a nonresponse bias analysis. Nonresponse bias analysis was conducted for this variable to determine whether respondents and nonrespondents differed on institution and student characteristics. Institution characteristics included the following: control and level; Office of Business Economics region; enrollment (categorized); percentage of full-time students who received any grant aid; and the rate at which full-time students graduated within 150 percent of normal time to completion. Student characteristics included the following: whether the student filed a FAFSA, received federal aid, received a Pell Grant, received a Direct Loan, received state aid, received institutional aid, amount received in Direct Loans (categorized), amount received in Pell Grants (categorized), age (categorized), and major field of study. This analysis was conducted on students who began in certificate or associate's degree programs because this report focuses on subbaccalaureate students.

The nonresponse bias analysis indicated that respondents differed from nonrespondents on 5 percent of the characteristics analyzed, indicating that there could be bias in these estimates (exhibit 3). Any bias due to nonresponse, however, is based upon responses prior to stochastic imputation in which missing data were replaced with valid data from the records of donor cases that matched the recipients on selected demographic, enrollment, institution, and financial aid-related variables (Krotki, Black, and Creel 2005).

The potential for bias can be tempered by imputation. Imputation procedures are designed specifically to identify as imputation donors cases with characteristics similar to those of the respondents whose data are missing; therefore, imputation is assumed to reduce bias. Although the level of item-level bias before imputation is measurable, the same measurement cannot be made after imputation, so the magnitude of any change in item-level bias cannot be determined. However, the item estimates before and after imputation were compared to determine whether the imputation changed the estimate; such change serves as an indication of a possible reduction in bias.

For JOBST14, the proportion of employed students was estimated

**Exhibit 3. Results of analyses to assess item-level nonresponse bias among subbaccalaureate student sample members**

Variable name	Response rate	Pre-imputation			Percent difference across all categories pre- and post-imputation
		Median percent relative bias across characteristics	Percentage of characteristics with significant bias	Characteristic with greatest significant bias	
JOBST14	78.9	1.7	4.7	State aid yes/no	10.9*

\*  $p < .05$ .

NOTE: Relative bias is computed by dividing a variable's estimated bias for a given characteristic by the variable's mean for subbaccalaureate students. Subbaccalaureate students includes all students initially enrolled in certificate or associate's degree programs. Relative bias is defined as significant if its difference from zero is statistically significant at  $p < .05$ .

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

<sup>10</sup> For more information on poststratification design, see 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14) Data File Documentation (<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016062>).

before and after imputation. The estimated difference in this proportion was tested for statistical significance at the 5 percent level. A significant difference in the proportion after imputation implies a reduction in bias due to imputation. A nonsignificant difference suggests that imputation might not have reduced bias, that the sample size was too small to detect a significant difference, or that there was little bias to be reduced. The difference between the proportions for JOBST14 was statistically significant, indicating that the nonresponse bias was reduced through imputation.

For more detailed information on nonresponse bias analysis and an overview of the survey methodology, see *2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14) Data File Documentation* (<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016062>).

### **Statistical Procedures**

Comparisons of means and proportions were tested using Student's *t* statistic. Differences between estimates were tested against the probability of a

Type I error<sup>11</sup> or significance level. The statistical significance of each comparison was determined by calculating the Student's *t* value for the difference between each pair of estimates and comparing the *t* value with published tables of significance levels for two-tailed hypothesis testing.<sup>12</sup> Student's *t* values were computed to test differences between independent estimates using the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}}$$

where  $E_1$  and  $E_2$  are the estimates to be compared and  $se_1$  and  $se_2$  are their corresponding standard errors.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large *t* statistics may appear to merit special attention. This can be misleading because the magnitude of the *t* statistic is related not only to the observed differences in estimates but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a

large number of respondents would produce a large (and thus possibly statistically significant) *t* statistic.

A second hazard in reporting statistical tests is the possibility that one can report a "false positive" or Type I error. Statistical tests are designed to limit the risk of this type of error using a value denoted by *alpha*. The *alpha* level of .05 was selected for findings in this report and ensures that a difference of a certain magnitude or larger would be produced when there was no actual difference between the quantities in the underlying population no more than 1 time out of 20.<sup>13</sup> When analysts test hypotheses that show *alpha* values at the .05 level or smaller, they reject the null hypothesis that there is no difference between the two quantities. Failing to reject a null hypothesis (i.e., detect a difference), however, does not imply that the values are the same or equivalent.

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<sup>11</sup> A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

<sup>12</sup> When testing whether an estimate was statistically different from 50 percent, to make statements like "More than half of the students ...," a one-tailed hypothesis test was used.

<sup>13</sup> No adjustments were made for multiple comparisons.

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## APPENDIX A. ESTIMATES AND STANDARD ERRORS

**Table A-1. Estimates and standard errors for figure 1. INSTITUTION CONTROL AND LEVEL**  
**Among 2011–12 first-time subbaccalaureate students, percentage distribution of control and level of first institution, by**  
**initial program level: 2011–12**

Control and level of first institution	Certificate	Associate's degree
<b>Estimates</b>		
Public 2-year	24.2	81.7
Public 4-year	‡	5.3
Private nonprofit 4-year	‡	1.2 !
Private for-profit (all levels)	64.5	10.7
All other institutions	8.7	1.1 !
<b>Standard Errors</b>		
Public 2-year	4.94	1.05
Public 4-year	†	0.49
Private nonprofit 4-year	†	0.55
Private for-profit (all levels)	4.32	0.41
All other institutions	1.54	0.33

† Not applicable.

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 percent or greater.

NOTE: *All other institutions* includes public less-than-2-year and private nonprofit less-than-4 year institutions. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Details may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-2. Estimates and standard errors for figure 2. ENROLLMENT INTENSITY**  
**Among 2011–12 first-time subbaccalaureate students, percentage distribution of enrollment intensity through 2014, by initial**  
**program level: 2014**

Enrollment intensity	Certificate	Associate's degree
<b>Estimates</b>		
Always full time	60.6	42.9
Mixed enrollment	25.2	39.4
Always part time	14.2	17.8
<b>Standard Errors</b>		
Always full time	2.56	1.35
Mixed enrollment	2.58	0.96
Always part time	1.75	1.05

NOTE: Full-time status is based on 12 credit hours unless the awarding institution employs a different standard. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Details may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-3. Estimates and standard errors for figure 3. COMPLETION BY ENROLLMENT INTENSITY**  
**Among 2011–12 first-time subbaccalaureate students, percentage distribution of 3-year completion and enrollment status, by**  
**initial program level and enrollment intensity through 2014: 2014**

Program level and enrollment intensity	Completed credential	No credential completed, enrolled	No credential completed, not enrolled
<b>Estimates</b>			
<b>Certificate</b>			
Always full time	63.0	3.7	33.3
Mixed enrollment	47.3	21.9	30.8
Always part time	31.6	9.4 !	59.1
<b>Associate's degree</b>			
Always full time	26.8	27.3	45.9
Mixed enrollment	19.0	52.0	29.1
Always part time	3.8	27.7	68.4
<b>Standard Errors</b>			
<b>Certificate</b>			
Always full time	2.45	0.67	2.34
Mixed enrollment	3.45	3.07	2.58
Always part time	4.78	3.72	5.23
<b>Associate's degree</b>			
Always full time	1.56	1.50	1.87
Mixed enrollment	0.99	1.36	1.21
Always part time	0.79	2.26	2.35

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

NOTE: *Completed credential* includes students who began in a certificate program or in an associate's degree program and completed any credential within 3 years. *No credential completed, enrolled* includes students who began in a certificate program or in an associate's degree program and who had not completed a credential and were still enrolled after 3 years. *No credential completed, not enrolled* includes students who began in a certificate program or in an associate's degree program who had not completed a credential and were not enrolled after 3 years. Full-time status is based on 12 credit hours unless the awarding institution employs a different standard. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-4. EMPLOYMENT-TO-POPULATION RATIO BY INSTITUTION CONTROL AND LEVEL**  
**Among 2011–12 subbaccalaureate students who did and did not complete a credential as of 2014, percentage employed, by**  
**initial program level, first institution control and level, and sex: 2014**

Control and level of first institution and sex	Certificate		Associate's degree	
	Completed credential	No credential completed, not enrolled	Completed credential	No credential completed, not enrolled
<b>Estimates</b>				
<b>Total</b>	<b>71.7</b>	<b>59.1</b>	<b>77.1</b>	<b>69.7</b>
Control and level of first institution				
Public 2-year	82.7	75.8	80.2	71.1
Public 4-year	‡	‡	‡	83.6
Private nonprofit 4-year	‡	‡	‡	37.9 !
Private for-profit (all levels)	69.8	51.8	75.3	60.1
All other institutions	68.6	44.8 !	‡	‡
Sex				
Male	77.8	68.9	81.2	74.8
Female	68.8	53.7	73.1	64.5
<b>Standard Errors</b>				
<b>Total</b>	<b>2.21</b>	<b>3.53</b>	<b>2.79</b>	<b>1.91</b>
Control and level of first institution				
Public 2-year	3.78	4.68	4.33	2.19
Public 4-year	†	†	†	7.74
Private nonprofit 4-year	†	†	†	11.58
Private for-profit (all levels)	2.45	3.82	3.57	3.16
All other institutions	10.06	16.94	†	†
Sex				
Male	3.46	5.41	3.41	2.63
Female	3.31	3.99	4.23	2.52

† Not applicable.

! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 percent or greater.

NOTE: *Completed credential* includes students who began in a certificate program and completed a certificate and students who began in an associate's degree program and completed an associate's degree within 3 years. *No credential completed, not enrolled* includes students who began in a certificate program or an associate's degree program and had not completed a credential (at any level) and were not enrolled after 3 years. The employment-to-population ratio is the number of students who were employed divided by the total number of students who were not enrolled after 3 years. Employment status was collected only for those students who were no longer enrolled in postsecondary education and did not plan to reenroll in a degree or certificate program during the subsequent academic year. Employment questions do not provide information on labor force participation. *All other institutions* includes public less-than-2-year and private nonprofit less-than-4-year institutions. Estimates pertain to individuals who were first-time postsecondary students in 2011–12 at Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-5. Standard errors for table 1: FIELD OF STUDY**

Among 2011–12 first-time subbaccalaureate students, percentage distribution of field of study, by initial program level and sex: 2011–12

Field of study	Certificate			Associate's degree		
	Total	Male	Female	Total	Male	Female
<b>Total</b>	†	†	†	†	†	†
Health care	3.95	2.76	4.97	0.86	0.84	1.23
Personal and consumer services	3.33	2.36	4.68	0.33	0.47	0.49
Manufacturing, construction, repair, and transportation	2.21	4.31	0.27	0.55	1.08	†
Other applied fields	0.94	0.56	1.35	0.58	0.75	0.84
Engineering and engineering technology	0.92	2.47	†	0.43	0.88	0.22
Business	0.49	0.70	0.61	0.69	1.12	0.78
Undecided	0.88	†	†	0.45	0.68	0.48
Military technology and protective services	0.38	1.09	0.18	0.46	0.70	0.61
Social sciences and humanities	0.51	†	†	0.48	0.63	0.69
Computer and information sciences	0.21	0.61	0.10	0.44	0.89	0.19
General studies and other fields	0.35	†	†	0.80	1.29	0.96
Biology and physical science, science technology, math, agriculture	0.16	0.44	0.08	0.38	0.47	0.55

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-6. Standard errors for table 2: COMPLETION STATUS**

Among 2011–12 first-time subbaccalaureate students, percentage distribution of 3-year completion and enrollment status, by initial program level and first institution control and level: 2014

Control and level of first institution	Certificate			Associate's degree		
	Completed credential	No credential completed, enrolled	No credential completed, not enrolled	Completed credential	No credential completed, enrolled	No credential completed, not enrolled
<b>Total</b>	<b>2.23</b>	<b>1.30</b>	<b>2.03</b>	<b>0.80</b>	<b>0.94</b>	<b>1.07</b>
Public 2-year	4.58	3.15	4.29	0.81	1.07	1.24
Public 4-year	†	†	†	3.03	5.11	4.67
Private nonprofit 4-year	13.55	†	11.94	5.30	4.51	5.07
Private for-profit (all levels)	2.40	1.57	1.94	1.93	1.38	1.77
All other institutions	6.89	2.09	7.23	15.35	11.04	10.53

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-7. Standard errors for table 3: COMPLETION BY FIELD OF STUDY**  
**Among 2011–12 first-time subbaccalaureate students, percentage distribution of 3-year completion and enrollment status, by**  
**initial program level and field of study: 2014**

Field of study	Certificate			Associate's degree		
	Completed credential	No credential completed, enrolled	No credential completed, not enrolled	Completed credential	No credential completed, enrolled	No credential completed, not enrolled
<b>Total</b>	<b>2.23</b>	<b>1.30</b>	<b>2.03</b>	<b>0.80</b>	<b>0.94</b>	<b>1.07</b>
Health care	2.78	1.83	2.20	1.45	2.14	2.16
Personal and consumer services	4.83	1.11	4.81	3.50	5.32	5.25
Manufacturing, construction, repair, and transportation	4.39	1.36	4.26	4.35	3.09	4.27
Other applied fields	8.00	10.80	7.54	2.19	2.49	2.50
Engineering and engineering technology	13.00	2.83	13.95	3.39	4.29	3.88
Business	9.74	14.98	11.93	1.77	2.11	2.61
Undecided	†	†	†	2.53	6.00	5.82
Military technology and protective services	13.27	4.97	12.42	2.60	2.94	3.67
Social sciences and humanities	21.92	12.39	22.04	2.45	2.96	2.83
Computer and information sciences	11.20	7.40	14.53	2.53	3.86	4.43
General studies and other fields	†	†	†	1.38	2.26	2.13
Biology and physical science, science technology, math, agriculture	†	†	†	2.83	4.42	3.83

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

**Table A-8. Standard errors for table 4: EARNINGS BY COMPLETION STATUS, SEX, AND FIELD OF STUDY  
Among 2011–12 subbaccalaureate students who did and did not complete a credential as of 2014, median annual earnings  
among those employed in 2014, by initial program level, completion status, sex, and field of study: 2014**

Sex and field of study	Certificate		Associate's degree	
	Completed credential	No credential completed, not enrolled	Completed credential	No credential completed, not enrolled
<b>Total</b>	<b>\$1,690</b>	<b>\$1,000</b>	<b>\$910</b>	<b>\$530</b>
<b>Sex</b>				
Male	3,430	2,860	2,290	480
Female	1,120	1,420	1,360	870
<b>Field of study</b>				
Health care	1,800	1,290	1,620	1,130
Personal and consumer services	1,180	3,480	2,410	5,970
Manufacturing, construction, repair, and transportation	3,430	6,770	2,670	2,670
Other applied fields	†		2,180	1,080
Engineering and engineering technology	†	†	2,300	3,010
Business	†	†	2,830	990
Undecided	†	†	†	3,740
Military technology and protective services	†	†	†	1,460
Social sciences and humanities	†	†	†	1,370
Computer and information sciences	†	†	7,290	4,000
General studies and other fields	†	†	†	1,070
Biology and physical science, science technology, math, agriculture	†	†	†	2,740

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2012/14 Beginning Postsecondary Students Longitudinal Study (BPS:12/14).

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