

2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09)

First Look



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Foreword

This *First Look* presents findings from the 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09), which describes the enrollment and employment experiences of a national sample of college graduates who completed a bachelor’s degree in the 2007–08 academic year 1 year after they graduated. The tables in this report provide a sampling of the data available on graduates who earned their first bachelor’s degree in 2007–08, presenting information on their undergraduate enrollment, including time to degree and education financing; postbaccalaureate enrollment and employment, particularly employment in teaching; and student loan repayment 1 year after completing college. B&B:08 is the third in a series of studies of bachelor’s degree recipients that have previously covered 1992–93 graduates through 2003 (B&B:93) and 1999–2000 graduates through 2001 (B&B:2000). Reports that have used these studies and public access to the data upon which these reports are based may be found on the National Center for Education Statistics (NCES) website for B&B at <http://nces.ed.gov/surveys/b%26b>.

The data on which this report is based are available to researchers and the public through the NCES DataLab at <http://nces.ed.gov/datalab>. The DataLab provides users with two options, QuickStats and PowerStats. QuickStats is an easy-to-use introductory tool designed for the public that allows users to create their own tables from the 100 most frequently used variables. PowerStats is a simplified and improved version of the older Data Analysis System (DAS) and provides researchers with many more options for producing tables and multivariate analyses. PowerStats contains about 1,000 B&B:08/09 variables with descriptions, programming notes, and frequency distributions.

We hope that the information in this report will be useful to a wide range of readers and will encourage researchers and others to make full use of the NCES DataLab tools to answer their own questions about the undergraduate and postbaccalaureate experiences of college graduates.

Thomas Weko
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Introduction

This report provides initial results to the first follow-up of the 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09). The study addresses questions related to bachelor’s degree recipients’ education and employment experiences. The first follow-up study, conducted 1 year after graduation, explores both undergraduate education experiences and early postbaccalaureate employment and enrollment. The second follow-up, planned for 2012, will examine bachelor’s degree recipients’ labor market experiences and postbaccalaureate education through the fourth year after graduation.

More specifically, the Baccalaureate and Beyond (B&B) series of data collections allows researchers to address questions regarding bachelor’s degree recipients’ undergraduate experiences, including participation in various financial aid programs, undergraduate debt, and repayment of that debt; entrance into and progress through postbaccalaureate education, including time to the bachelor’s degree; and employment, particularly as elementary/secondary teachers. A sample of the data available on these topics is presented in the eight tables that make up this First Look.

The purpose of this First Look report is to introduce new National Center for Education Statistics (NCES) survey data through the presentation of selected descriptive information. Because this report is purely descriptive in nature, readers are cautioned not to draw causal inferences based solely on the bivariate results presented in it. It is important to note that many of the variables examined in this report may be related to one another, and complex interactions and relationships among the variables have not been explored. The variables examined here are also just a few of those that can be examined in these data; they were selected to demonstrate the range of information available from the study. These findings are examples of estimates that can be obtained from the data and are not designed to emphasize any particular issue. The release of this report is intended to encourage more in-depth analysis of the data using more sophisticated statistical methods.

Among the approximately 137,800 undergraduate students who were sampled for the 2007–08 National Postsecondary Student Aid Study (NPSAS:08), approximately 17,160 students were determined to be eligible for B&B:08/09. Eligible students were those who had enrolled at an institution that was eligible to participate in Title IV federal student aid programs and was located in one of the 50 states, the District of Columbia, or Puerto Rico; had completed requirements for a bachelor’s degree

between July 1, 2007, and June 30, 2008; and were awarded their baccalaureate degree by the institution from which they were sampled no later than June 30, 2009. These students represent approximately 1.6 million students who completed the requirements for a baccalaureate degree between July 1, 2007, and June 30, 2008. In this report, the 7 percent of 2007–08 bachelor’s degree recipients who had earned another bachelor’s (or higher) degree before the 2007–08 bachelor’s were excluded from the analyses.

This study includes the following information provided by respondents in the NPSAS:08 and B&B:08/09 interviews and by various organizations and institutions:

- administrative data from the National Student Loan Data System (NSLDS);
- test score data from the College Board and ACT;
- postsecondary enrollment data from the National Student Clearinghouse (NSC); and
- financial aid data collected through the Free Application for Federal Student Aid (FAFSA).

This report is organized as follows. The first section presents key findings from the set of detailed tables that follow. Tables 1–2 provide information on the demographic and undergraduate enrollment characteristics of 2007–08 bachelor’s degree recipients. Tables 3–4 examine some of the resources—time taken and money borrowed—that graduates used to complete their bachelor’s degrees. Tables 5–8 address postbaccalaureate activities and outcomes: education, employment, income, and participation in or preparation for K–12 teaching. Appendix A provides information regarding the methods used in data collection and editing and the quality of the data.

Selected Findings

Enrollment and demography of 2007–08 first-time bachelor's degree recipients

- Twenty-three percent of 2007–08 first-time bachelor's degree recipients majored in a business-related field; 16 percent in science, technology, engineering, or mathematics (STEM); 16 percent in a social science; and 12 percent in the humanities (table 1).
- About 20 percent of 2007–08 first-time bachelor's degree recipients had parents whose highest level of educational attainment was a high school diploma or less (table 2).
- Forty-four percent of 2007–08 first-time bachelor's degree recipients completed a bachelor's degree within 48 months of their initial postsecondary enrollment, another 23 percent within 49–60 months, and an additional 9 percent within 61–72 months (table 3).

Financing for 2007–08 first-time bachelor's degree recipients

- Sixty-six percent of 2007–08 first-time bachelor's degree recipients borrowed to finance their degree, and of these, the average cumulative amount borrowed was \$24,700. Federal borrowers, 62 percent of graduates, took out an average of \$18,200 in federal loans over the course of their undergraduate education. Those who borrowed from state or private sources, 36 percent of graduates, took out a cumulative average of \$13,900 in these loans, 95 percent of which were private loans (table 4).

Education and employment after college of 2007–08 first-time bachelor's degree recipients

- As of the 2009 interview date, 30 percent of 2007–08 first-time bachelor's degree recipients had enrolled in another education program or had been accepted to a program and would enroll in the 2009–10 academic year following the interview date. Three percent had entered or were entering a program leading to another undergraduate certificate or degree, and the remainder had entered or were entering a graduate or first-professional certificate or degree program (table 5).
- When interviewed about a year after completing their degree requirements, 84 percent of 2007–08 first-time bachelor's degree recipients were working. Nine percent of 2007–08 first-time bachelor's degree recipients were unemployed (i.e., looking for work but not working), and 7 percent were not in the labor force (table 6).

- Among 2007–08 first-time bachelor’s degree recipients who were employed full time, one-quarter earned less than \$27,457 in 2009, while another quarter earned more than \$49,200 in 2009. The median earned income was \$36,000 (table 7).
- Ten percent of 2007–08 first-time bachelor’s degree recipients had taught at the K–12 level: 2 percent started before receiving the 2007–08 degree and 8 percent since. As of the 2009 interview, 5 percent of 2007–08 first-time bachelor’s degree recipients had prepared to teach at the K–12 level but not taught, and 10 percent were considering teaching but had neither taught nor prepared to teach (table 8).

Table 1. DEMOGRAPHY AND ENROLLMENT BY SEX AND RACE/ETHNICITY: Percentage distribution of 2007–08 first-time bachelor's degree recipients by sex, race/ethnicity, demographic, and enrollment characteristics: 2009

Demographic and enrollment characteristics	Total	Sex		Race/ethnicity ¹				
		Male	Female	White	Black	Hispanic	Asian	Other
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sex								
Male	42.1	100.0	†	43.6	32.5	36.2	48.9	38.7
Female	57.9	†	100.0	56.4	67.5	63.8	51.1	61.3
Race/ethnicity ¹								
White	73.0	75.6	71.1	100.0	†	†	†	†
Black	8.5	6.6	10.0	†	100.0	†	†	†
Hispanic	9.5	8.2	10.5	†	†	100.0	†	†
Asian	5.8	6.7	5.1	†	†	†	100.0	†
Other	3.2	2.9	3.4	†	†	†	†	100.0
SAT score level ²								
Low	24.8	20.3	28.2	19.6	59.5	42.3	23.1	28.8
Low middle	25.1	22.8	26.8	25.5	20.1	28.2	20.5	27.0
High middle	25.9	28.1	24.2	28.7	13.2	16.9	21.0	20.0
High	24.3	28.8	20.9	26.3	7.2	12.6	35.4	24.2
Age at bachelor's degree completion								
23 or younger	67.3	65.7	68.4	70.8	49.2	55.2	74.0	59.1
24–29	19.4	22.4	17.2	17.6	21.4	28.3	21.4	24.5
30 or older	13.3	11.9	14.4	11.6	29.4	16.5	4.6	16.4
Highest education attained by either parent ³								
High school or less	20.1	17.3	22.2	16.4	33.3	36.5	23.9	17.8
Some postsecondary education	23.7	21.5	25.4	23.5	29.4	25.7	14.2	24.8
Bachelor's degree	26.4	28.4	24.9	28.2	17.6	17.9	25.6	31.9
Graduate or first-professional degree	29.8	32.8	27.6	31.9	19.8	19.9	36.3	25.5
Ever received a Pell grant								
Yes	37.3	34.9	39.0	30.7	64.5	57.3	41.0	47.6
No	62.7	65.1	61.0	69.3	35.5	42.7	59.0	52.4

See notes at end of table.

Table 1. DEMOGRAPHY AND ENROLLMENT BY SEX AND RACE/ETHNICITY: Percentage distribution of 2007–08 first-time bachelor's degree recipients by sex, race/ethnicity, demographic, and enrollment characteristics: 2009—Continued

Demographic and enrollment characteristics	Total	Sex		Race/ethnicity ¹				
		Male	Female	White	Black	Hispanic	Asian	Other
Bachelor's degree major ⁴								
STEM major ⁵	16.3	25.5	9.7	16.0	14.9	12.3	31.4	12.7
Computer and information sciences	2.9	5.5	1.0	2.4	5.3	3.4	5.3	2.5 !
Engineering and engineering technology	6.1	11.6	2.0	6.0	4.7	4.0	12.9	4.6 !
Biological and physical sciences, science technology, mathematics, and agricultural sciences	7.4	8.4	6.7	7.6	4.9	4.9	13.2	5.6
General studies and other ⁶	3.0	2.5	3.4	3.0	2.9	3.1	3.0 !	3.3
Social sciences	15.5	13.5	16.9	14.6	14.8	19.4	19.1	19.0
Humanities	12.0	11.3	12.6	13.1	4.3	12.6	7.3	14.6
Health care fields	6.7	2.0	10.1	6.8	8.7	5.8	5.6	4.9
Business	23.3	27.6	20.3	22.4	33.7	22.7	21.4	23.4
Education	8.0	3.7	11.1	9.2	4.7	5.9	2.6	6.2
Other applied ⁷	15.1	14.0	15.8	14.9	16.1	18.3	9.6	16.0
Bachelor's degree institution sector ⁸								
Public 4-year	62.5	64.7	60.8	62.3	61.1	62.6	70.0	56.2
Private nonprofit 4-year	33.0	30.6	34.8	34.2	30.0	28.4	26.2	38.4
For-profit 4-year	4.6	4.7	4.4	3.5	8.9	8.9	3.8 !	5.4 !
Received bachelor's degree from HBCU ⁹								
Yes	1.7	1.6	1.9	0.3	16.4	‡	‡	‡
No	98.3	98.4	98.1	99.7	83.6	99.6	99.9	97.7
Ever attended an HHE institution ¹⁰								
Yes	11.8	10.8	12.6	6.0	13.7	48.3	21.1	13.4
No	88.2	89.2	87.4	94.0	86.3	51.7	78.9	86.6
First institution sector								
2-year or less	29.4	27.2	31.1	27.9	29.5	36.8	32.1	37.2
Public 2-year	28.0	25.9	29.6	26.7	26.3	35.3	31.3	34.7
Other 2-year or less ¹¹	1.4	1.3	1.5	1.2	3.2	1.5 !	‡	2.5 !
4-year	70.6	72.8	68.9	72.1	70.5	63.2	67.9	62.8
Public	44.5	47.4	42.4	45.1	45.4	38.9	48.4	38.5
Private nonprofit	24.1	23.1	24.8	25.4	22.1	19.9	17.6	22.5
For-profit	1.9	2.2	1.7	1.5	3.0	4.4	1.8 !	‡
Marital status and dependents in 2009 ¹²								
Unmarried with no dependents	66.5	70.5	63.5	67.1	58.6	62.3	80.4	59.2
Unmarried with dependents	4.9	2.9	6.3	2.9	17.2	8.8	3.7	8.1
Married with no dependents	17.6	15.5	19.1	19.8	7.9	14.0	9.3	18.1
Married with dependents	11.1	11.0	11.1	10.1	16.4	15.0	6.6	14.5

See notes at end of table.

Table 1. DEMOGRAPHY AND ENROLLMENT BY SEX AND RACE/ETHNICITY: Percentage distribution of 2007–08 first-time bachelor's degree recipients by sex, race/ethnicity, demographic, and enrollment characteristics: 2009—Continued

Demographic and enrollment characteristics	Total	Sex		Race/ethnicity ¹				
		Male	Female	White	Black	Hispanic	Asian	Other
Employment and enrollment status in 2009 ¹³								
One job								
Full time	56.9	60.5	54.4	57.5	56.6	57.6	48.5	59.3
Part time	13.6	11.3	15.4	13.3	14.1	15.4	14.7	12.9
Multiple jobs	13.5	12.0	14.6	14.6	11.5	9.3	7.6	16.3
Unemployed	9.0	9.9	8.3	7.6	12.8	12.2	16.0	7.1
Out of the labor force	6.9	6.3	7.4	7.0	4.9	5.5	13.2	4.4
Enrolled in a degree program	4.4	4.6	4.2	4.4	3.4	2.6	9.6	1.8 !
Not enrolled in a degree program	2.6	1.7	3.2	2.5	1.6 !	2.9	3.6	2.6 !
Enrollment status in 2009								
Enrolled in undergraduate program	1.8	1.5	2.0	1.5	3.0	1.9	3.0 !	2.7 !
Enrolled in graduate program	19.5	18.7	20.1	18.8	22.0	19.6	23.3	21.7
Not enrolled	78.7	79.8	78.0	79.7	75.1	78.6	73.7	75.7

† Not applicable.

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

‡ Reporting standards not met.

¹ Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Pacific Islander, Native Hawaiian, and graduates having origins in two or more races or a race not listed. Race categories exclude Hispanic origin.

² Applies to graduates age 30 or younger as of December 31, 2007. Scores 950 and below are classified as low; those ranging from 951 to 1070 are classified as low middle; those ranging from 1071 to 1210 are classified as high middle; and those 1211 and above are classified as high. SAT scores were not collected for the 13 percent of students who were age 30 or older.

³ Excludes the 1.2 percent of graduates who did not know either parent's highest level of education.

⁴ Graduates with multiple majors were classified by the first major field of study reported.

⁵ Includes science, technology, engineering, and mathematics.

⁶ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.

⁷ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

⁸ Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degree from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.09 percent of graduates who attained their degree from a for-profit less-than-4-year institution.

⁹ "HBCU" indicates historically Black college or university.

¹⁰ "HHE" indicates High Hispanic Enrollment Institutions whose full-time equivalent undergraduate enrollment was at least 25 percent Hispanic according to Fall 2007 enrollment data in the Integrated Postsecondary Education Data System. Includes only public and private nonprofit institutions. High Hispanic enrollment may be one factor in determining the eligibility of an institution for some federal grant, contract, or benefit programs under, for example, the Title V program under the Higher Education Act.

¹¹ Includes private nonprofit 2-year, for-profit 2-year, and all less-than-2-year institutions.

¹² Unmarried includes separated graduates.

¹³ Graduates who worked 35 or more hours per week are defined as working full time; those who were not working but looking for work are defined as unemployed; and those who were not working and not looking for work are defined as out of the labor force.

NOTE: This table excludes the 7.0 percent of 2007–08 bachelor's degree recipients who had earned another bachelor's degree prior to 2007–08. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 2. DEMOGRAPHY AND ENROLLMENT BY PARENT EDUCATION: Percentage distribution of 2007–08 first-time bachelor's degree recipients by highest level of parent education, demographic, and enrollment characteristics: 2009

Demographic and enrollment characteristics	Highest education attained by either parent			
	High school or less	Some postsecondary education	Bachelor's degree	Graduate or first-professional degree
Total	20.1	23.7	26.4	29.8
Sex				
Male	17.3	21.5	28.4	32.8
Female	22.2	25.4	24.9	27.6
Race/ethnicity ¹				
White	16.4	23.5	28.2	31.9
Black	33.3	29.4	17.6	19.8
Hispanic	36.5	25.7	17.9	19.9
Asian	23.9	14.2	25.6	36.3
Other	17.8	24.8	31.9	25.5
Age at bachelor's degree completion				
23 or younger	13.6	22.0	29.3	35.1
24–29	27.1	25.7	23.8	23.4
30 or older	43.7	29.9	14.9	11.4
Bachelor's degree major ²				
STEM major ³	17.6	20.6	29.7	32.2
Computer and information sciences	27.6	28.5	20.4	23.5
Engineering and engineering technology	15.8	18.0	37.1	29.1
Biological and physical sciences, science technology, mathematics, and agricultural sciences	15.1	19.6	27.2	38.1
General studies and other ⁴	17.1	21.6	32.0	29.3
Social sciences	17.7	22.0	24.6	35.7
Humanities	13.3	20.1	27.6	39.0
Health care fields	26.4	29.9	21.8	21.9
Business	23.7	24.8	26.0	25.5
Education	23.9	25.8	23.1	27.2
Other applied ⁵	21.1	26.8	26.7	25.4
Bachelor's degree institution sector ⁶				
Public 4-year	20.2	24.2	27.7	27.9
Private nonprofit 4-year	16.9	21.9	25.3	35.9
For-profit 4-year	43.4	30.9	14.9	10.8
Received bachelor's degree from HBCU ⁷				
Yes	24.1	26.4	21.5	28.0
No	20.1	23.7	26.4	29.8
Ever attended an HHE institution ⁸				
Yes	35.1	24.5	21.7	18.6
No	18.2	23.6	27.0	31.3

See notes at end of table.

Table 2. DEMOGRAPHY AND ENROLLMENT BY PARENT EDUCATION: Percentage distribution of 2007–08 first-time bachelor’s degree recipients by highest level of parent education, demographic, and enrollment characteristics: 2009—Continued

Demographic and enrollment characteristics	Highest education attained by either parent			
	High school or less	Some postsecondary education	Bachelor’s degree	Graduate or first-professional degree
First institution sector				
2-year or less	28.2	26.8	23.1	21.8
Public 2-year	27.3	26.8	23.8	22.1
Other 2-year or less ⁹	46.7	28.3	9.3 !	15.7
4-year	17.2	23.1	27.6	32.1
Public	18.4	23.8	28.4	29.3
Private nonprofit	13.4	20.7	27.2	38.6
For-profit	35.9	37.6	13.5	13.0
Employment and enrollment status in 2009 ¹⁰				
One job				
Full time	21.6	24.4	26.8	27.3
Part time	18.7	24.1	26.6	30.5
Multiple jobs	17.7	25.4	26.7	30.2
Unemployed	21.7	20.9	25.0	32.4
Out of the labor force	13.6	17.8	23.3	45.3
Enrolled in a degree program	12.2	16.1	25.0	46.6
Not enrolled in a degree program	16.0	20.7	20.3	43.0
Enrollment status in 2009				
Enrolled in undergraduate program	27.1	24.5	20.5	27.9
Enrolled in graduate program	17.3	22.1	25.6	35.0
Not enrolled	20.7	24.1	26.7	28.5

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

¹ Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Pacific Islander, Native Hawaiian, and graduates having origins in two or more races or a race not listed. Race categories exclude Hispanic origin.

² Graduates with multiple majors were classified by the first major field of study reported.

³ Includes science, technology, engineering, and mathematics.

⁴ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.

⁵ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

⁶ Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor’s degree from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.09 percent of graduates who attained their degree from a for-profit less-than-4-year institution.

⁷ “HBCU” indicates historically Black college or university.

⁸ “HHE” indicates High Hispanic Enrollment Institutions whose full-time equivalent undergraduate enrollment was at least 25 percent Hispanic according to Fall 2007 enrollment data in the Integrated Postsecondary Education Data System. Includes only public and private nonprofit institutions. High Hispanic enrollment may be one factor in determining the eligibility of an institution for some federal grant, contract, or benefit programs under, for example, the Title V program under the Higher Education Act.

⁹ Includes private nonprofit 2-year, for-profit 2-year, and all less-than-2-year institutions.

¹⁰ Graduates who worked 35 or more hours per week are defined as working full time; those who were not working but looking for work are defined as unemployed; and those who were not working and not looking for work are defined as out of the labor force.

NOTE: This table excludes the 7.0 percent of 2007–08 bachelor’s degree recipients who had earned another bachelor’s degree prior to 2007–08 and, among all first-time bachelor’s degree recipients, the 1.2 percent of graduates who did not know either parent’s highest level of education. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 3. TIME TO DEGREE: Median and percentage distribution of 2007–08 first-time bachelor’s degree recipients by number of months from enrollment to degree attainment and enrollment characteristics: 2009

Enrollment characteristics	Median	Number of months from enrollment to degree attainment				
		48 or less	49–60	61–72	73–120	More than 120
Total	52	44.2	22.9	9.3	12.1	11.5
Delayed entry into postsecondary education ¹						
Delayed entry	80	18.7	14.9	10.2	23.2	33.0
Did not delay entry	51	47.6	24.0	9.2	10.6	8.6
First institution sector						
2-year or less	63	25.4	21.9	13.9	19.0	19.8
Public 2-year	63	26.3	22.3	14.0	18.9	18.5
Other 2-year or less ²	96	8.6 !	14.5	11.7 !	21.0	44.3
4-year	47	50.6	24.0	7.8	9.5	8.1
Public	52	43.7	28.6	9.6	10.3	7.8
Private nonprofit	45	64.5	16.2	4.4	7.5	7.4
For-profit	57	38.2	15.4	8.1 !	16.6	21.6
Bachelor’s degree major ³						
STEM major ⁴	51	46.2	26.3	9.4	9.3	8.8
Computer and information sciences	58	34.5	18.0	8.6	15.6	23.2
Engineering and engineering technology	56	38.1	35.4	8.9	9.4	8.3
Biological and physical sciences, science technology, mathematics, and agricultural sciences	45	57.5	22.0	10.0	6.7	3.7
General studies and other ⁵	57	29.9	24.8	10.3	17.7	17.2
Social sciences	45	55.7	18.1	8.1	10.4	7.6
Humanities	45	54.7	20.4	8.9	10.4	5.6
Health care fields	57	34.9	19.0	10.6	15.6	19.9
Business	53	40.5	21.8	7.5	13.3	16.9
Education	56	34.1	27.5	14.4	13.2	10.7
Other applied ⁶	54	39.9	26.9	10.1	13.1	10.0
Bachelor’s degree institution sector ⁷						
Public 4-year	55	38.4	28.0	11.6	13.4	8.6
Private nonprofit 4-year	45	58.9	15.2	5.2	8.3	12.5
For-profit 4-year	103	18.2	8.5	8.3	21.3	43.7
Received bachelor’s degree from HBCU ⁸						
Yes	56	37.6	28.0	9.9	14.1 !	10.3
No	52	44.3	22.8	9.3	12.1	11.5
Ever attended an HHE institution ⁹						
Yes	69	20.8	20.0	14.7	21.4	23.1
No	51	47.4	23.3	8.6	10.8	9.9

See notes at end of table.

Table 3. TIME TO DEGREE: Median and percentage distribution of 2007–08 first-time bachelor’s degree recipients by number of months from enrollment to degree attainment and enrollment characteristics: 2009—Continued

Enrollment characteristics	Median	Number of months from enrollment to degree attainment				
		48 or less	49–60	61–72	73–120	More than 120
Number of institutions attended						
One	45	60.8	24.9	6.1	5.6	2.6
Two	56	37.0	25.2	12.8	14.4	10.6
Three or more	83	17.9	14.0	10.7	23.4	34.1

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

¹ “Delayed entry” indicates 12 months or more between high school graduation and initial postsecondary enrollment; “did not delay entry” indicates 11 months or less after high school graduation.

² Includes private nonprofit 2-year, for-profit 2-year, and all less-than-2-year institutions.

³ Graduates with multiple majors were classified by the first major field of study reported.

⁴ Includes science, technology, engineering, and mathematics.

⁵ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.

⁶ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

⁷ Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor’s degree from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.09 percent of graduates who attained their degree from a for-profit less-than-4-year institution.

⁸ “HBCU” indicates historically Black college or university.

⁹ “HHE” indicates High Hispanic Enrollment Institutions whose full-time equivalent undergraduate enrollment was at least 25 percent Hispanic according to Fall 2007 enrollment data in the Integrated Postsecondary Education Data System. Includes only public and private nonprofit institutions. High Hispanic enrollment may be one factor in determining the eligibility of an institution for some federal grant, contract, or benefit programs under, for example, the Title V program under the Higher Education Act.

NOTE: This table excludes the 7.0 percent of 2007–08 bachelor’s degree recipients who had earned another bachelor’s degree prior to 2007–08. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 4. UNDERGRADUATE BORROWING: Among 2007–08 first-time bachelor’s degree recipients, percentage who borrowed and average cumulative amount borrowed for the bachelor’s degree by federal loan status, demographic, and enrollment characteristics: 2009

Demographic and enrollment characteristics	Total loans		Federal loans		Nonfederal loans ¹	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	65.6	\$24,700	61.5	\$18,200	35.7	\$13,900
Dependency status in 2007–08						
Dependent	61.3	23,900	57.7	15,300	35.4	16,300
Independent	73.5	25,800	68.5	22,600	36.2	9,700
Bachelor’s degree institution sector ²						
Public 4-year	61.8	20,800	57.5	17,100	30.0	10,100
Non-doctorate-granting	63.8	20,500	59.6	17,400	31.1	8,800
Doctorate-granting	61.0	20,900	56.8	17,000	29.5	10,600
Private nonprofit 4-year	69.5	28,900	65.5	18,300	43.2	18,800
Non-doctorate-granting	75.2	27,600	71.6	18,700	45.6	16,000
Doctorate-granting	63.9	30,500	59.6	17,800	40.7	21,900
For-profit 4-year	90.2	36,800	87.0	28,100	60.8	14,400
Received bachelor’s degree from HBCU ³						
Yes	77.7	27,900	73.0	22,900	35.4	14,100
No	65.4	24,600	61.3	18,100	35.7	13,900
Ever attended an HHE institution ⁴						
Yes	63.5	22,800	57.4	18,900	31.7	11,500
No	65.9	24,900	62.1	18,100	36.3	14,200
First institution sector						
2-year or less	68.3	24,900	64.2	19,500	36.5	12,400
Public 2-year	67.5	24,500	63.4	19,000	35.7	12,500
Other 2-year or less ⁵	85.0	31,600	79.2	26,700	53.1	10,700
4-year	65.3	24,600	61.3	17,700	35.7	14,500
Public	62.1	21,900	58.2	17,300	31.3	11,300
Private nonprofit	69.4	27,900	65.0	17,700	41.8	18,800
For-profit	87.7	36,000	85.2	25,200	61.4	16,500
Number of months from enrollment to degree attainment						
48 months or less	59.5	24,100	56.0	15,100	34.1	17,300
49–60 months	64.9	23,800	60.9	17,300	36.7	13,500
61–72 months	73.4	22,900	67.8	18,400	37.3	11,600
73–120 months	76.8	26,200	72.8	22,700	37.3	9,500
More than 120 months	72.4	27,600	67.4	24,600	37.1	9,200

¹ Nonfederal loans include state and private loans. Of first-time bachelor’s degree recipients who borrowed nonfederal loans, 95.4 percent borrowed private loans.

² Estimates for private nonprofit 4-year and private nonprofit 4-year non-doctorate-granting institutions include 0.02 percent of graduates who attained their bachelor’s degree from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.09 percent of graduates who attained their degree from a for-profit less-than-4-year institution.

³ “HBCU” indicates historically Black college or university.

⁴ “HHE” indicates High Hispanic Enrollment Institutions whose full-time equivalent undergraduate enrollment was at least 25 percent Hispanic according to Fall 2007 enrollment data in the Integrated Postsecondary Education Data System. Includes only public and private nonprofit institutions. High Hispanic enrollment may be one factor in determining the eligibility of an institution for some federal grant, contract, or benefit programs under, for example, the Title V program under the Higher Education Act.

⁵ Includes private nonprofit 2-year, for-profit 2-year, and all less-than-2-year institutions.

NOTE: Parent PLUS loans are not included in federal or total borrowing estimates. This table excludes the 7.0 percent of 2007–08 bachelor’s degree recipients who had earned another bachelor’s degree prior to 2007–08. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 5. POSTBACCALAUREATE ENROLLMENT: Percentage distribution of 2007–08 first-time bachelor’s degree recipients by highest degree program enrollment after bachelor’s degree attainment, demographic, employment, and enrollment characteristics: 2009

Demographic, employment, and enrollment characteristics	Highest degree program enrollment after bachelor’s degree					
	Had not enrolled	Certificate, associate’s, or bachelor’s degree ¹	Master’s degree	Post-bachelor’s or post-master’s certificate	Doctoral degree	First-professional degree ²
Total	70.1	3.1	18.2	2.4	1.7	4.5
Sex						
Male	71.8	2.7	15.9	2.3	2.0	5.4
Female	68.9	3.4	19.9	2.4	1.5	3.8
Race/ethnicity ³						
White	71.3	2.7	17.4	2.2	1.9	4.5
Black	63.9	5.0	24.6	2.8	0.3 !	3.3
Hispanic	69.7	3.7	18.3	4.2	0.8 !	3.4
Asian	65.0	4.3	17.5	1.5 !	3.0 !	8.7
Other	69.4	3.4 !	21.5	‡	1.4 !	2.1 !
Age at bachelor’s degree completion						
23 or younger	67.9	3.1	18.5	2.4	2.2	5.8
24–29	75.5	3.5	15.4	2.4	0.8 !	2.3
30 or older	73.3	2.4	20.6	2.1	0.5 !	1.0 !
Highest education attained by either parent ⁴						
High school or less	72.8	3.6	18.4	2.3	0.6	2.3
Some postsecondary education	71.9	3.6	17.9	2.3	1.0	3.2
Bachelor’s degree	71.0	2.6	18.2	2.4	1.7	4.1
Graduate or first-professional degree	65.9	3.0	18.3	2.5	3.0	7.3
Bachelor’s degree major ⁵						
STEM major ⁶	65.6	2.8	15.4	2.1	5.0	9.2
Computer and information sciences	86.6	0.2 !	9.3	‡	‡	‡
Engineering and engineering technology	74.5	2.0 !	14.8	‡	2.8 !	4.9
Biological and physical sciences, science technology, mathematics, and agricultural sciences	50.1	4.5	18.3	3.1	8.0	16.1
General studies and other ⁷	65.9	3.7 !	19.7	5.8	‡	3.8 !
Social sciences	60.6	4.4	22.7	2.4	2.4	7.5
Humanities	61.4	4.4	22.2	4.5	1.7 !	5.8
Health care fields	70.9	3.4	19.2	1.4 !	2.5 !	2.7
Business	80.1	2.3	13.6	1.6	‡	2.1
Education	71.0	1.4 !	24.5	2.3	‡	0.7 !
Other applied ⁸	76.2	3.0	16.4	2.1	0.5 !	1.9
Bachelor’s degree institution sector ⁹						
Public 4-year	69.3	3.4	18.7	2.5	1.4	4.7
Private nonprofit 4-year	70.2	2.5	18.2	2.3	2.5	4.4
For-profit 4-year	80.1	4.0 !	12.5	‡	‡	2.0 !
Received bachelor’s degree from HBCU ¹⁰						
Yes	57.5	‡	27.0	‡	‡	‡
No	70.3	3.0	18.1	2.4	1.7	4.5
Ever attended an HHE institution ¹¹						
Yes	69.5	3.6	18.8	3.6	1.0 !	3.4
No	70.2	3.0	18.1	2.2	1.8	4.6

See notes at end of table.

Table 5. POSTBACCALAUREATE ENROLLMENT: Percentage distribution of 2007–08 first-time bachelor's degree recipients by highest degree program enrollment after bachelor's degree attainment, demographic, employment, and enrollment characteristics: 2009—Continued

Demographic, employment, and enrollment characteristics	Highest degree program enrollment after bachelor's degree					
	Had not enrolled	Certificate, associate's, or bachelor's degree ¹	Master's degree	Post-bachelor's or post-master's certificate	Doctoral degree	First-professional degree ²
Marital status and dependents in 2009 ¹²						
Unmarried with no dependents	67.5	3.2	19.0	2.4	2.2	5.7
Unmarried with dependents	69.4	4.4	22.0	1.9 !	‡	1.5 !
Married with no dependents	77.3	2.7	14.3	2.5	0.7	2.5
Married with dependents	74.5	2.6	18.0	2.1	0.9 !	1.8 !
Employment and enrollment status in 2009 ¹³						
One job						
Full time	81.5	2.1	12.5	2.3	0.4	1.3
Part time	50.4	4.6	32.0	3.2	4.7	5.1
Multiple jobs	69.0	3.6	21.3	2.3	1.1	2.7
Unemployed	62.9	5.8	23.1	2.8	1.1 !	4.2
Out of the labor force						
Enrolled in a degree program	#	5.2	34.7	1.0 !	11.2	47.9
Not enrolled in a degree program	72.4	2.2 !	11.2	‡	4.2 !	8.2

Rounds to zero.

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

‡ Reporting standards not met.

¹ Refers to certificates earned at the undergraduate level.

² First-professional degree programs include medicine or osteopathic medicine (M.D. or D.O.), chiropractic (D.C. or D.C.M.), dentistry (D.D.S. or D.M.D.), optometry (O.D.), pharmacy (Pharm.D.), podiatry (Pod.D. or D.P.M.), veterinary medicine (D.V.M.), law (LL.B. or J.D.), and theology (M.Div., M.H.L., or B.D.).

³ Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Pacific Islander, Native Hawaiian, and graduates having origins in two or more races or a race not listed. Race categories exclude Hispanic origin.

⁴ Excludes the 1.2 percent of graduates who did not know either parent's highest level of education.

⁵ Graduates with multiple majors were classified by the first major field of study reported.

⁶ Includes science, technology, engineering, and mathematics.

⁷ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.

⁸ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

⁹ Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degree from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.09 percent of graduates who attained their degree from a for-profit less-than-4-year institution.

¹⁰ "HBCU" indicates historically Black college or university.

¹¹ "HHE" indicates High Hispanic Enrollment Institutions whose full-time equivalent undergraduate enrollment was at least 25 percent Hispanic according to Fall 2007 enrollment data in the Integrated Postsecondary Education Data System. Includes only public and private nonprofit institutions. High Hispanic enrollment may be one factor in determining the eligibility of an institution for some federal grant, contract, or benefit programs under, for example, the Title V program under the Higher Education Act.

¹² Unmarried includes separated graduates.

¹³ Graduates who worked 35 or more hours per week are defined as working full time; those who were not working but looking for work are defined as unemployed; and those who were not working and not looking for work are defined as out of the labor force.

NOTE: This table excludes the 7.0 percent of 2007–08 bachelor's degree recipients who had earned another bachelor's degree prior to 2007–08. Enrollment includes enrollment that had already occurred as of the interview date or that was scheduled to begin in the 2009–10 academic year following the interview date. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 6. POSTBACCALAUREATE EMPLOYMENT: Percentage distribution of 2007–08 first-time bachelor's degree recipients by employment status, demographic, and enrollment characteristics: 2009

Demographic and enrollment characteristics	Employed ¹			Unemployed ²	Out of the labor force ³	
	Employed	One full-time job	One part-time job			Multiple jobs
Total	84.1	56.9	13.6	13.5	9.0	6.9
Sex						
Male	83.7	60.5	11.3	12.0	9.9	6.3
Female	84.4	54.4	15.4	14.6	8.3	7.4
Race/ethnicity ⁴						
White	85.4	57.5	13.3	14.6	7.6	7.0
Black	82.2	56.6	14.1	11.5	12.8	4.9
Hispanic	82.3	57.6	15.4	9.3	12.2	5.5
Asian	70.8	48.5	14.7	7.6	16.0	13.2
Other	88.5	59.3	12.9	16.3	7.1	4.4
Age at bachelor's degree completion						
23 or younger	83.6	54.8	14.9	13.9	8.4	8.0
24–29	84.0	58.7	11.8	13.5	10.8	5.1
30 or older	86.8	65.0	10.2	11.7	9.1	4.1
Bachelor's degree major ⁵						
STEM major ⁶	81.4	60.4	12.1	8.8	7.4	11.2
Computer and information sciences	88.9	71.4	6.0 !	11.5	6.6	4.5 !
Engineering and engineering technology	88.0	72.5	8.7	6.8	7.2	4.8
Biological and physical sciences, science technology, mathematics, and agricultural sciences	73.0	46.3	17.3	9.4	7.9	19.0
General studies and other ⁷	82.3	51.2	15.3	15.8	9.8	7.9
Social sciences	79.2	47.0	19.0	13.1	10.9	10.0
Humanities	79.7	40.8	19.3	19.7	11.3	9.0
Health care fields	86.9	58.9	14.7	13.3	6.1	7.0
Business	88.4	71.2	8.8	8.4	8.5	3.1
Education	90.8	54.6	11.8	24.4	4.8	4.5
Other applied ⁸	84.6	55.7	13.0	15.8	10.9	4.6
Bachelor's degree institution sector ⁹						
Public 4-year	83.8	56.5	14.2	13.1	9.3	6.9
Private nonprofit 4-year	84.0	56.3	13.2	14.5	8.2	7.8
For-profit 4-year	88.7	67.9	9.0	11.8	9.3	2.0 !
Received bachelor's degree from HBCU ¹⁰						
Yes	72.9	52.1	13.4	7.3	18.7	8.5 !
No	84.3	57.0	13.7	13.6	8.8	6.9

See notes at end of table.

Table 6. POSTBACCALAUREATE EMPLOYMENT: Percentage distribution of 2007–08 first-time bachelor's degree recipients by employment status, demographic, and enrollment characteristics: 2009—Continued

Demographic and enrollment characteristics	Employed ¹			Unemployed ²	Out of the labor force ³	
	Employed	One full-time job	One part-time job			Multiple jobs
Ever attended an HHE institution ¹¹						
Yes	81.4	57.1	14.8	9.5	13.1	5.5
No	84.5	56.9	13.5	14.1	8.4	7.1
Marital status and dependents in 2009 ¹²						
Unmarried with no dependents	82.7	53.1	14.8	14.7	9.8	7.5
Unmarried with dependents	87.6	60.8	12.5	14.3	9.4	3.1
Married with no dependents	88.4	65.0	11.6	11.8	6.7	4.9
Married with dependents	84.3	65.2	10.4	8.7	7.1	8.5

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

¹ Graduates who worked 35 or more hours per week are defined as working full time.

² Graduates were defined as unemployed if they were not working but looking for work.

³ Graduates were defined as out of the labor force if they were not working and not looking for work.

⁴ Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Pacific Islander, Native Hawaiian, and graduates having origins in two or more races or a race not listed. Race categories exclude Hispanic origin.

⁵ Graduates with multiple majors were classified by the first major field of study reported.

⁶ Includes science, technology, engineering, and mathematics.

⁷ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.

⁸ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

⁹ Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degree from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.09 percent of graduates who attained their degree from a for-profit less-than-4-year institution.

¹⁰ "HBCU" indicates historically Black college or university.

¹¹ "HHE" indicates High Hispanic Enrollment Institutions whose full-time equivalent undergraduate enrollment was at least 25 percent Hispanic according to Fall 2007 enrollment data in the Integrated Postsecondary Education Data System. Includes only public and private nonprofit institutions. High Hispanic enrollment may be one factor in determining the eligibility of an institution for some federal grant, contract, or benefit programs under, for example, the Title V program under the Higher Education Act.

¹² Unmarried includes separated graduates.

NOTE: This table excludes the 7.0 percent of 2007–08 bachelor's degree recipients who had earned another bachelor's degree prior to 2007–08. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 7. POSTBACCALAUREATE EARNED INCOME: Median and percentage distribution of 2007–08 first-time bachelor’s degree recipients who were employed full time by earned income, demographic, and enrollment characteristics: 2009

Demographic and enrollment characteristics	Earned income in 2009 job ¹				
	Median	Less than \$27,457	\$27,457–\$36,000	\$36,001–\$49,200	\$49,201 or more
Total	\$36,000	25.0	25.2	24.8	25.0
Sex					
Male	40,000	20.5	21.1	23.2	35.1
Female	34,600	28.6	28.4	26.1	16.8
Race/ethnicity ²					
White	36,400	25.2	24.7	25.0	25.2
Black	35,400	24.9	27.7	22.7	24.7
Hispanic	35,400	25.0	28.0	26.3	20.6
Asian	41,000	18.3	21.2	26.9	33.6
Other	34,000	31.3	27.0	20.4	21.4
Age at bachelor’s degree completion					
23 or younger	35,000	27.9	26.6	25.3	20.2
24–29	35,600	24.1	28.2	24.0	23.7
30 or older	47,000	13.7	15.2	23.9	47.1
Bachelor’s degree major ³					
STEM major ⁴	48,000	17.1	15.4	19.5	48.1
Computer and information sciences	50,000	12.3	13.2	23.4	51.1
Engineering and engineering technology	54,400	7.9	6.5	13.3	72.3
Biological and physical sciences, science technology, mathematics, and agricultural sciences	33,900	31.8	28.1	25.0	15.2
General studies and other ⁵	34,500	29.6	32.7	22.5	15.1
Social sciences	31,500	35.7	29.8	22.5	12.1
Humanities	30,000	43.8	27.5	20.4	8.2
Health care fields	44,900	10.3	15.8	34.8	39.1
Business	40,000	18.7	21.7	26.9	32.6
Education	34,000	22.3	42.6	31.3	3.8
Other applied ⁶	31,200	34.0	32.1	24.0	9.9

See notes at end of table.

Table 7. POSTBACCALAUREATE EARNED INCOME: Median and percentage distribution of 2007–08 first-time bachelor’s degree recipients who were employed full time by earned income, demographic, and enrollment characteristics: 2009—Continued

Demographic and enrollment characteristics	Median	Earned income in 2009 job ¹			
		Less than \$27,457	\$27,457–\$36,000	\$36,001–\$49,200	\$49,201 or more
Occupation in 2009					
Business/management occupations	\$42,000	11.6	20.2	28.8	39.4
Life science occupations	29,000	33.6	42.0	19.8	4.6 !
Math, computer and physical science occupations	50,000	9.9	10.6	27.9	51.6
Engineers	54,700	3.3 !	7.5	15.9	73.4
Nurses	46,800	‡	13.1	42.0	44.3
Other health care occupations ⁷	31,700	37.7	22.8	19.7	19.8
PK-12 educators	34,900	17.7	43.5	35.6	3.2
Social services professionals	30,000	37.8	42.3	16.0	3.9 !
Sales occupations	34,900	31.1	25.2	28.1	15.7
Business support/administrative assistance	30,000	40.7	34.0	18.1	7.2
Other white collar occupations ⁸	30,000	41.8	24.3	22.1	11.9
Other occupations ⁹	31,000	42.6	21.1	16.7	19.7
Enrollment status in 2009					
Enrolled in undergraduate program	30,400	44.0	23.5 !	18.4 !	‡
Enrolled in graduate program	35,900	26.9	25.0	26.9	21.1
Not enrolled	36,300	24.6	25.2	24.7	25.5

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

‡ Reporting standards not met.

¹ Dollar amounts represent quarters of the earned income distribution for full-time employed graduates, i.e., those who earned less than \$27,457 were the 25 percent of graduates with the lowest earned income, those who earned \$27,457–\$36,000 were the 25.2 percent of graduates with lower middle income, those who earned \$36,001–\$49,200 were the 24.8 percent of graduates with upper middle income, and those who earned \$49,201 or more were the 25 percent of graduates with the highest income. The cutoff points for the middle two quarters yielded the closest possible approximations to quarters of the sample.

² Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Pacific Islander, Native Hawaiian, and graduates having origins in two or more races or a race not listed. Race categories exclude Hispanic origin.

³ Students with multiple majors were classified by the first major field of study reported.

⁴ Includes science, technology, engineering, and mathematics.

⁵ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.

⁶ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

⁷ Includes healthcare practitioners and technical occupations (except registered nurses, emergency medical technicians/paramedics, and licensed practical/vocational nurses), and healthcare support occupations.

⁸ Includes social scientists and related workers (except clinical, counseling, and school psychologists); lawyers, judges, and related workers; education, training, and library occupations (except primary, secondary, and special education school teachers); arts, design, entertainment, sports, and media occupations (except commercial and industrial designers, fashion designers, and floral designers); social science research assistants; and law clerks.

⁹ Includes drafters, protective service occupations, food preparation and serving-related occupations, personal care and service occupations (except supervisors, animal care and service workers, and entertainment attendants and related workers); farming, fishing, and forestry occupations; construction and extraction occupations; installation, maintenance, and repair occupations; production occupations, transportation and material moving occupations (except air transportation workers), military specific occupations, farm/ranch/other agricultural managers, farmers and ranchers, cartographers and photogrammetrists, surveyors, athletes and sports competitors, coaches and scouts, umpire/referee/other sports officials, and emergency medical technicians/paramedics.

NOTE: This table excludes the 7.0 percent of 2007–08 bachelor’s degree recipients who had earned another bachelor’s degree prior to 2007–08 and, among all first-time bachelor’s degree recipients, the 42.1 percent of graduates who were not employed or were employed part time or in multiple jobs. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

Table 8. K–12 TEACHING: Percentage distribution of 2007–08 first-time bachelor’s degree recipients by K–12 teaching experience, demographic, enrollment, and teaching characteristics: 2009

Demographic, enrollment, and teaching characteristics	K–12 teaching experience as of 2009				
	Taught or started to teach before completing bachelor’s	Started teaching since completing bachelor’s	Had prepared to teach but had not taught	Considering teaching but had not taught or prepared to teach	Had not prepared for teaching or taught, and not considering teaching
Total	2.4	7.9	4.7	9.5	75.5
Sex					
Male	1.1	4.6	3.2	9.3	81.8
Female	3.3	10.4	5.7	9.7	71.0
Race/ethnicity ¹					
White	2.4	8.7	5.0	8.4	75.6
Black	2.0	6.5	3.1	16.2	72.2
Hispanic	3.5	5.5	5.7	13.1	72.2
Asian	1.4 †	2.9	1.7 †	7.6	86.4
Other	‡	10.0	4.2 †	9.7	74.3
Bachelor’s degree major ²					
STEM major ³	1.4	4.1	2.3	6.9	85.3
Computer and information sciences	‡	‡	‡	9.0	85.4
Engineering and engineering technology	‡	‡	‡	5.7	92.0
Biological and physical sciences, science tech- nology, mathematics, and agricultural sciences	2.0	7.0	4.0	7.2	79.8
General studies and other ⁴	3.3 †	8.3	8.7	7.4	72.3
Social sciences	1.9	5.0	4.2	11.0	77.9
Humanities	2.2	10.4	9.4	12.2	65.8
Health care fields	‡	1.4 †	2.3 †	8.0	88.0
Business	0.8 †	1.2	1.6	10.3	86.1
Education	14.1	50.8	16.0	3.7	15.4
Other applied ⁵	1.0	3.6	3.0	11.5	80.9
Considered teaching in 2007–08					
Yes	†	32.1	16.2	13.6	38.0
No	†	2.7	2.4	9.0	85.9

† Not applicable.

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

‡ Reporting standards not met.

¹ Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Pacific Islander, Native Hawaiian, and graduates having origins in two or more races or a race not listed. Race categories exclude Hispanic origin.² Graduates with multiple majors were classified by the first major field of study reported.³ Includes science, technology, engineering, and mathematics.⁴ Includes liberal arts and sciences; general studies and humanities; multi/interdisciplinary studies; other; basic skills; citizenship activities; health-related knowledge and skills; interpersonal and social skills; leisure and recreational activities; personal awareness and self-improvement; and high school/secondary diplomas and certificates.⁵ Includes architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.NOTE: This table excludes the 7.0 percent of 2007–08 bachelor’s degree recipients who had earned another bachelor’s degree prior to 2007–08. Detail may not sum to totals because of rounding. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011236>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Study (B&B:08/09).

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Appendix A—B&B:08/09 Technical Notes and Methodology

Overview

The Baccalaureate and Beyond Longitudinal Study (B&B) is one of several National Center for Education Statistics (NCES)-sponsored studies developed to address the need for nationally representative data on key postsecondary education issues. These studies explore topics related to postsecondary access, enrollment, curricula, attainment, and education's social impact.

B&B is a follow-up to the National Postsecondary Student Aid Study (NPSAS) and focuses exclusively on students completing requirements for their baccalaureate degrees during the NPSAS academic year.¹ Once these students are identified, B&B follows them to monitor their progress. B&B:93 recontacted 1992–93 graduates 1, 4, and 10 years after graduation and B&B:2000 recontacted 1999–2000 graduates 1 year after graduation. B&B, therefore, focuses on issues relevant to graduates such as workforce participation, enrollment and persistence in additional education, and income and debt repayment.

The 2008 Baccalaureate and Beyond (B&B:08) cohort is the third cohort of graduates to be tracked by NCES since 1993. The 2008–09 Baccalaureate and Beyond (B&B:08/09) wave of data collection is the first B&B follow-up to the 2007–08 National Postsecondary Student Aid Study (NPSAS:08). B&B:08 will track baccalaureate recipients identified in NPSAS:08 through two follow-up data collections conducted during the first and fourth years after the base-year study.

As with previous B&B studies, B&B:08/09 includes a multi-mode student interview component that collects information on students' education and employment since their graduation. For the second time in the B&B series of studies, B&B:08/09 includes a postsecondary transcript component that provides researchers with additional institution- and student-level data for analysis.

¹ NPSAS is a nationally representative, cross-sectional survey of postsecondary students that has been conducted at regular 3- to 4- year intervals since 1986. For more information, see the *NPSAS:08 Full Scale Methodology Report* (Cominole et al. 2010) (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011188>).

Data Sources for B&B:08/09

Data for B&B:08/09 were obtained from the following sources:

- Student interviews: Data collected directly from sampled students via web, telephone, and field interviews.
- Student records: Data from financial aid and registrar records at the institutions attended in 2007–08. These data were entered at the institution by institution personnel or field data collectors using a computer-assisted data entry (CADE) program or directly downloaded to a data file.
- Integrated Postsecondary Education Data System (IPEDS): U.S. Department of Education, National Center for Education Statistics (NCES) database of descriptive information about individual postsecondary institutions.
- Central Processing System (CPS): U.S. Department of Education database of federal financial aid applications.
- National Student Loan Data System (NSLDS): U.S. Department of Education database of federal Title IV loans and Pell grants.
- SAT: Student SAT data from the College Board.
- ACT: Student ACT data from ACT.
- National Student Clearinghouse (NSC): A central repository and single point of contact for the collection of postsecondary enrollment, degree, and certificate records from participating postsecondary institutions.
- Student transcript: Student enrollment and achievement data collected from postsecondary institutions as part of the B&B:08/09 Postsecondary Education Transcript Study (B&B:08/09 PETS).
- College catalog: Institutional- and course-level data collected from postsecondary institution materials as part of B&B:08/09 PETS.

Thus, B&B:08/09 includes some data that were originally collected for NPSAS:08. Exhibit A-1 indicates whether a data source was new for the given study (N), carried over from the previous round without being refreshed (CO), or carried over from the previous round but refreshed (R).

Exhibit A-1. Data sources for NPSAS:08 and B&B:08/09

Data source	NPSAS:08	B&B:08/09
Student interviews	N	N
Student records	N	CO
Integrated Postsecondary Education Data System (IPEDS)	N	CO
Central Processing System (CPS)	N	R
National Student Loan Data System (NSLDS)	N	R
SAT	N	CO
ACT	N	CO
National Student Clearinghouse (NSC)		N
Student postsecondary transcripts		N
College catalogs		N

NOTE: N = New data source, CO = Data carried over from previous round and not refreshed, R = Data carried over from previous round and refreshed.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08), 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Sample Design

Identification of the B&B:08/09 sample required a multi-stage process that began with selection of the NPSAS:08 sample of institutions and was followed by selection of students within institutions. The final stage confirmed the B&B:08 cohort eligibility of sample members identified via NPSAS:08 as baccalaureate recipients during the 2007–08 academic year.

Base-Year Study (NPSAS:08)

To be eligible for inclusion in the B&B:08 cohort, students must have been part of the student universe at an institution included in the NPSAS:08 institution universe. The definitions of the NPSAS:08 institution and student universes are presented below.

Institution Universe for NPSAS:08

To be eligible for the NPSAS:08 sample, institutions were required to have met five criteria during the 2007–08 academic year. They must have

- been eligible to distribute Title IV funds;
- offered an educational program designed for persons who have completed a high school 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 persons other than the employees or members of the company or group (e.g., union) that administers the institution; and
- been located in one of the 50 states, the District of Columbia, or Puerto Rico.

Student Universe for NPSAS:08

Students eligible for NPSAS:08 were those who were enrolled in eligible institutions as defined above and who satisfied the following eligibility requirements.

- They were enrolled in an academic program, at least one course for credit that could be applied toward fulfilling the requirements for an academic degree, or an occupational or vocational program that required at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award.
- They were not concurrently or solely enrolled in high school, or in a General Educational Development (GED) or other high school completion program.

Institution Sample for NPSAS:08

NPSAS:08 constructed its institution sampling frame from the IPEDS:2004–05 Institutional Characteristics, Fall Enrollment, and Completions files. The institutions on the sampling frame were partitioned into 46 institutional strata based on institutional level and control, highest level of offering, and proportion of bachelor’s degrees awarded in education.² NPSAS:08 also includes state-representative undergraduate student samples for four degree-granting institutional sectors (public 4-year; public 2-year; private nonprofit 4-year; and private for-profit 4-year) in six states: California, Georgia, Illinois, Minnesota, New York, and Texas.³

Institutions were selected using Chromy’s sequential probability minimum replacement (PMR) sampling algorithm (Chromy 1979), which is similar to systematic sampling. This algorithm led to the selection of institutions with probabilities proportional to a composite measure of size based on expected enrollment. Initially, a sample of about 1,630 institutions was selected in fall 2006 so

² The proportion of bachelor’s degrees awarded in education is used to ensure sufficient numbers of sample students receiving a bachelor’s degree in education. This is a dichotomous variable with categories of “high education” and “low education.” The high education category includes the 20 percent of institutions with the highest proportions of their baccalaureate degrees awarded in education within institutional level, control, and highest level of offering (based on the most recent IPEDS Completions file). The remaining 80 percent of the institutions are classified as low education.

³ These six states were selected based on (1) the size of undergraduate enrollment in the four sectors; (2) prior inclusion in the NPSAS:04 12-state sample with high levels of cooperation and participation in that survey; and (3) unique or recently changed tuition and state grant policies that provided opportunities for comparative research and analysis.

that these institutions could be notified of their selection early and to allow a separate field test sample to be selected from the remaining institutions on the sampling frame. In summer 2007, the sample was refreshed using the IPEDS:2005–06 Institutional Characteristics, Fall Enrollment, and Completions files to include any newly eligible institutions within the sampling frame to ensure that the sample was representative of the current population. This process added about 10 institutions to the sample. In fall 2007, the decision was made to include state-representative undergraduate student samples for four degree-granting institutional sectors (public 4-year; public 2-year; private nonprofit 4-year; and private for-profit 4-year) in the six states listed above. To accomplish this, a supplemental sample was drawn and added to the existing sample. The final NPSAS:08 sample included 1,960 institutions.

The next step of the institution sampling process involved determining the eligibility of the sample institutions. Of the total institution sample ($n = 1,960$),⁴ about 1,940 (99 percent) were found to be eligible to participate in NPSAS:08. Approximately 1,730 institutions (a weighted response rate of 90 percent among the eligible sample⁵) provided student enrollment lists for use in selecting the student sample. Table A-1 shows the number of institutions that were sampled, the number of eligible institutions, and the number and unweighted and weighted percentages of institutions providing enrollment lists, by institutional characteristics.

⁴ Reported numbers have been rounded to ensure the confidentiality of data. As a result, reported percentages (based on unrounded numbers) may differ somewhat from those that would result from these rounded numbers.

⁵ The weight described here is a base weight.

Table A-1. Counts of sampled and eligible institutions and enrollment list participation rates for NPSAS:08, by institutional characteristics: 2007–08

Institutional characteristics ¹	Sampled institutions	Eligible institutions	Institutions providing lists		
			Number	Unweighted percent	Weighted percent ²
All institutions	1,960	1,940	1,730	89.0	90.1
Institutional level					
Less-than-2-year	130	120	100	82.6	83.2
2-year	570	560	510	89.7	90.7
4-year non-doctorate-granting	700	700	630	89.7	91.9
4-year doctorate-granting	560	560	500	88.8	88.6
Institutional control					
Public	960	960	880	91.9	91.2
Private nonprofit	650	640	560	87.4	86.7
For-profit	350	340	290	83.6	88.2
Sector of institution					
Public less-than-2-year	20	20	20	90.9	93.2
Public 2-year	450	450	410	91.7	91.2
Public 4-year non-doctorate-granting	200	200	190	94.4	95.4
Public 4-year doctorate-granting	290	290	260	90.7	89.2
Private nonprofit less-than-4-year	20	20	20	84.2	84.7
Private nonprofit 4-year non-doctorate-granting	370	370	320	88.2	87.9
Private nonprofit 4-year doctorate-granting	260	260	230	86.5	85.9
For-profit less-than-2-year	100	90	70	80.4	81.0
For-profit 2-year or more	260	250	210	84.8	90.2

¹ Institutional characteristics are based on data from the sampling frame which was formed from the 2004–05 IPEDS and freshened from the 2005–06 IPEDS.

² The weight described in this column is a base weight.

NOTE: Percentages are based on the unrounded count of eligible institutions within the row under consideration. Detail may not sum to totals because of rounding. IPEDS = Integrated Postsecondary Education Data System.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Student Sample for NPSAS:08

Sample institutions provided lists of their eligible students enrolled during the 2007–08 academic year, and these lists served as the frame for selecting the student sample. Student enrollment lists were sampled on a flow basis, as they were received, using equal probability stratified systematic sampling.

For each student sampling stratum, the enrollment list was sampled at a rate designed to provide approximately equal student-level probabilities. To more accurately estimate the overall sample yield, student sampling rates were revised after sufficient lists had been received. The final sample included 137,800 students. Approximately

96 percent of the final sample ($n = 132,800$) was determined to be eligible for NPSAS. On the completion of data collection, 96 percent of the eligible sample ($n = 127,700$) was determined to have sufficient key data to meet the definition of a study respondent. A study respondent was defined as any sample member who was determined to be eligible for the study and, minimally, had valid data from any data source for the following:

- student type (undergraduate or graduate/first professional);
- date of birth or age;
- gender; and
- at least 8 of the following 15 variables:
 - dependency status;
 - marital status;
 - any dependents;
 - income;
 - expected family contribution (EFC);
 - degree program;
 - class level;
 - baccalaureate status;
 - months enrolled;
 - tuition;
 - received federal aid;
 - received non-federal aid;
 - student budget;
 - race; and
 - parent education.

Table A-2 shows the number of students sampled, the number of eligible students, and the unweighted and weighted percentages of study respondents, by institutional characteristics.

Table A-2. Counts of sampled and eligible students and response rates for NPSAS:08, by institutional characteristics: 2007–08

Institutional characteristics ²	Sampled students	Eligible students ³	Study respondents ¹	
			Unweighted percent	Weighted percent ⁴
All students	137,800	132,800	96.2	95.7
Institutional level				
Less-than-2-year	8,820	7,950	95.0	96.7
2-year	43,460	40,770	93.3	92.5
4-year non-doctorate-granting	37,930	37,140	97.8	97.6
4-year doctorate-granting	47,590	46,940	97.6	97.6
Institutional control				
Public	87,470	84,240	95.3	94.9
Private nonprofit	32,760	31,950	97.7	97.3
For-profit	17,570	16,610	97.6	98.5
Sector of institution				
Public less-than-2-year	1,730	1,480	90.0	88.9
Public 2-year	39,340	37,010	92.8	92.2
Public 4-year non-doctorate-granting	16,120	15,850	98.0	98.1
Public 4-year doctorate-granting	30,280	29,910	97.3	97.4
Private nonprofit less-than-4-year	2,080	1,790	97.0	97.7
Private nonprofit 4-year non-doctorate-granting	14,200	13,930	97.3	96.8
Private nonprofit 4-year doctorate-granting	16,480	16,230	98.0	97.8
For-profit less-than-2-year	6,610	6,050	96.1	97.6
For-profit 2-year or more	10,960	10,560	98.5	98.7

¹ A study respondent is defined as any eligible sample member for whom sufficient key data were obtained from one or more sources, including student interview, institutional records, and the U.S. Department of Education's Central Processing System (CPS).

² Institutional characteristics are based on data from the sampling frame formed from IPEDS:2004–05 and refreshed from IPEDS:2005–06.

³ Sample member eligibility was determined during the student interview or from institutional records in the absence of a student interview.

⁴ The weight described in this column is a base weight.

NOTE: Percentages are based on the unrounded count of eligible students within the row under consideration. Details may not sum to totals because of rounding. IPEDS = Integrated Postsecondary Education Data System.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

First Follow-Up Study (B&B:08/09)

The primary task of the B&B:08/09 sample definition process was to confirm or reject a potential respondent's baccalaureate status.

Institutions were asked during NPSAS:08 to identify students on the enrollment list who had received or were expected to receive a baccalaureate degree between

July 1, 2007, and June 30, 2008. NPSAS:08 oversampled potential baccalaureate recipients to allow for sufficient numbers to be included in B&B:08/09, and thus stratified them separately from other undergraduate students. Potential baccalaureate recipients and other undergraduate students were each divided into in-state and out-of-state strata because undergraduate in-state students were oversampled in the six states with state-representative samples.⁶ Among potential baccalaureate recipients, business majors were undersampled to ensure that the baccalaureate sample did not consist primarily of business majors. Additionally, science, technology, engineering, or mathematics majors; National Science and Mathematics Access to Retain Talent (SMART) grant recipients; and Academic Competitiveness Grant (ACG) recipients were oversampled to allow for sufficient numbers for analysis. Finally, institutions that awarded proportionally higher amounts of education majors were oversampled to ensure sufficient numbers for analysis.

B&B:08/09-eligible persons were individuals who completed requirements for a bachelor's degree from a NPSAS:08-eligible institution between July 1, 2007, and June 30, 2008, and were awarded their baccalaureate degree by the institution from which they were sampled no later than June 30, 2009. Eligibility for the B&B:08 full-scale cohort prior to the B&B:08/09 interview was based primarily on information obtained from the student's transcript. Lacking a transcript, eligibility was based on responses provided during the NPSAS:08 student interview. Without either the transcript or the interview, eligibility was based on the student's institutional record obtained through NPSAS:08 computer-assisted data entry (CADE) or the enrollment list provided by the NPSAS:08 institution at the time of student sampling. The National Student Clearinghouse (NSC) data on degree completion were used to identify eligible students but could not identify ineligible students with certainty. These data were used for stratification (see below). Table A-3 shows the distribution of the 25,050 NPSAS:08 sample members who were potentially eligible for membership in the B&B:08 cohort according to their NPSAS:08 interview, CADE, and/or enrollment list status.

⁶ In-state students were those whose permanent residence was in the same state as the NPSAS institution from which they were sampled. Out-of-state students were students whose permanent residence was not in the same state as the NPSAS institution from which they were sampled.

Table A-3. Distribution of the NPSAS:08 sample, by B&B:08/09 eligibility

B&B:08/09 eligibility	Number	Percent
Total potentially B&B:08/09 eligible	25,050	100.0
Baccalaureate receipt confirmed in NPSAS:08 interview	18,000	71.9
Baccalaureate receipt confirmed in student records	4,630	18.5
Listed as potential baccalaureate recipient	2,420	9.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08), 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Of the 18,000 students who completed the NPSAS:08 full-scale interview and were confirmed to be B&B:08/09 eligible, at the time of sampling about 83.6 percent (15,050) had a transcript that confirmed eligibility, 5.9 percent (1,060) were ineligible based on transcripts, and 10.5 percent (1,890) did not have a transcript. Table A-4 shows the transcript status of the B&B:08/09 sample with baccalaureate receipt confirmed in the NPSAS:08 interview.

Table A-4. Transcript status of the B&B:08/09 sample members with baccalaureate receipt confirmed in the NPSAS:08 interview

Transcript status	Number	Percent
Total	18,000	100.0
Confirmed B&B:08/09 eligible	15,050	83.6
Confirmed B&B:08/09 ineligible	1,060	5.9
No transcript	1,890	10.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) and 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Additionally, transcripts were requested for the 7,050 NPSAS:08 interview nonrespondents who were either confirmed in CADE to be degree candidates or listed by the NPSAS:08 sample institution as bachelor's degree candidates. Approximately 5,150 of these NPSAS:08 nonrespondents were not determined to be ineligible for B&B:08/09 based on transcript data. In order to have full population coverage of the B&B:08/09 sample, a subsample of 500 of these 5,150 NPSAS:08 interview nonrespondents was selected. The sample was selected to maximize eligibility. The 5,150 NPSAS:08 interview nonrespondents were stratified based on study respondent, transcript, NSC, and CADE statuses. Within each stratum the nonrespondents were sorted by institution sector to ensure representation of the sample. The sample was drawn within each stratum with probabilities proportional to the NPSAS:08 sampling weight, and within sector the nonrespondents were sorted by this weight. The sampling rates used in each stratum were different in order to maximize response and eligibility rates while also representing the various types of sample members.

Based on the B&B:08/09 field test results, the highest sampling rates were among students who were NPSAS:08 study respondents, were potentially eligible based on NSC or CADE, and were confirmed eligible by the transcript. The next highest sampling rates were among students who were NPSAS:08 study respondents, were potentially eligible based on the enrollment list but not based on NSC or CADE, and were confirmed eligible by the transcript. The third-highest sampling rates were among students who were NPSAS:08 study respondents, were potentially eligible based on NSC, CADE, or the enrollment list, but had no transcript, and among students who were not NPSAS:08 study respondents, were potentially eligible based on NSC, CADE, or the enrollment list, and were confirmed eligible by the transcript. The lowest sampling rates were among students who were not NPSAS:08 study respondents, were potentially eligible based on NSC, CADE, or the enrollment list, but had no transcript.⁷ Exhibit A-2 shows the distribution of the potential baccalaureate recipients without a NPSAS:08 interview and the subsample. These distributions are based on whether they were a NPSAS:08 study respondent, were confirmed eligible by the transcript or did not have a transcript, and were confirmed in NSC or CADE as being eligible.

⁷ The number of students who were not NPSAS:08 study respondents; were potentially eligible based on NSC, CADE, or the enrollment list; but had no transcript was small, so these students were combined into one stratum for sampling purposes.

Exhibit A-2. Eligible sample and subsample sizes of the NPSAS:08 potential baccalaureate recipients without a NPSAS:08 interview

NPSAS:08 study respondent	Transcript	National Student Clearinghouse (NSC)	Student records ¹	Number eligible	Sample size ²	Percent
Total				5,150	500	9.7
Yes	Yes	Yes	Yes	1,570	180	11.3
Yes	Yes	Yes	No	350	40	11.3
Yes	Yes	No	Yes	1,510	170	11.3
Yes	Yes	No	No	500	50	9.9
Yes	No	Yes	Yes	120	10	5.1
Yes	No	Yes	No	60	#	5.4
Yes	No	No	Yes	370	20	5.1
Yes	No	No	No	250	10	5.1
No	Yes	Yes	Yes	60	#	5.5
No	Yes	Yes	No	80	#	5.1
No	Yes	No	Yes	80	#	5.3
No	Yes	No	No	120	10	5.2
No	No	Yes	Yes	10	#	#
No	No	Yes	No	20	#	#
No	No	No	Yes	20	#	#
No	No	No	No	50	#	#

Rounds to zero.

¹ Students without a NPSAS:08 interview who were not identified as a potential baccalaureate recipient from student records were identified from the enrollment list.

² The last four rows of the table were combined for sampling, and the percentage of the eligibles who were sampled is 4.0 percent.

NOTE: Percentages are based on the unrounded number of eligible students. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) and 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Table A-5 shows the number of students sampled, the number of eligible students, and the unweighted and weighted response rates, by institutional control, for the student interview, transcripts, and the combined interview and transcript.

Table A-5. Counts of sampled and eligible students and response rates, by institutional control: 2009

	Sampled students	Eligible students	Unweighted response rate	Weighted response rate ²
Institutional control¹				
Student interview				
All students	18,500	17,160	87.7	78.3
Institutional control				
Public	10,810	9,910	87.5	79.1
Private nonprofit	6,750	6,360	88.2	77.9
For-profit	940	890	85.5	69.6
Student transcript				
All students	18,500	17,160	93.6	92.3
Institutional control				
Public	10,810	9,910	94.4	93.0
Private nonprofit	6,750	6,360	92.1	90.4
For-profit	940	890	96.3	96.3
Combined student interview and transcript³				
All students	18,520	17,060	82.2	73.1
Institutional control				
Public	10,830	9,840	82.8	74.4
Private nonprofit	6,750	6,330	81.2	71.2
For-profit	940	890	82.1	68.3

¹ Institutional control is based on data from the sampling frame formed from IPEDS:2004–05 and refreshed from IPEDS:2005–06.

² The weight described in this column is a base weight.

³ The sampled and eligible student counts for the combined student interview and transcript differ from the counts for the student interview and the student transcript due to perturbation.

NOTE: Percentages are based on the unrounded count of eligible students within the row under consideration. Details may not sum to totals because of rounding. IPEDS = Integrated Postsecondary Education Data System.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

B&B:08/09 Study Respondent Definition

A B&B:08/09 student interview respondent is defined as any sample member who was determined to be eligible for the study, was not deceased at the time of the B&B:08/09 data collection, and had a completed, partial, or abbreviated interview. A student transcript respondent is defined as any sample member who was determined to be eligible for the study, was not deceased at the time of the B&B:08/09 data collection, and had a transcript provided by the NPSAS:08 institution. A combined

student interview and transcript respondent was both an interview and a transcript respondent.

As shown in table A-5, of the 17,160 eligible sample students, the weighted interview response rate was 78 percent, the transcript weighted response rate was 92 percent, and the combined interview and transcript weighted response rate was 73 percent.

Perturbation

To protect the confidentiality of NCES data that contain information about specific individuals and to minimize disclosure risks, B&B:08/09 data were subject to perturbation procedures. Perturbation procedures, which have been approved by the NCES Disclosure Review Board, preserve the central tendency estimates but may result in slight increases in nonsampling errors.

Imputation

All variables with missing data used in this report, as well as those included in the related PowerStats data, have been imputed. The unweighted range of missingness across variables was 0 percent to 19 percent. Variables with missing values have been imputed singly or as part of a vector, (i.e., simultaneously imputed). The imputation procedures employed a three-step process for each variable, or vector of variables, with missing values. In the first step, missing values were deterministically, or logically, imputed. In the second step, imputation classes were created based on a prediction model or response propensity model, as appropriate, for the variable with missing data. Imputations were then processed independently within each class. In the third step, missing values were stochastically, or randomly, imputed. That is, the weighted sequential hot deck process was applied, whereby missing data from recipient cases were replaced with valid data from donor cases from the same imputation class.⁸

Variables with the lowest levels of missingness were imputed first, using variables that did not have any missing data in the construction of the imputation classes. Next, variables with increasing levels of missingness were imputed using variables that did not have any missing data and previously imputed variables in the construction of imputation classes. The order in which variables were imputed was also determined by the substantive nature of the variables. NPSAS:08 variables were imputed first and

⁸ The term *hot deck* refers to the fact that the set of potential donors comes from the same data set. In contrast, *cold deck* imputation refers to the fact that the donors come from an external data set or source.

were used to impute B&B:08/09 variables. The majority of variables with missing data were imputed sequentially, but depending on the levels and patterns of missing data, some variables requiring imputation were imputed simultaneously.

For some variables, deterministic imputation was used to ensure data consistency for legitimate skips and other explicitly defined relationships. That is, if a consistency relationship specified that the value of a known variable required a specific value of an imputed variable, the missing value was assigned the appropriate imputed value, based on the value of the known variable.

For all variables, the imputation classes were determined using subject matter expertise and a tree-based methodology. The tree-based methodology identifies variables associated with the variable that is being imputed. This step produced a number of imputation classes that contain sets of donors that were used to impute missing values belonging to recipients in that class. Next, the imputation classes were used as input to a SAS macro that implemented the weighted sequential hot deck procedure.⁹

Weighting

All estimates in this report were weighted to represent the target population described in the sample design section. The weights compensate for the unequal probability of selection of institutions and students in the NPSAS:08 sample. The weights also adjust for multiplicity¹⁰ at the institutional and student levels and unknown student eligibility for NPSAS:08.

Because the students in the B&B:08/09 sample are a subset of the NPSAS:08 sample, the B&B:08/09 weights were derived from the NPSAS:08 weights. The B&B:08/09 base weight is the product of the first seven NPSAS:08 weight components given in exhibit A-3.

⁹ For further details, see Cox (1980) and Iannacchione (1982).

¹⁰ After the 2008 National Postsecondary Student Aid Study (NPSAS:08) institution sample selection, it was determined that in some cases either (1) an institution had merged with another institution, or (2) student enrollment lists for two or more campuses were submitted as one combined student list. In these instances, the institution weights were adjusted for the joint probability of selection. Likewise, students who attended more than one institution during the NPSAS year also had multiple chances of selection. If it was determined from any source (the student interview, or the student loan files) that a student had attended more than one institution, then the student's weight was adjusted to account for multiple chances of selection.

The weight for the subsample of NPSAS:08 interview nonrespondents who were included in the B&B:08/09 sample was adjusted by the inverse of the subsampling fraction. Nonresponse and poststratification adjustments were also computed and are discussed in more detail in a following section. Poststratification was used to adjust the B&B:08/09 weights so that they matched NPSAS:08 weight sums and known population totals from IPEDS. The poststratification adjustment also included trimming and smoothing of the weights to reduce unequal weighting.

There are three analysis weights:

- student interview analysis weight – for analysis of only items directly from or derived from the interview;
- student transcript analysis weight – for analysis of only items directly from or derived from the transcript; and
- combined student interview and transcript analysis weight – for analysis of both items directly from or derived from the interview and items directly from or derived from the transcript.

All of the weight components for the three weights, including the probabilities of selection and adjustments, are summarized in exhibit A-3. These weights are the product of the appropriate weight components in the table.

Exhibit A-3. Summary of components of the B&B:08/09 analysis weights: 2009

Weight component	Purpose
All weights	
NPSAS:08 adjustments	
Institution sampling weight	Account for the institution's probability of selection
Institution multiplicity adjustment	Adjust the weights for institutions that had multiple chances of selection
Institution poststratification adjustment	Adjust the institution weights to match population enrollment totals to ensure population coverage
Institution nonresponse adjustment	Adjust the institution weights to compensate for nonresponding institutions
Student sampling weight	Account for the student's probability of selection
Student multiplicity adjustment	Adjust the weights for students who attended more than one institution
Student unknown eligibility adjustment	Adjust the weights of nonresponding NPSAS:08 students with unknown eligibility
B&B:08/09 adjustments	
Student subsampling adjustment	Adjust the weights of the subset of NPSAS:08 interview nonrespondents who were included in the B&B:08/09 sample
Student interview analysis weight	
Interview nonresponse adjustment	Adjust the weights to compensate for B&B:08/09 students who did not respond to the interview
Interview poststratification adjustment	Adjust the student weights to match NPSAS:08 weight sums and known population totals from IPEDS to ensure population coverage. Includes trimming and smoothing of the weights to reduce unequal weighting
Student transcript analysis weight	
Transcript nonresponse adjustment	Adjust the weights to compensate for B&B:08/09 students for whom a transcript was not collected
Transcript poststratification adjustment	Adjust the student weights to match NPSAS:08 weight sums and known population totals from IPEDS to ensure population coverage. Includes trimming and smoothing of the weights to reduce unequal weighting
Combined student interview and transcript analysis weight	
Transcript nonresponse adjustment	Adjust the weights to compensate for B&B:08/09 students who did not respond to the interview and for whom a transcript was not collected
Transcript poststratification adjustment	Adjust the student weights to match NPSAS:08 weight sums and known population totals from IPEDS to ensure population coverage. Includes trimming and smoothing of the weights to reduce unequal weighting

NOTE: All adjustments in the student interview, student transcript and combined weights are B&B:08/09 adjustments.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Quality of Estimates

Unit Response Rates and Bias Analysis

The bias in an estimated mean based on respondents, \bar{y}_R , is the difference between this mean and the target parameter, π (i.e., the mean that would be estimated if a complete census of the target population was conducted and everyone responded). This bias can be expressed as follows:

$$B(\bar{y}_R) = \bar{y}_R - \pi$$

The estimated mean based on nonrespondents, \bar{y}_{NR} , can be computed if data for the particular variable are available for most of the nonrespondents. The true target parameter, π , can be estimated for these variables as follows:

$$\hat{\pi} = (1 - \eta)\bar{y}_R + \eta\bar{y}_{NR}$$

where η is the weighted unit (or item) nonresponse rate. For the variables that are from the frame, rather than from the sample, π can be estimated without sampling error. The bias can then be estimated as follows:

$$\hat{B}(\bar{y}_R) = \bar{y}_R - \hat{\pi}$$

or equivalently:

$$\hat{B}(\bar{y}_R) = \eta(\bar{y}_R - \bar{y}_{NR})$$

This formula shows that the estimate of the nonresponse bias is the difference between the mean for respondents and nonrespondents multiplied by the weighted nonresponse rate. Nonresponse bias could come from a variety of sources, including failure of the institution to provide lists for NPSAS:08, student nonresponse to B&B:08/09, and item nonresponse to the B&B:08/09 interview.

Institution-Level Bias Analysis

An institution respondent is defined in NPSAS:08 as any sample institution for which a student list was received that was sufficient for selecting a sample.

Of the 1,940 eligible NPSAS:08 sample institutions, 1,730 were respondents (89 percent unweighted and 90 percent weighted). The institution weighted response rate is below 85 percent for two of the nine sectors of institutions (private nonprofit

less-than-4-year and private for-profit less-than-2-year institutions). The weighted response rates, by sector of institution, range from 81 percent for private for-profit less-than-2-year institutions to 95 percent for public 4-year non-doctoral institutions.

A nonresponse bias analysis was conducted during NPSAS:08 for the two sectors of institutions with a weighted response rate below 85 percent. However, these two sectors are irrelevant to B&B:08/09 because they do not include baccalaureate recipients. Interested readers can refer to the NPSAS:08 Methodology Report (Cominole et al. 2010) for more information regarding the institution bias analysis.

Student-Level Bias Analysis

As mentioned in the “Sample Design” section above, a NPSAS:08 study respondent was defined as any student sample member who is determined to be eligible for the study and has valid data from any source for a selected set of key analytical variables. While these were the minimal data requirements, the vast majority of study respondents had considerably more complete data.

Of the 132,800 NPSAS:08 eligible students, the unweighted and weighted study response rate was 96 percent. The weighted study response rate for students is above 85 percent overall, and for all institution sectors. The weighted study response rates by sector of institution range from 89 percent for students in public less-than-2-year institutions to 99 percent for students in private for-profit 2-year-or-more institutions. Therefore, a student-level nonresponse bias analysis for NPSAS:08 was not necessary for any sector of institution.

Three types of respondents were evaluated for B&B:

- student interview;
- student transcript; and
- combined student interview and transcript

Of 17,160 eligible sample students, the B&B:08/09 weighted interview response rate was 78 percent, the transcript weighted response rate was 92 percent, and the combined interview and transcript weighted response rate was 73 percent.¹¹ Since the weighted rate is less than 85 percent for those who responded to the interview and those with both an interview and transcript, a nonresponse bias analysis was conducted. The nonresponse bias was estimated for variables known for most

¹¹ The eligible student count for the combined student interview and transcript was 17,060 and differs from the count for the student interview and the student transcript due to perturbation.

respondents and nonrespondents. The variables are included on PowerStats and are listed below:

- institution sector;
- region;
- institution enrollment from IPEDS file (categorical);
- Pell Grant receipt (yes/no);
- Pell Grant amount (categorical);
- Stafford Loan receipt (yes/no);
- Stafford Loan amount (categorical);
- Parent Loan for Undergraduate Students (PLUS);
- federal aid receipt (yes/no);
- institutional aid receipt (yes/no);
- state aid receipt (yes/no); and
- any aid receipt (yes/no).

First, for the variables listed above, the nonresponse bias was estimated and tested to determine if the bias was significant at the 5 percent level. Second, nonresponse adjustments (see the weighting section of this appendix) were computed, and the variables listed above were included in the nonresponse models. Third, nonresponse bias analyses were performed to determine whether the nonresponse adjustments influenced bias. Fourth, poststratification adjustments were computed and combined with the nonresponse adjustments. Once the final weights (after nonresponse and poststratification adjustments) were computed, any remaining bias was estimated for the variables listed above and statistical tests were performed to check for remaining measurable nonresponse bias.

As shown in table A-6, some measurable bias remains after the student interview nonresponse and poststratification weight adjustments. Measurable bias was reduced after the nonresponse weighting adjustments for the variables known for respondents and nonrespondents. However, the poststratification adjustment to IPEDS and NPSAS:08 totals resulted in an increase in the measurable bias. The poststratification was necessary to match the baccalaureate counts in B&B:08/09 to known IPEDS counts and NPSAS:08 weighted estimates of federal aid receipt and to get the B&B:08/09 weights and estimates more in line with the NPSAS:08 weights and estimates for the B&B:08/09 students.

Table A-6. Summary of student interview nonresponse bias analysis, by sector of institution: 2009

Nonresponse bias statistics	Overall	Public	Private nonprofit	For-profit
Before weight adjustments				
Mean estimated relative bias	3.90	4.56	6.00	10.73
Median estimated relative bias	3.14	3.95	4.60	6.79
Percent of variable categories significantly biased	27.50	32.43	38.89	8.11
After nonresponse weight adjustments				
Mean estimated relative bias	0.26	3.62	6.35	22.62
Median estimated relative bias	#	2.78	2.33	10.94
Percent of variable categories significantly biased	#	8.11	#	5.41
After both nonresponse and poststratification weight adjustments				
Mean estimated relative bias	4.81	6.98	8.87	36.71
Median estimated relative bias	3.78	5.26	8.20	24.09
Percent of variable categories significantly biased	42.50	40.54	36.11	21.62

Rounds to zero.

NOTE: Nonresponse bias analysis for selected variables was conducted for the three sectors of institutions with a weighted response rate less than 85 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond (B&B:08/09).

Table A-7, the combined student interview and transcript summary of bias analysis, shows some reduction of measurable bias but measurable bias still remains. Similar to the student interview bias analysis, the poststratification resulted in an increase in the measurable bias.

Table A-7. Summary of combined student interview and transcript nonresponse bias analysis, by sector of institution: 2009

Nonresponse bias statistics	Overall	Public	Private nonprofit	For-profit
Before weight adjustments				
Mean estimated relative bias	4.69	5.39	6.63	11.93
Median estimated relative bias	3.69	4.79	4.28	8.51
Percent of variable categories significantly biased	30.00	35.14	22.86	#
After nonresponse weight adjustments				
Mean estimated relative bias	0.12	3.25	4.68	20.95
Median estimated relative bias	#	1.91	2.55	10.46
Percent of variable categories significantly biased	#	#	2.86	#
After both nonresponse and poststratification weight adjustments				
Mean estimated relative bias	3.99	6.44	8.68	37.19
Median estimated relative bias	2.93	4.77	7.25	22.27
Percent of variable categories significantly biased	22.50	21.62	22.86	16.22

Rounds to zero.

NOTE: Nonresponse bias analysis for selected variables was conducted for the three sectors of institutions with a weighted response rate less than 85 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond (B&B:08/09).

Interview Item-Level Bias Analysis

NCES Statistical Standard 4-4-3C states: “If the overall response rate is acceptable, nonresponse bias analysis may be conducted using data from survey respondents only. Unit level respondents who answered the low response rate item can be compared to unit level respondents who did not answer the item. Final weights and unimputed variables should be used in such an analysis. The comparison items should have very high item response rates. This approach may be limited because it does not directly analyze nonresponse bias that may originate because of unit level nonresponse” (U.S. Department of Education 2002).

Moreover, NCES Statistical Standard 1-3-5 states that: “Item response rates (RRI) are calculated as the ratio of the number of respondents for whom an in-scope response was obtained (I^x for item x) to the number of respondents who are asked to answer that item. The number asked to answer an item is the number of unit level respondents (I) minus the number of respondents with a valid skip item for item x (V^x). When an abbreviated questionnaire is used to convert refusals, the eliminated questions are treated as item nonresponse” (U.S. Department of Education 2002). The item response rate is calculated as:

$$RRI^x = I^x / (I - V^x)$$

A student is considered to be an item respondent for an analytic variable if the student has data for that variable from any source, including logical edits. As shown in table A-8, for the 15,050 responding students, the weighted item response rates for items used in this First Look Report for all students ranged from 81 percent to 100 percent. The weighted item response rates by sector of institution ranged from 67 percent to 100 percent.¹²

Per NCES Standard 1-3-5, response rates for constructed variables must account for missing inputs prior to imputation. Most of the components of the constructed variables had response rates greater than 85 percent.

¹² The weight used for calculating the weighted item response rates is the final student weight after nonresponse and poststratification adjustments.

Table A-8. Weighted item response rates for all students and by sector of institution: 2008–09

Variable	Variable label	All students	Public	Private nonprofit	For-profit
AGEATBA	Age at bachelor's degree completion	94.8	94.7	95.7	90.2
B1BORAT	Cumulative loans borrowed for undergraduate through 2007–08	93.8	94.7	92.9	89.4
B1ENRST	Enrollment status in 2009	94.9	95.6	93.8	91.5
B1ERNINC	Earned income in 2009 job	99.5	99.4	99.6	100.0
B1HIENR	Highest degree program enrollment after bachelor's as of 2009	99.7	99.7	99.8	98.9
B1LFP09	Employment and enrollment status in 2009	93.9	93.6	95.0	90.8
B1MARCH	Marital status and dependents in 2009	93.3	93.0	94.3	89.9
B1NFCUM1	Cumulative nonfederal loans borrowed for undergraduate through 2007–08	82.7	83.9	80.6	82.1
B1OCC6A	Occupation in 2009	98.1	98.2	97.6	98.4
B1TSTAT	K-12 teaching experience as of 2009	80.7	80.6	82.6	68.1
DEPEND	Dependency status in 2007–08	95.4	95.0	95.7	98.9
FEDCUM1	Cumulative federal loans borrowed for undergraduate through 2007–08	99.7	99.7	99.7	100.0
GENDER	Sex	99.7	99.7	99.7	100.0
HBCU	Received bachelor's degree from HBCU	100.0	100.0	100.0	100.0
HHE	Ever attended an HHE institution	100.0	100.0	100.0	100.0
H1OTHDEG	Highest degree completed before 2007–08 bachelor's	97.9	97.7	98.5	96.6
HS_PSE	Delayed entry into postsecondary education	90.2	89.1	92.3	91.2
I1SECT	First institution sector	99.9	99.9	99.8	100.0
LNSTATUS	Status of latest undergraduate Title IV loan as of 2008–09	99.1	99.2	98.9	99.8
MAJORS4Y	Bachelor's degree major	100.0	100.0	100.0	100.0
NTCONSID	K-12 considered teaching in 2007–08	82.8	82.7	84.8	69.9
NUMINST	Number of institutions attended before bachelor's completion	100.0	100.0	100.0	100.0
PAREduc	Highest education attained by either parent	82.9	83.0	84.4	70.4
PELLYRS	Ever received a Pell grant	99.7	99.7	99.7	100.0
PRIVLOAN	Total private loans in 2007–08	85.7	85.8	86.8	75.4
PSE_BA	Time to 2007–08 bachelor's degree	94.3	94.3	95.3	86.9
RACE	Race/ethnicity	98.4	98.9	98.1	94.0
SECTOR9	Bachelor's degree institution sector	100.0	100.0	100.0	100.0
TESATDER	SAT I score	92.3	92.2	94.1	66.9
TNFEDLN	Total nonfederal loans in 2007–08	85.1	85.1	86.2	75.4

NOTE: Weighted item response rates are calculated per NCES Statistical Standard 1-3-5 as the ratio of the number of respondents for whom an in-scope response was obtained to the number of respondents who are asked to answer that item.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Seven of the items (BINFCUM1, B1TSTAT, NTCNSID, PAREduc, PRIVLOAN, TESATDER, and TNFEDLN) had a weighted response rate below 85 percent. As shown in table A-8, the response rates for four of these seven items were below 85 percent for all students and all three institution sectors. The response rates for the other three variables were below 85 percent only for students from private for-profit institutions. A nonresponse bias analysis was conducted for these seven items. The nonresponse bias was estimated for variables known, that is, nonmissing, for interview respondents. These variables are important to the study and will be related to many of the items being analyzed for low item response rates. The set of variables and procedures used for the item nonresponse analysis are the same as those used for the student-level bias analysis presented earlier in this section.

Table A-9 shows the percentage of variable categories for which these seven items have statistically significant bias prior to imputation. The bias due to item nonresponse ranged from 35 to 48 percent for all students. The amount of bias varied by sector of institution and ranged from 3 to 46 percent. The median relative bias ranged from 1 to 3 percent overall and from 1 to 10 percent by sector of institution.

Any bias due to nonresponse, however, is based upon responses prior to imputation. The potential for bias in these estimates may have been reduced due to imputation. While item-level bias before imputation is measurable, such bias after imputation is not, so whether the imputation affected the bias cannot be directly evaluated. Therefore, the item estimates before and after imputations were compared to determine whether the imputation changed the biased estimate, thus suggesting a reduction in bias.

For continuous variables, the difference between the mean before imputation and the mean after imputation was estimated. For categorical variables, the estimated difference was computed for each of the categories as the percentage of students in that category before imputation minus the percentage of students in that category after imputation. These estimated differences were tested for statistical significance at the 5 percent level. A significant difference in the item means after imputation implies a reduction in bias due to imputation. A nonsignificant difference suggests that imputation may 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.

As shown in table A-9, statistical tests of the differences between estimates computed before and after imputation for five of the seven variables analyzed were significant, indicating that the nonresponse bias was reduced through imputation. The items BINFCUM1, B1TSTAT, and PAREduc have significant differences for all

students and students from public and private nonprofit institutions, and PAREDUC also has a significant difference for students from private for-profit institutions. The items PRIVLOAN and TNFEDLN have significant differences for students from private for-profit institutions. The differences between the estimates before and after imputation for NTCNSID and TESATDER were not significant.

Table A-9. Summary of item nonresponse bias analysis for all students and by sector of institution: 2007–08

Variable	Variable label	All students	Public	Private nonprofit	For-profit
B1NFCUM1	Cumulative nonfederal loans borrowed for undergraduate through 2007–08				
Before imputation					
Mean estimated relative bias		3.40	4.07	4.64	5.57
Median estimated relative bias		2.60	2.35	3.40	3.69
Percent of variable categories significantly biased		47.50	45.95	42.86	2.70
After imputation					
Percent difference in pre-imputation and post-imputation means		13.73*	15.07*	14.12*	1.25
B1TSTAT	K-12 teaching experience as of 2009				
Before imputation					
Mean estimated relative bias		2.90	2.02	3.21	13.31
Median estimated relative bias		1.50	1.38	1.12	5.97
Percent of variable categories significantly biased		35.00	16.22	28.57	21.62
After imputation					
Percent difference in pre-imputation and post-imputation distribution		3.28*	3.88*	6.02*	13.00
NTCONSID	K-12 considered teaching in 2007–08				
Before imputation					
Mean estimated relative bias		2.72	1.92	3.18	11.70
Median estimated relative bias		1.44	1.53	1.50	5.55
Percent of variable categories significantly biased		37.50	27.03	22.86	27.03
After imputation					
Percent difference in pre-imputation and post-imputation distribution		1.42	1.71	0.34	2.55
PAREduc	Highest education attained by either parent				
Before imputation					
Mean estimated relative bias		2.63	1.88	3.10	12.82
Median estimated relative bias		1.35	1.50	1.64	6.98
Percent of variable categories significantly biased		37.50	27.03	22.86	27.03
After imputation					
Percent difference in pre-imputation and post-imputation distribution		6.46*	6.08*	5.96*	22.31*

See notes at end of table.

Table A-9. Summary of item nonresponse bias analysis for all students and by sector of institution: 2007–08—Continued

Variable	Variable label	All students	Public	Private nonprofit	For-profit
PRIVLOAN	Total private loans in 2007–08				
Before imputation					
Mean estimated relative bias		†	†	†	7.41
Median estimated relative bias		†	†	†	4.23
Percent of variable categories significantly biased		†	†	†	43.24
After imputation					
Percent difference in pre-imputation and post-imputation means		†	†	†	8.62*
TESATDER	SAT I score				
Before imputation					
Mean estimated relative bias		†	†	†	20.12
Median estimated relative bias		†	†	†	10.09
Percent of variable categories significantly biased		†	†	†	8.33
After imputation					
Percent difference in pre-imputation and post-imputation means		†	†	†	0.45
TNFEDLN	Total nonfederal loans in 2007–08				
Before imputation					
Mean estimated relative bias		†	†	†	7.41
Median estimated relative bias		†	†	†	4.23
Percent of variable categories significantly biased		†	†	†	43.24
After imputation					
Percent difference in pre-imputation and post-imputation means		†	†	†	8.62*

† Not applicable.

* Bias is significant at the 0.05 level.

NOTE: The percent difference for the categorical variables B1TSTAT, NTCONSID, and PAREduc is the mean of the percent differences across the categories of the variable. All numbers are expressed as a proportion. The relative bias estimated before imputation and percent difference in pre- and post-imputation means are expressed in terms of the absolute value of the relative bias. The relative bias is not comparable to the percent difference due to the difference in how the measures are calculated. Therefore, the item estimates before and after imputations were compared to determine whether the imputation changed the biased estimate, thus suggesting a reduction in bias. A significant difference in the item means after imputation implies a reduction in bias due to imputation. A nonsignificant difference suggests that imputation may 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.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

Standard Errors

To facilitate computation of standard errors for both linear and nonlinear statistics, a vector of bootstrap sample weights was added to the analysis file. These weights are zero for units not selected in a particular bootstrap sample; weights for other units are inflated for the bootstrap subsampling. The initial analytic weights for the complete sample are also included for the purposes of computing the desired estimates. The vector of replicate weights allows for computing additional estimates for the sole purpose of estimating a variance. Assuming B sets of replicate weights, the variance of any estimate, $\hat{\theta}$, can be estimated by replicating the estimation procedure for each replicate and computing a simple variance of the replicate estimates:

$$Var(\hat{\theta}) = \frac{\sum_{b=1}^B (\hat{\theta}_b^* - \hat{\theta})^2}{B}$$

where $\hat{\theta}_b^*$ is the estimate based on the b -th replicate weight (where $b = 1$ to the number of replicates) and B is the total number of sets of replicate weights. A total of $B = 200$ replicates are used for B&B:08/09. Once the replicate weights are provided, this estimate can be produced by most survey software packages (e.g., *SUDAAN* [RTI International 2008]).

The replicate weights were produced using a methodology combining approaches developed by Flyer (1987) and Kott (1988). The B&B:08/09 application of the method incorporated the finite population correction factor at the first stage (NPSAS:08 institution sampling) only, following the methodology proposed by Chromy (1979).

Cautions for Analysts

Sources of Error

The estimates in this report are subject to sampling and nonsampling errors. Nonsampling errors are due to a number of sources, including but not limited to nonresponse, coding and data entry errors, misspecification of composite variables, and inaccurate imputations. In a study like B&B:08/09, there are multiple sources of data for some variables (CPS, CADE, Student Interview, National Student Clearinghouse, etc.) and reporting differences can occur in each. Data swapping and other forms of perturbation, implemented to protect respondent confidentiality, can also lead to inconsistencies.

Sampling errors exist in all sample-based data sets, including B&B:08/09. Estimates calculated from a sample will differ from estimates calculated from other samples even if all the samples used the same sample design and methods.

The standard error is a measure of the precision of the estimate. In this tabulation, each estimate's standard error was calculated using bootstrap replication procedures and can be produced using the B&B PowerStats software.

Comparing B&B:08/09 Estimates to Prior B&B Estimates

Comparison of results with prior rounds of B&B requires compensation for two changes in the design of the base-year NPSAS survey over time and also for a change in how nonrespondents are handled in the B&B:08/09 data file.

First, prior to NPSAS:04, institutions that only offered correspondence courses were not eligible for NPSAS. NPSAS:04 included such institutions if they were eligible to distribute Title IV student aid.

Second, for NPSAS:2000, the survey was restricted for the first time to institutions participating in Title IV student aid programs. According to the NPSAS:96 Data Analysis System (DAS), only about 1 percent of sampled undergraduates were attending an institution not eligible to participate in Title IV aid programs. When students attending non-Title IV-eligible institutions were excluded from the NPSAS:96 sample, the percentage of undergraduates who received financial aid increased by less than 1 percent. This small change primarily affects comparisons of students enrolled in less-than-2-year and private for-profit institutions. When using the DAS from prior B&B studies for comparison to the B&B:08 cohort, analysts may want to filter cases in the prior studies (B&B:93 and B&B:2000) based on whether the student was sampled from an institution that was eligible to participate in Title IV aid programs (T4ELIG).

Nonrespondents to the B&B:08/09 interview appear on the data file with imputed data for all variables. In previous rounds of B&B, the nonrespondents appeared on the file but did not have data items and had a value of zero for the analysis weight.

PowerStats

The estimates presented in this report were produced using PowerStats, a web-based software application that enables users to generate tables for most of the postsecondary surveys conducted by NCES. PowerStats produces the design-adjusted standard errors necessary for testing the statistical significance of differences in the

estimates. PowerStats also contains a detailed description of how each variable was created, and includes question wording for items coming directly from an interview.

With PowerStats, users can replicate or expand upon the tables presented in this report. The output from PowerStats includes the table estimates (e.g., percentages or means), the proper standard errors,¹³ and weighted sample sizes for the estimates. If the number of valid cases is too small to produce a reliable estimate (fewer than 30 cases), PowerStats prints the double dagger symbol (‡) instead of the estimate. In addition, PowerStats flags unstable estimates (i.e., those with a relative standard error of 30 percent or more) with an exclamation point.

In addition to tables, PowerStats users may conduct linear or logistic regressions. Many options are available for output with the regression results. For a description of all the options available, users should access the PowerStats website at (<http://nces.ed.gov/datalab/index.aspx>). For more information, contact powerstats@ed.gov.

¹³ The B&B samples are not simple random samples; therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. PowerStats takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by PowerStats involves approximating the estimator by replication of the sampled population. The procedure used is a bootstrap technique.