

# Baccalaureate and Beyond:

A First Look at the Employment Experiences and Lives  
of College Graduates, 4 Years On (B&B:08/12)



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# Baccalaureate and Beyond: A First Look at the Employment Experiences and Lives of College Graduates, 4 Years On (B&B:08/12)

First Look

JULY 2014

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# Contents

	PAGE
Acknowledgments .....	iii
List of Tables.....	vii
Introduction.....	1
Selected Findings .....	3
Tables .....	4
References .....	17
Appendix A—Glossary.....	A-1
Appendix B—B&B:08/12 Technical Notes and Methodology .....	B-1

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# List of Tables

TABLE	PAGE	
1	DEMOGRAPHIC AND UNDERGRADUATE COLLEGE CHARACTERISTICS: Percentage distribution of 2007–08 bachelor’s degree recipients by demographic and enrollment characteristics: 2012.....	4
2	EMPLOYMENT AND ENROLLMENT: Percentage distribution of 2007–08 bachelor’s degree recipients’ employment and additional postsecondary enrollment status, by demographic and enrollment characteristics: 2012 .....	6
3	EMPLOYMENT STATUS AND INTENSITY: Percentage of 2007–08 bachelor’s degree recipients who were not enrolled in 2012 who were employed and, of those, percentage distribution of employment intensity, by demographic and enrollment characteristics: 2012 .....	8
4	NUMBER OF JOBS AFTER BACHELOR’S: Among 2007–08 bachelor’s degree recipients who worked after receiving the 2007–08 degree and had not enrolled, average number of jobs held since receipt of degree and percentage distribution by number of jobs held and demographic and enrollment characteristics: 2012 .....	10
5	PERCENTAGE OF TIME EMPLOYED, UNEMPLOYED, AND OUT OF THE LABOR FORCE: Average percentage of time, in months, since graduation that 2007–08 bachelor’s degree recipients who had not enrolled spent employed, unemployed, and out of the labor force, by demographic and enrollment characteristics: 2012.....	12
6	CHARACTERISTICS OF CURRENT PRIMARY JOB: Hours worked and annualized salary for 2007–08 bachelor’s degree recipients who were not enrolled and were working part and full time in their current primary job, by demographic and enrollment characteristics: 2012 .....	14

TABLE	PAGE
APPENDIX	
B-1	Data sources for NPSAS:08, B&B:08/09, and B&B:08/12 ..... B-3
B-2	Counts of sampled and eligible institutions and enrollment list participation rates, by institution characteristics: 2007–08 ..... B-6
B-3	Counts of sampled and eligible students and response rates, by institution characteristics: 2007–08..... B-8
B-4	Potential B&B:08 cohort members, by eligibility source ..... B-9
B-5	Eligibility status based on transcripts of the B&B:08 sample members with baccalaureate receipt confirmed in the NPSAS:08 interview..... B-10
B-6	Counts of sampled and eligible students and response rates, by institution control: 2009 ..... B-11
B-7	Distribution of the B&B:08/12 sample, by interview response status in NPSAS:08 and B&B:08/09..... B-12
B-8	Counts of sampled and eligible students and response rates, by institution control: 2012 ..... B-13
B-9	Summary of components of the B&B:08/12 analysis weights: 2012..... B-16
B-10	Summary of nonresponse bias analysis for each analysis weight, by type of institution: 2012 ..... B-20
B-11	Summary of differences between means for each analysis weight, by type of institution: 2012..... B-21
B-12	Weighted item response rates for all B&B:08/12 respondents, by type of institution: 2012 ..... B-23
B-13	Standard errors for table 1: DEMOGRAPHIC AND UNDERGRADUATE COLLEGE CHARACTERISTICS: Percentage distribution of 2007–08 bachelor’s degree recipients by demographic and enrollment characteristics: 2012 ..... B-25

# Introduction

This report presents initial findings about the employment outcomes of bachelor's degree recipients approximately 4 years after they completed their 2007 -08 degrees. These findings are based on data from the second follow-up of the Baccalaureate and Beyond Longitudinal Study (B&B:08/12), a nationally representative longitudinal sample survey of students who completed the requirements for a bachelor's degree during the 2007 -08 academic year. The study addresses questions related to bachelor's degree recipients' education and employment experiences and includes two follow-ups. The first follow-up, which was conducted 1 year after graduation, explored both undergraduate education experiences and early postbaccalaureate employment and enrollment. This second follow-up, conducted in 2012, examines bachelor's degree recipients' labor market experiences and enrollment in additional postsecondary degree programs through the 4th year after graduation.

The Baccalaureate and Beyond (B&B) series of data collections allows researchers to address questions regarding bachelor's degree recipients' undergraduate experiences, including their participation in various financial aid programs, undergraduate debt, and repayment of that debt; entrance into and progress through postbaccalaureate education; and employment, particularly for graduates who became elementary/secondary teachers. In B&B:08/12, respondents were asked to provide a complete employment history beginning from the date they completed their bachelor's degree requirements. This depth of information on bachelor's degree recipients' employment and job search activities is new to the B&B series of studies, and this First Look, therefore, focuses on employment outcomes.

The First Look reports introduce new National Center for Education Statistics (NCES) survey data by presenting selected descriptive information. Readers are cautioned not to draw causal inferences based solely on the bivariate results presented: 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 available in these data; they were selected to demonstrate the range of employment-related information in the study. The release of this report is intended to encourage other researchers to conduct more in-depth analysis of these 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 17,110 students

were determined to be eligible for B&B:08/12.<sup>1</sup> 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 a 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.

This report is organized as follows. The first section presents key findings from the detailed tables that follow. Table 1 provides information on the demographic and undergraduate enrollment characteristics of 2007 -08 bachelor's degree recipients. Tables 2 -3 examine the employment and degree enrollment status of graduates in 2012, roughly 4 years after graduating with a bachelor's degree. Table 4 addresses the number of jobs that graduates held within 4 years of graduation, while Table 5 presents the percentage of time that graduates spent employed, unemployed, and out of the labor force in that time frame. Table 6 examines the characteristics of graduates' jobs in 2012.

Appendix A provides a glossary of variables used in this publication and their definitions. Appendix B provides details about the methods and procedures used for B&B:08/12. It contains information on data sources, sample design, imputation, weighting, and quality of estimates, including standard errors for estimates presented in table 1 (table B-13). Standard errors for estimates presented in all of the tables can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2014141>.

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<sup>1</sup> Approximately 17,160 students were eligible for B&B:08/09. About 30 students were found to be ineligible and approximately 20 were deceased as of B&B:08/12, reducing the eligible sample size to about 17,110.

## Selected Findings

### ***Demographic and enrollment characteristics***

- Four years after graduating in 2007–08, some 54 percent of bachelor’s degree recipients were unmarried with no dependent children, and 21 percent were married with no dependent children (table 1). Five percent were unmarried with dependent children, and another 20 percent were married with dependent children.

### ***Employment and enrollment status***

- Eleven percent of 2007–08 bachelor’s degree recipients were combining employment and additional postsecondary enrollment in 2012, some 6 percent were exclusively enrolled, 69 percent were exclusively employed, 7 percent were unemployed (looking for work), and 8 percent were out of the labor force (not looking for work) (table 2).<sup>2</sup>
- Four years after graduation, 83 percent of graduates who were not enrolled were employed (table 3). Of those, about 85 percent worked in one full-time job, 8 percent worked in one part-time job, and 8 percent had multiple jobs.<sup>3</sup>
- Among graduates who were not enrolled in 2012, some 87 percent of those who majored in health care fields as undergraduates were employed, and of those 76 percent worked in one full-time job, 14 percent in one part-time job, and 10 percent in multiple jobs (table 3).
- Among graduates who were not enrolled in 2012, some 78 percent of those who majored in social science fields as undergraduates were employed, and of those 84 percent worked in one full-time job, 8 percent in one part-time job, and 8 percent in multiple jobs (table 3).

### ***Number of jobs held after the bachelor’s degree***

- On average, 2007–08 graduates who had never enrolled in additional postsecondary degree programs after earning their bachelor’s degree had held two jobs in the 4 years since graduation (table 4). Thirty-nine and 34 percent had held one or two jobs, respectively. Sixteen percent had held three jobs, and the remaining 11 percent had held four or more jobs.

### ***Time spent employed, unemployed, and out of the labor force***

- On average, graduates who had not enrolled after earning their bachelor’s degree were employed for about 84 percent of the months that elapsed between their graduation in 2007–08 and the second follow-up study in 2012 (table 5). Some 6 percent of the time between graduation and the second follow-up study, on average, was spent unemployed, and the remaining 10 percent was spent out of the labor force.

### ***Hours per week and salary in current primary job***

- Bachelor’s degree recipients who had been employed in their current job for more than 3 months at the time of the second follow-up and were not enrolled, worked an average of 41 hours per week in that job (table 6). Among the 85 percent who worked full time,<sup>4</sup> the average annualized salary from that primary job was \$52,200.

<sup>2</sup> Detail may not sum to 100 percent due to rounding.

<sup>3</sup> Detail may not sum to 100 percent due to rounding.

<sup>4</sup> Graduates who worked more than 35 hours per week are defined as “working full time.”

**Table 1.**  
**DEMOGRAPHIC AND UNDERGRADUATE COLLEGE CHARACTERISTICS: Percentage distribution of 2007–08 bachelor’s degree recipients by demographic and enrollment characteristics: 2012**

Demographic and enrollment characteristics	Total
<b>Total</b>	<b>100.0</b>
Sex	
Male	42.6
Female	57.4
Race/ethnicity <sup>1</sup>	
White	72.9
Black	8.6
Hispanic	9.2
Asian	5.8
Other	3.5
Age at bachelor’s degree award	
23 or younger	64.8
24–29	19.8
30 or older	15.4
Bachelor’s degree major <sup>2</sup>	
STEM major <sup>3</sup>	16.2
Computer and information sciences	2.9
Engineering and engineering technology	6.0
Biological and physical sciences, science technology, mathematics, and agricultural sciences	7.3
Non-STEM major	83.8
General studies and other <sup>4</sup>	3.0
Social sciences	15.2
Humanities	11.7
Health care fields	7.6
Business	23.3
Education	8.2
Other applied <sup>5</sup>	14.9
Bachelor’s degree institution sector <sup>6</sup>	
Public 4-year	62.8
Private nonprofit 4-year	32.5
For-profit 4-year	4.6

See notes at end of table.

**Table 1.**  
**DEMOGRAPHIC AND UNDERGRADUATE COLLEGE CHARACTERISTICS: Percentage distribution of 2007–08 bachelor's degree recipients by demographic and enrollment characteristics: 2012—Continued**

Demographic and enrollment characteristics	Total
Family status in 2012 <sup>7</sup>	
Unmarried with no dependent children	54.0
Unmarried with dependent children	5.4
Married with no dependent children	20.9
Married with dependent children	19.6
<p><sup>1</sup> 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.</p> <p><sup>2</sup> Graduates with multiple majors were classified by the first major field of study reported.</p> <p><sup>3</sup> STEM major includes science, technology, engineering, and mathematics.</p> <p><sup>4</sup> General studies and other 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.</p> <p><sup>5</sup> Other applied includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.</p> <p><sup>6</sup> Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degrees from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.06 percent of graduates who attained their degrees from a for-profit less-than-4-year institution.</p> <p><sup>7</sup> Unmarried includes graduates who were separated.</p> <p>NOTE: 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 <a href="http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2014141">http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2014141</a>. To recreate the table(s) used to produce these estimates within PowerStats (<a href="http://nces.ed.gov/datalab">http://nces.ed.gov/datalab</a>), use the following QuickRetrieve codes once logged into the application: dbcbe56; dbcbe9f; dbcbe32; dbcbe52; febe34; dbcbead; dbcbedd.</p> <p>SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/12).</p>	

**Table 2.**  
**EMPLOYMENT AND ENROLLMENT: Percentage distribution of 2007–08 bachelor's degree recipients' employment and additional postsecondary enrollment status, by demographic and enrollment characteristics: 2012**

Demographic and enrollment characteristics	Employed only	Both employed and enrolled	Enrolled only	Not employed or enrolled	
				Un-employed	Out of the labor force
<b>Total</b>	<b>69.0</b>	<b>10.7</b>	<b>5.7</b>	<b>6.7</b>	<b>7.9</b>
Sex					
Male	71.2	9.7	5.7	6.9	6.5
Female	67.4	11.4	5.7	6.6	8.9
Race/ethnicity <sup>1</sup>					
White	72.1	10.5	4.8	5.5	7.2
Black	57.1	14.2	8.8	11.8	8.1
Hispanic	65.8	10.1	6.2	8.5	9.4
Asian	58.7	8.5	9.7	11.9	11.3
Other	60.8	11.5	8.1	7.9	11.7
Age at bachelor's degree award					
23 or younger	70.1	10.6	6.5	6.0	6.8
24–29	69.0	11.0	4.6	6.9	8.6
30 or older	64.6	10.7	3.7	9.6	11.3
Bachelor's degree major <sup>2</sup>					
STEM major <sup>3</sup>	68.2	10.3	9.6	5.0	6.9
Computer and information sciences	76.8	6.8	‡	4.9 !	9.5
Engineering and engineering technology	76.5	10.1	4.6 !	4.3	4.5
Biological and physical sciences, science technology, mathematics, and agricultural sciences	58.0	11.8	16.7	5.6	7.9
Non-STEM major	69.2	10.7	5.0	7.1	8.0
General studies and other <sup>4</sup>	68.6	9.9	3.5 !	9.4	8.6
Social sciences	61.7	12.2	8.9	9.6	7.6
Humanities	61.4	13.2	8.5	9.0	7.9
Health care fields	72.6	13.8	2.8	2.2	8.5
Business	74.6	8.8	2.8	6.6	7.3
Education	67.8	14.8	3.3	5.0	9.1
Other applied <sup>5</sup>	73.7	6.6	4.0	6.9	8.9
Bachelor's degree institution sector <sup>6</sup>					
Public 4-year	70.0	11.3	5.0	6.2	7.5
Private nonprofit 4-year	67.7	9.7	7.7	7.1	7.8
For-profit 4-year	65.2	8.3	1.9 !	11.9	12.8

See notes at end of table.



Table 2.

**EMPLOYMENT AND ENROLLMENT: Percentage distribution of 2007–08 bachelor's degree recipients' employment and additional postsecondary enrollment status, by demographic and enrollment characteristics: 2012—Continued**

Demographic and enrollment characteristics	Employed only	Both employed and enrolled	Enrolled only	Not employed or enrolled	
				Un-employed	Out of the labor force
Family status in 2012 <sup>7</sup>					
Unmarried with no dependent children	67.6	11.0	7.4	7.7	6.3
Unmarried with dependent children	67.1	12.9	5.3	6.5	8.3
Married with no dependent children	74.9	9.3	3.8	5.5	6.5
Married with dependent children	67.2	10.5	3.3	5.6	13.4

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

‡ Reporting standards not met. (Too few cases for a reliable estimate.)

<sup>1</sup> 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.

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

<sup>3</sup> STEM major includes science, technology, engineering, and mathematics.

<sup>4</sup> General studies and other 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.

<sup>5</sup> Other applied includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

<sup>6</sup> Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degrees from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.06 percent of graduates who attained their degrees from a for-profit less-than-4-year institution.

<sup>7</sup> Unmarried includes graduates who were separated.

NOTE: 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=2014141>. To recreate the table(s) used to produce these estimates within PowerStats (<http://nces.ed.gov/datalab>), use the following QuickRetrieve code once logged into the application: dbcbeef.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

**Table 3.**  
**EMPLOYMENT STATUS AND INTENSITY: Percentage of 2007–08 bachelor's degree recipients who were not enrolled in 2012 who were employed and, of those, percentage distribution of employment intensity, by demographic and enrollment characteristics: 2012**

Demographic and enrollment characteristics	Employed, among nonenrolled <sup>2</sup>	Employment intensity <sup>1</sup>		
		One full-time job	One part-time job	Multiple jobs
<b>Total</b>	<b>82.5</b>	<b>84.5</b>	<b>7.8</b>	<b>7.7</b>
Sex				
Male	84.1	88.7	5.4	5.9
Female	81.3	81.2	9.7	9.1
Race/ethnicity <sup>3</sup>				
White	85.1	84.5	7.8	7.8
Black	74.1	83.9	5.2	10.9
Hispanic	78.6	82.9	11.1	6.0
Asian	71.6	92.0	5.9	‡
Other	75.6	79.6	8.0 !	12.4
Age at bachelor's degree award				
23 or younger	84.5	85.5	7.5	7.0
24–29	81.7	82.7	8.5	8.8
30 or older	75.5	82.5	8.1	9.4
Bachelor's degree major <sup>4</sup>				
STEM major <sup>5</sup>				
Computer and information sciences	84.2	91.6	3.6 !	4.7 !
Engineering and engineering technology	89.6	92.9	2.6 !	4.5 !
Biological and physical sciences, science technology, mathematics, and agricultural sciences	81.2	87.9	6.5	5.6
Non-STEM major				
General studies and other <sup>6</sup>	79.2	82.2	11.3	6.5 !
Social sciences	78.2	83.6	8.0	8.5
Humanities	78.4	74.1	14.0	11.9
Health care fields	87.1	76.0	13.5	10.4
Business	84.3	89.9	4.8	5.3
Education	82.8	81.8	7.4	10.8
Other applied <sup>7</sup>	82.4	83.4	8.6	8.0
Bachelor's degree institution sector <sup>8</sup>				
Public 4-year	83.6	85.3	7.6	7.1
Private nonprofit 4-year	81.9	82.9	8.3	8.8
For-profit 4-year	72.5	85.5	6.5	8.0 !

See notes at end of table.

Table 3.

**EMPLOYMENT STATUS AND INTENSITY: Percentage of 2007–08 bachelor's degree recipients who were not enrolled in 2012 who were employed and, of those, percentage distribution of employment intensity, by demographic and enrollment characteristics: 2012—Continued**

Demographic and enrollment characteristics	Employed, among nonenrolled <sup>2</sup>	Employment intensity <sup>1</sup>		
		One full-time job	One part-time job	Multiple jobs
Family status in 2012 <sup>9</sup>				
Unmarried with no dependent children	82.8	84.9	7.3	7.8
Unmarried with dependent children	82.0	79.6	10.0	10.4
Married with no dependent children	86.3	86.4	6.5	7.0
Married with dependent children	78.0	82.4	10.0	7.6

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

‡ Reporting standards not met. (Too few cases for a reliable estimate.)

<sup>1</sup> Full-time/part-time employment status is based on respondent report.

<sup>2</sup> The percentage of respondents who were not enrolled but were employed divided by the percentage of respondents who were not enrolled and were employed, unemployed, or out of the labor force.

<sup>3</sup> 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.

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

<sup>5</sup> STEM major includes science, technology, engineering, and mathematics.

<sup>6</sup> General studies and other 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.

<sup>7</sup> Other applied includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

<sup>8</sup> Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degrees from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.06 percent of graduates who attained their degrees from a for-profit less-than-4-year institution.

<sup>9</sup> Unmarried includes graduates who were separated.

NOTE: 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=2014141>. To recreate the table(s) used to produce these estimates within PowerStats (<http://nces.ed.gov/datalab>), use the following QuickRetrieve codes once logged into the application: dbcbe30; dbcbeb1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

**Table 4.**  
**NUMBER OF JOBS AFTER BACHELOR'S:** Among 2007–08 bachelor's degree recipients who worked after receiving the 2007–08 degree and had not enrolled, average number of jobs held since receipt of degree and percentage distribution by number of jobs held and demographic and enrollment characteristics: 2012

Demographic and enrollment characteristics	Average number of jobs	Number of jobs			
		One	Two	Three	Four or more
<b>Total</b>	<b>2.1</b>	<b>38.7</b>	<b>33.6</b>	<b>16.3</b>	<b>11.4</b>
Sex					
Male	2.0	40.0	36.0	14.6	9.4
Female	2.1	37.6	31.7	17.6	13.1
Race/ethnicity <sup>1</sup>					
White	2.1	37.1	33.9	16.4	12.5
Black	1.9	43.7	34.2	12.9	9.1
Hispanic	1.9	45.6	33.3	14.7	6.5
Asian	1.9	47.0	27.9	18.7	6.4 !
Other	2.3	30.0	35.2	20.9	13.9
Age at bachelor's degree award					
23 or younger	2.2	34.1	33.7	18.8	13.4
24–29	2.0	38.2	37.6	15.2	9.1
30 or older	1.7	55.6	28.1	8.8	7.5
Bachelor's degree major <sup>2</sup>					
STEM major <sup>3</sup>	1.9	46.9	29.0	16.9	7.2
Computer and information sciences	1.8	43.8	34.4	16.6	5.2 !
Engineering and engineering technology	1.7	57.3	26.5	11.4	4.8
Biological and physical sciences, science technology, mathematics, and agricultural sciences	2.2	34.8	28.0	24.9	12.3
Non-STEM major	2.1	37.2	34.4	16.2	12.2
General studies and other <sup>4</sup>	2.1	33.2	35.4	24.5	7.0
Social sciences	2.1	37.1	32.3	18.1	12.4
Humanities	2.6	23.2	32.5	20.5	23.8
Health care fields	1.9	45.9	31.7	12.7	9.8
Business	1.9	40.9	38.0	13.7	7.4
Education	2.1	40.1	32.6	15.4	12.0
Other applied <sup>5</sup>	2.3	34.7	32.8	16.9	15.7
Bachelor's degree institution sector <sup>6</sup>					
Public 4-year	2.1	39.0	33.3	16.8	10.9
Private nonprofit 4-year	2.1	36.0	35.2	16.1	12.6
For-profit 4-year	2.0	49.7	28.6	11.0	10.6 !

See notes at end of table.

Table 4.

**NUMBER OF JOBS AFTER BACHELOR'S: Among 2007–08 bachelor's degree recipients who worked after receiving the 2007–08 degree and had not enrolled, average number of jobs held since receipt of degree and percentage distribution by number of jobs held and demographic and enrollment characteristics: 2012—Continued**

Demographic and enrollment characteristics	Average number of jobs	Number of jobs			
		One	Two	Three	Four or more
Family status in 2012 <sup>7</sup>					
Unmarried with no dependent children	2.2	33.3	34.2	18.1	14.4
Unmarried with dependent children	1.9	45.4	33.8	12.8	8.1 !
Married with no dependent children	2.0	40.7	33.4	15.7	10.2
Married with dependent children	1.8	47.2	32.4	13.6	6.8

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

<sup>1</sup> 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.

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

<sup>3</sup> STEM major includes science, technology, engineering, and mathematics.

<sup>4</sup> General studies and other 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.

<sup>5</sup> Other applied includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

<sup>6</sup> Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degrees from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.06 percent of graduates who attained their degrees from a for-profit less-than-4-year institution.

<sup>7</sup> Unmarried includes graduates who were separated.

NOTE: 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=2014141>. To recreate the table(s) used to produce these estimates within PowerStats (<http://nces.ed.gov/datalab>), use the following QuickRetrieve codes once logged into the application: dbcbe7c; dbcbe0c.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

**Table 5.**  
**PERCENTAGE OF TIME EMPLOYED, UNEMPLOYED, AND OUT OF THE LABOR FORCE: Average percentage of time, in months, since graduation that 2007–08 bachelor’s degree recipients who had not enrolled spent employed, unemployed, and out of the labor force, by demographic and enrollment characteristics: 2012**

<b>Demographic and enrollment characteristics</b>	<b>Average percentage of months spent employed</b>	<b>Average percentage of months spent unemployed</b>	<b>Average percentage of months spent out of the labor force</b>
<b>Total</b>	<b>84.0</b>	<b>5.8</b>	<b>10.2</b>
Sex			
Male	84.9	6.2	9.0
Female	83.2	5.5	11.3
Race/ethnicity <sup>1</sup>			
White	86.0	5.1	8.9
Black	78.9	7.2	13.9
Hispanic	78.1	8.4	13.6
Asian	74.2	8.2	17.5
Other	81.3	7.2	11.5
Age at bachelor’s degree award			
23 or younger	85.4	5.6	9.1
24–29	82.6	6.5	10.9
30 or older	80.9	5.8	13.3
Bachelor’s degree major <sup>2</sup>			
STEM major <sup>3</sup>	87.5	4.6	8.0
Computer and information sciences	86.4	3.7	9.9
Engineering and engineering technology	92.1	3.9	4.0
Biological and physical sciences, science technology, mathematics, and agricultural sciences	82.0	6.3	11.7
Non-STEM major	83.4	6.0	10.6
General studies and other <sup>4</sup>	83.3	5.1	11.7
Social sciences	80.1	7.0	12.9
Humanities	81.6	7.5	10.9
Health care fields	88.8	2.5	8.8
Business	84.6	5.7	9.7
Education	82.1	6.6	11.3
Other applied <sup>5</sup>	82.6	6.5	10.8
Bachelor’s degree institution sector <sup>6</sup>			
Public 4-year	84.1	5.6	10.4
Private nonprofit 4-year	84.5	6.0	9.5
For-profit 4-year	80.0	7.4	12.7

See notes at end of table.

Table 5.

PERCENTAGE OF TIME EMPLOYED, UNEMPLOYED, AND OUT OF THE LABOR FORCE: Average percentage of time, in months, since graduation that 2007–08 bachelor's degree recipients who had not enrolled spent employed, unemployed, and out of the labor force, by demographic and enrollment characteristics: 2012—Continued

Demographic and enrollment characteristics	Average percentage of months spent employed	Average percentage of months spent unemployed	Average percentage of months spent out of the labor force
Family status in 2012 <sup>7</sup>			
Unmarried with no dependent children	83.9	7.2	8.9
Unmarried with dependent children	85.5	5.7	8.9
Married with no dependent children	85.7	4.5	9.8
Married with dependent children	82.0	4.0	14.0

<sup>1</sup> 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.

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

<sup>3</sup> STEM major includes science, technology, engineering, and mathematics.

<sup>4</sup> General studies and other 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.

<sup>5</sup> Other applied includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

<sup>6</sup> Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degrees from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.06 percent of graduates who attained their degrees from a for-profit less-than-4-year institution.

<sup>7</sup> Unmarried includes graduates who were separated.

NOTE: 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=2014141>. To recreate the table(s) used to produce these estimates within PowerStats (<http://nces.ed.gov/datalab>), use the following QuickRetrieve code once logged into the application: dbcbe15.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

**Table 6.**  
**CHARACTERISTICS OF CURRENT PRIMARY JOB: Hours worked and annualized salary for 2007–08 bachelor’s degree recipients who were not enrolled and were working part and full time in their current primary job, by demographic and enrollment characteristics: 2012**

Demographic and enrollment characteristics	Hours per week in current primary job		Annualized salary in current primary job <sup>1</sup>			
	Average	Percent full time <sup>2</sup>	Part time		Full time	
			Average	Median	Average	Median
<b>Total</b>	<b>41.2</b>	<b>85.4</b>	<b>\$25,900</b>	<b>\$20,200</b>	<b>\$52,200</b>	<b>\$46,000</b>
Sex						
Male	43.1	89.7	26,500	20,300	57,800	51,100
Female	39.8	82.0	25,700	20,200	47,400	42,500
Race/ethnicity <sup>3</sup>						
White	41.3	85.4	25,500	20,200	52,400	46,500
Black	40.5	88.4	31,300	25,000	48,800	42,000
Hispanic	39.9	81.2	24,300	18,000	47,300	44,400
Asian	44.0	90.3	20,700	18,000	62,500	55,000
Other	41.6	83.3	‡	18,700 !	49,400	43,000
Age at bachelor’s degree award						
23 or younger	41.6	86.0	25,300	20,800	50,700	45,000
24–29	40.5	83.7	25,700	18,700	51,000	46,200
30 or older	40.6	85.1	28,900	20,800	60,700	54,000
Bachelor’s degree major <sup>4</sup>						
STEM major <sup>5</sup>	43.7	92.4	30,700	23,400	65,000	60,000
Computer and information sciences	42.0	95.8	40,000	‡	72,600	66,000
Engineering and engineering technology	44.8	94.7	44,100	34,900	73,700	67,600
Biological and physical sciences, science technology, mathematics, and agricultural sciences	43.4	88.0	22,500	17,100	50,400	46,800
Non-STEM major	40.8	84.1	25,500	20,000	49,500	44,000
General studies and other <sup>6</sup>	41.1	83.1	‡	25,000 !	53,700	44,000
Social sciences	40.9	84.2	22,500	15,600	46,700	40,000
Humanities	38.6	73.3	21,100	16,600	43,100	38,400
Health care fields	36.6	76.3	38,300	32,800	58,900	54,800
Business	42.8	90.7	26,700	20,800	55,500	50,000
Education	41.0	84.8	23,000	21,600	40,500	37,000
Other applied <sup>7</sup>	40.7	84.3	20,900	16,400	44,800	41,500
Bachelor’s degree institution sector <sup>8</sup>						
Public 4-year	41.4	86.0	25,100	20,000	50,700	45,000
Private nonprofit 4-year	41.1	84.4	26,500	19,200	53,700	47,500
For-profit 4-year	40.1	83.5	32,500	34,900	62,900	54,000

See notes at end of table.



Table 6.

**CHARACTERISTICS OF CURRENT PRIMARY JOB: Hours worked and annualized salary for 2007–08 bachelor's degree recipients who were not enrolled and were working part and full time in their current primary job, by demographic and enrollment characteristics: 2012—Continued**

Demographic and enrollment characteristics	Hours per week in current primary job		Annualized salary in current primary job <sup>1</sup>			
	Average	Percent full time <sup>2</sup>	Part time		Full time	
			Average	Median	Average	Median
Family status in 2012 <sup>9</sup>						
Unmarried with no dependent children	41.8	85.5	\$23,700	\$18,300	\$51,300	\$45,500
Unmarried with dependent children	39.0	82.4	32,800 †	23,500	47,700	41,600
Married with no dependent children	41.3	86.5	28,700	22,800	51,600	46,800
Married with dependent children	40.2	84.6	26,500	21,800	56,500	48,000

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

‡ Reporting standards not met. (Too few cases for a reliable estimate.)

<sup>1</sup> Salary for the current primary job, as reported by the respondent, calculated on an annual basis.

<sup>2</sup> Graduates who worked more than 35 hours per week are defined as working full time.

<sup>3</sup> 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.

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

<sup>5</sup> STEM major includes science, technology, engineering, and mathematics.

<sup>6</sup> General studies and other 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.

<sup>7</sup> Other applied includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

<sup>8</sup> Estimates for private nonprofit 4-year institutions include 0.02 percent of graduates who attained their bachelor's degrees from a private nonprofit less-than-4-year institution; estimates for for-profit 4-year institutions include 0.06 percent of graduates who attained their degrees from a for-profit less-than-4-year institution.

<sup>9</sup> Unmarried includes graduates who were separated.

NOTE: The current primary job is the job held at the time of the second follow-up interview at which the respondent had worked for more than 3 months. 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=2014141>. To recreate the table(s) used to produce these estimates within PowerStats (<http://nces.ed.gov/datalab>), use the following QuickRetrieve codes once logged into the application: dbcbef1; dbcbecb.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

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## Appendix A—Glossary

This glossary includes descriptions of the variables used in the tables of this report. All of the variables are found in the 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12) database, and statistics from the database are generated by PowerStats, a web-based software application available to the public at <http://nces.ed.gov/datalab>. The variables are listed in the glossary index below by general topic area and then in the order in which they appear in the tables. The glossary that follows is organized alphabetically by variable label.

### Glossary Index

#### Student Characteristics

Sex .....	GENDER
Race/ethnicity.....	RACE
Age at bachelor's degree award.....	AGEATBA
Bachelor's degree major .....	MAJORS4Y
Bachelor's degree institution sector .....	SECTOR9
Family status in 2012 .....	B2MARCH

#### Employment Status and Characteristics

Employment and enrollment status .....	B2LFP12
Number of jobs since bachelor's degree.....	B2TOTJOB
Average percentage of months spent employed.....	B2PCEMP
Average percentage of months spent unemployed .....	B2PCUNEM
Average percentage of months spent out of the labor force .....	B2PCOLF
Hours per week in current primary job .....	B2CJHRS
Annualized salary in current primary job.....	B2CJSAL
Enrolled in degree program since bachelor's degree.....	B2CPSTGRD

**Age at bachelor's degree award** **AGEATBA**  
Indicates the respondent's age (in years) at the date of the award of the 2007–08 bachelor's degree.

**Annualized salary in current primary job** **B2CJSAL**  
Salary of respondent's current primary job at the time of the second follow-up interview, calculated on an annual basis. Respondents could report salary in annual, monthly, weekly, or hourly amounts. Annual amounts were included as reported; monthly amounts were multiplied by 12; weekly amounts were multiplied by 52; and hourly amounts were multiplied by the number of hours the respondent reported working at that job per week, then multiplied by 52. The current primary job is the currently held job at which the respondent has worked for more than 3 months and, if more than one job meets these criteria, the job with the highest number of hours per week.

**Average percentage of months spent employed** **B2PCEMP**  
Percentage of time, measured in months, employed from the date the bachelor's degree was awarded to second follow-up.

**Average percentage of months spent out of the labor force** **B2PCOLF**  
Percentage of time, measured in months, out of the labor force from the date the bachelor's degree was awarded to second follow-up.

**Average percentage of months spent unemployed** **B2PCUNEM**  
Percentage of time, measured in months, unemployed from the date the bachelor's degree was awarded to second follow-up.

**Bachelor's degree institution sector** **SECTOR9**  
Indicates the level and control of the institution at which the respondent completed his or her bachelor's degree during the 2007–08 academic year. Control concerns the source of revenue and control of operations (public, private nonprofit, for-profit), and level concerns the highest degree or award offered by the institution in any program.

**Bachelor's degree major** **MAJORS4Y**  
The respondent's major or field of study for the 2007–08 bachelor's degree.

STEM major	Includes computer and information sciences; engineering and engineering technology; biological and physical sciences, science technology, mathematics, and agricultural sciences.
Computer and information sciences	Includes computer and information sciences.
Engineering and engineering technology	Includes engineering and engineering technology.
Biological and physical sciences, science technology, mathematics, and agricultural sciences	Includes biological and physical sciences, science technology, mathematics, and agricultural sciences.
Non-STEM major	Includes general studies and other; social sciences; humanities; health care fields; business; education; and other applied.

## VARIABLE

**Bachelor's degree major—Continued****MAJORS4Y**

General studies and other	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.
Social sciences	Includes family and consumer sciences; human sciences; social sciences; and psychology.
Humanities	Includes area, ethnic, cultural, gender, and group studies; English language and literature/letters; foreign languages, literatures, and linguistics; visual and performing arts; philosophy and religious studies; and history.
Health care fields	Includes allied health, pre-medical and pre-dentistry programs; mental and social health services; public health; veterinary medicine; and nursing.
Business	Includes business services and business, management, marketing, and related support services.
Education	Includes educational administration, curriculum and instruction, student counseling, teaching support, and special education.
Other applied	Includes personal and consumer services; manufacturing, construction, repair, and transportation; military technology and protective services; architecture; communications; public administration and human services; design and applied arts; law and legal studies; library sciences; and theology and religious vocations.

**Employment and enrollment status****B2LFP12**

Indicates respondent's full-time/part-time employment and enrollment status as reported in 2012. Employment status was self-reported, not based on the number of hours worked per week. Enrollment includes attending a college, university, or trade school for an additional degree or certificate but excludes professional certifications such as those earned through a week-long training course. The categories were as follows:

Employed only	Employed but not enrolled.
Both employed and enrolled	Employed and enrolled.
Enrolled only	Enrolled but not employed.
Not employed or enrolled	Not enrolled and not working but looking for work. Unemployed.
Not employed or enrolled	Not enrolled, not working, and not looking for work. Out of the labor force.

**Family status in 2012****B2MARCH**

Respondent's family status including dependent children and marital status.

**Hours per week in current primary job****B2CJHRS**

Hours worked per week at the respondent's current primary job. The current primary job is the job held at the time of the second follow-up interview at which the respondent had worked for more than 3 months. If more than one job met these criteria, the current primary job is the job with the highest number of hours worked per week.

**Number of jobs since bachelor's degree****B2TOTJOB**

Number of jobs respondent reported having since earning the 2007–08 bachelor's degree.

**Race/ethnicity****RACE**

Indicates a respondent's race/ethnicity with Hispanic or Latino origin as a separate category. All of the race categories exclude Hispanic origin unless specified.

White	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.
Black	A person having origins in any of the black racial groups of Africa.
Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
Asian	A person having origins in any of the peoples of the Far East, Southeast Asia, or the Indian subcontinent. This includes people from China, Japan, Korea, the Philippine Islands, India, and Vietnam.
Other	Includes persons reporting origins in any of the original peoples of North America and who maintain cultural identification through tribal affiliation or community recognition (American Indians), Alaska Natives, persons having origins in the Pacific Islands including Hawaii and Samoa, persons reporting having origins in a race not listed above, and persons reporting origins in more than one race.

**Sex****GENDER**

Indicates the sex of a graduate.



# Appendix B— B&B:08/12 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 such as postsecondary access, enrollment, curricula, attainment, and social impact.

B&B is a follow-up to the National Postsecondary Student Aid Study (NPSAS) and focuses exclusively on students who completed requirements for their baccalaureate degrees during the NPSAS academic year. Once these students are identified, B&B follows them to monitor their progress over a period of up to 10 years. 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, and the 2008/12 Baccalaureate and Beyond (B&B:08/12) wave of data collection is the second B&B follow-up of this cohort, which was first identified as part of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

As with previous B&B studies, B&B:08/12 includes a multimode student interview component that collects information on students' education and employment since graduation. B&B:08/09, the first follow-up of the B&B:08 panel, included a transcript component that provides researchers with additional institution- and student-level data for analysis.

## Data Sources for B&B:08/12

Data for B&B:08/12 were obtained from the following sources:<sup>1</sup>

- **Interview:** Data collected directly from sampled graduates via web, telephone, and field interviews.<sup>2</sup>
- **Student records:** Data from financial aid and registrar records at the NPSAS sample institution. 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 in 2008.
- **Integrated Postsecondary Education Data System (IPEDS):** U.S. Department of Education, 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.
- **National Student Clearinghouse (NSC):** A central repository and single point of contact for the collection of postsecondary enrollment, degree, and certificate records on behalf of participating postsecondary institutions.
- **Student transcript:** Student enrollment and achievement data collected from the NPSAS sample institution 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.

B&B:08/12 includes some data that were originally collected for NPSAS:08 and B&B:08/09. Table B-1 shows 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).

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<sup>1</sup> Additional third-party data sources may be included in the final data files.

<sup>2</sup> The B&B:08/09 data collection effort included field interviews; the NPSAS:08 and B&B:08/12 data collections were conducted by web and telephone only.

**Table B-1.**  
**Data sources for NPSAS:08, B&B:08/09, and B&B:08/12**

<b>Data source</b>	<b>NPSAS:08</b>	<b>B&amp;B:08/09</b>	<b>B&amp;B:08/12</b>
Interviews	N	N	N
Student records	N	CO	CO
Integrated Postsecondary Education Data System (IPEDS)	N	CO	R
Central Processing System (CPS)	N	R	R
National Student Loan Data System (NSLDS)	N	R	R
SAT	N	CO	CO
ACT	N	CO	CO
National Student Clearinghouse (NSC)	†	N	CO
Student transcripts	†	N	CO
College catalogs	†	N	CO

† Not applicable.

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); and 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

## Sample Design

Identification of the B&B:08/12 sample required a multistage process that began with selection of the NPSAS:08 sample of institutions and was followed by selection of students within institutions. A third stage confirmed that sample members were indeed baccalaureate recipients during the 2007–08 academic year and, therefore, eligible to be sampled for the B&B:08 cohort. All eligible sample members (as determined by the B&B:08/09 interview and the transcripts) were included in the B&B:08/12 sample.

### *Base-Year Study (NPSAS:08)*

To be eligible for inclusion in the B&B:08 cohort, students<sup>3</sup> 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.

<sup>3</sup> Sample members are referred to as “students” here because they were students during the 2007–08 academic year, when sample selection occurred. Many of the sample members were not students at the time of the B&B:08/12 study.

### ***Institution Universe for NPSAS:08***

To be eligible for the NPSAS:08 sample, institutions had to meet certain 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 had completed at least 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;
- been located in one of the 50 states, the District of Columbia, or Puerto Rico; and
- not been a U.S. service academy.

### ***Student Universe for NPSAS:08***

To be eligible for NPSAS:08, students had to be enrolled in a NPSAS-eligible institution in any term or course of instruction at any time from July 1, 2007, through June 30, 2008. Students also

- had to be enrolled in any of the following: 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;
- could not be currently enrolled in high school; and
- could not be enrolled solely 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 (IC), Fall Enrollment, and Completions files. Because the original sample of 1,630 institutions was drawn from the IPEDS:2004 -05 IC file, newly eligible institutions were added to produce a sample that was representative of those that qualified in the 2007 -08 academic year. To do this, the IPEDS:2005 -06 IC, Fall Enrollment, and Completions files were used to create an updated sampling frame of current NPSAS-eligible institutions. Through this process, about 10 institutions were added to the sample. In fall 2007, the decision

was made to include state-representative undergraduate student samples for four degree-granting institution sectors (public 4-year; public 2-year; private nonprofit 4-year; and for-profit 4-year) in six states: California, Georgia, Illinois, Minnesota, New York, and Texas.<sup>4</sup> To accomplish this, a supplemental sample was drawn and added to the existing sample. The final NPSAS:08 sample included 1,960 institutions. Of these institutions,<sup>5</sup> about 1,940 (99 percent) were eligible to participate in NPSAS:08. Table B-2 shows the number of institutions that were sampled, the number of eligible institutions, and the number and unweighted and weighted percentages of eligible institutions providing enrollment lists, by institutional characteristics.

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<sup>4</sup> These six states were selected based on the size of undergraduate enrollment in the four sectors; prior inclusion in the NPSAS:04 12-state sample with high levels of cooperation and participation in that survey; and unique or recently changed tuition and state grant policies that provided opportunities for comparative research and analysis.

<sup>5</sup> 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.

**Table B-2.**  
**Counts of sampled and eligible institutions and enrollment list participation rates, by institution characteristics: 2007–08**

Institution characteristics <sup>1</sup>	Sampled institutions	Eligible institutions	Institutions providing lists		
			Number	Unweighted percent	Weighted percent <sup>2</sup>
<b>All institutions</b>	<b>1,960</b>	<b>1,940</b>	<b>1,730</b>	<b>89.0</b>	<b>90.1</b>
Institution 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
Institution 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
Type 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

<sup>1</sup> Institution characteristics are based on data from the sampling frame that was formed from 2004–05 IPEDS and freshened from 2005–06 IPEDS.

<sup>2</sup> The base weight was used to produce the estimates in this column.

NOTE: Percentages are based on the unrounded count of institutions. 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).

### ***Student Sample for NPSAS:08***

Sample institutions provided lists of their eligible students who were then sampled by stratified systematic sampling with predetermined sampling rates that varied by student stratum. A “study respondent” is defined as any sample member who was eligible for the study and had valid data from any data source for the following variables:

- student type (undergraduate or graduate/first-professional);
- date of birth or age;
- sex; 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 nonfederal aid
  - student budget
  - race/ethnicity
  - parent education

Table B-3 shows the number of students sampled, the number of eligible students, and the unweighted and weighted percentages of study respondents, by institutional characteristics. See Cominole et al. (2010) for additional details on NPSAS:08 sampling.

**Table B-3.**  
**Counts of sampled and eligible students and response rates, by institution characteristics: 2007–08**

Institution characteristics <sup>2</sup>	Sampled students	Eligible students <sup>3</sup>	Study respondents <sup>1</sup>	
			Unweighted percent	Weighted percent <sup>4</sup>
<b>All students</b>	<b>137,800</b>	<b>132,800</b>	<b>96.2</b>	<b>95.7</b>
Institution 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
Institution 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
Type 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

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

<sup>2</sup> Institution characteristics are based on data from the sampling frame formed from the Integrated Postsecondary Education Data System (IPEDS):2004–05 and refreshed from IPEDS:2005–06.

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

<sup>4</sup> The base weight was used to produce the estimates in this column.

NOTE: Percentages are based on the unrounded count 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).

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

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 sufficient numbers to be included in B&B:08/09 and, thus, stratified them separately from other undergraduate students. Among potential baccalaureate recipients, business majors were undersampled to ensure that the sample did not consist primarily of business majors. Additionally, science, technology, engineering, and mathematics (STEM) majors; National Science and Mathematics Access to



Retain Talent (SMART) Grant recipients; and Academic Competiveness Grant (ACG) recipients were oversampled to allow sufficient numbers for analysis. Further, institutions that awarded proportionally higher amounts of education majors were oversampled for the same reason.

B&B:08-eligible persons are 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. Before the B&B:08/09 interview, eligibility for the B&B:08 cohort 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 or the enrollment list provided by the NPSAS:08 institution at the time of student sampling. Table B-4 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, institutional record, and/or enrollment list status.

**Table B-4.**  
**Potential B&B:08 cohort members, by eligibility source**

<b>Eligibility source</b>	<b>Count</b>
<b>Total</b>	<b>25,050</b>
Baccalaureate receipt confirmed in NPSAS:08 interview	18,000
Baccalaureate receipt confirmed in NPSAS:08 institutional record	4,630
Potential baccalaureate recipient on NPSAS:08 enrollment list	2,420

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 B-5 shows the eligibility status, based on transcripts, of the 18,000 B&B:08 sample members whose baccalaureate receipt was confirmed in the NPSAS:08 interview.

**Table B-5.**

**Eligibility status based on transcripts of the B&B:08 sample members with baccalaureate receipt confirmed in the NPSAS:08 interview**

<b>Eligibility status based on transcripts</b>	<b>Count</b>
<b>Total</b>	<b>18,000</b>
Confirmed B&B:08 eligible	15,050
Confirmed B&B:08 ineligible	1,060
No transcript	1,890

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 from the sampled institutions for the 7,050 NPSAS:08 interview nonrespondents who were either confirmed by the institutional record 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 determined to be eligible for B&B:08/09 based on transcripts. In order to have full population coverage of the B&B:08/09 sample, a subsample of 500 of the 5,150 NPSAS:08 interview nonrespondents was selected. Table B-6 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. See Wine et al. (2013) for additional details on B&B:08/09 sampling.

### ***B&B:08/09 Study Respondent Definition***

A B&B:08/09 “student interview respondent” is defined as any sample member who had a completed, partial, or abbreviated B&B:08/09 interview. A “student transcript respondent” is defined as any sample member who had a transcript provided by the NPSAS:08 institution. A “combined student interview and transcript respondent” is defined as both an interview and a transcript respondent.

As shown in table B-6, among 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.

**Table B-6.**  
**Counts of sampled and eligible students and response rates, by institution control: 2009**

Institution characteristics <sup>1</sup>	Sampled students	Eligible students	Study respondents	
			Unweighted response rate	Weighted response rate <sup>2</sup>
<b>Student interview</b>				
All students	18,500	17,160	87.7	78.3
Institution 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
<b>Student transcript</b>				
All students	18,500	17,160	93.6	92.3
Institution 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
<b>Combined student interview and transcript</b>				
All students	18,500	17,060	82.2	73.1
Institution control				
Public	10,810	9,840	82.8	74.4
Private nonprofit	6,750	6,330	81.2	71.2
For-profit	940	890	82.1	68.3

<sup>1</sup> Institution characteristics are based on data from the sampling frame formed from the Integrated Postsecondary Education Data System (IPEDS):2004–05 and refreshed from IPEDS:2005–06.

<sup>2</sup> The base weight was used to produce the estimates in this column.

NOTE: Percentages are based on the unrounded count of eligible students. Detail may not sum to totals because of rounding. The eligible student counts for the combined student interview and transcript differ from the counts for the student interview and student transcript due to perturbation.

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

## Second Follow-Up Study (B&B:08/12)

The B&B:08/12 sample consisted of all B&B:08/09 eligible respondents and all B&B:08/09 nonrespondents, resulting in a sample size of 17,160. Table B-7 shows the distribution of the B&B:08/12 sample by prior response status.

**Table B-7.**  
Distribution of the B&B:08/12 sample, by interview response status in NPSAS:08 and B&B:08/09

NPSAS:08 interview status	B&B:08/09 interview status	Count
<b>Total</b>		<b>17,160</b>
Respondent	Respondent	14,830
Respondent	Nonrespondent	1,880
Nonrespondent	Respondent	220
Nonrespondent	Nonrespondent	230

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).

### ***B&B:08/12 Study Respondent Definition***

There are three types of respondents in B&B:08/12, each corresponding to one of the three analysis weights created for use with B&B:08/12. A “bookend respondent” is defined as any NPSAS:08 study respondent who had a completed, partial, or abbreviated B&B:08/12 interview. A “panel respondent” refers to any NPSAS:08 study respondent who had a completed, partial, or abbreviated interview for both B&B:08/09 and B&B:08/12. A “transcript panel respondent” is defined as a panel respondent who also had a transcript provided by the NPSAS:08 institution.

As shown in table B-8, of the 17,110 eligible sample students, the weighted bookend response rate was 77 percent; the weighted panel response rate was 68 percent; and the weighted transcript panel response rate was 64 percent.

**Table B-8.**  
**Counts of sampled and eligible students and response rates, by institution control: 2012**

Institution characteristics <sup>1</sup>	Sampled students	Eligible students	Study respondents	
			Unweighted response rate	Weighted response rate <sup>2</sup>
<b>Bookend</b>				
All students	17,160	17,110	85.1	77.1
Institution control				
Public	9,910	9,880	85.5	78.3
Private nonprofit	6,360	6,340	84.9	74.5
For-profit	890	890	80.7	78.1
<b>Panel</b>				
All students	17,160	17,110	78.8	68.2
Institution control				
Public	9,910	9,880	79.1	69.7
Private nonprofit	6,360	6,340	79.1	66.4
For-profit	890	890	73.8	60.6
<b>Transcript panel</b>				
All students	17,160	17,010	73.9	64.1
Institution control				
Public	9,910	9,810	74.9	65.7
Private nonprofit	6,360	6,310	72.8	61.8
For-profit	890	880	71.4	59.6

<sup>1</sup> Institution characteristics are based on data from the sampling frame formed from the Integrated Postsecondary Education Data System (IPEDS):2004–05 and refreshed from IPEDS:2005–06.

<sup>2</sup> The base weight was used to produce the estimates in this column.

NOTE: Percentages are based on the unrounded count of eligible students. Detail may not sum to totals because of rounding. The eligible student counts for the transcript panel differ from the counts for the bookend and panel due to perturbation.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

## Perturbation

To protect the confidentiality of information about specific individuals, B&B:08/12 data were subject to perturbation procedures to minimize disclosure risks.

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, and most of those included in the related PowerStats release, have been imputed. The imputation procedures involved a four-step process. In the first step, missing variables were logically imputed. In the second step, the criteria used to match variables into imputation classes to stratify the dataset were identified so that imputations could be processed independently within each class. In the third step, an initial weighted sequential hot deck process was implemented (Cox 1980)<sup>6</sup> whereby missing data were replaced with valid data from donor records that matched the recipients on the matching criteria. In the fourth step, a cyclic  $n$ -partition hot deck process (Marker, Judkins, and Winglee 2002) was implemented to iteratively cycle through  $n$ -partition hot decks.

## Weighting

All estimates in this report were weighted to represent the target populations 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 multiplicity<sup>7</sup> at the institutional and student levels and unknown student eligibility for NPSAS:08, as well as for subsampling in B&B:08/09 and for nonresponse and poststratification in B&B:08/12.

A summary of all the weight components and their purposes is presented in table B-9. The three analysis weights are the product of the first seven NPSAS:08 weight components and the appropriate B&B weight components in table B-9.

There were three types of survey weights in B&B:08/12, each corresponding to one of the three study respondent definitions created for use in this survey. A “bookend analysis weight” was created for any NPSAS:08 study respondent who had a completed, partial, or abbreviated B&B:08/12 interview. A “panel analysis weight” was created for any NPSAS:08 study respondent who had a completed, partial, or abbreviated interview for both B&B:08/09 and B&B:08/12. A “transcript panel

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<sup>6</sup> The term *hot deck* refers to the fact that the set of potential donors comes from the same dataset. In contrast, *cold deck* refers to the fact that the donors come from an external dataset or source.

<sup>7</sup> After the NPSAS:08 institution sample selection, it was determined that in some cases either an institution had merged with another institution or 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.

analysis weight” was created for panel respondents who also had a transcript provided by the NPSAS:08 institution.

The intended use of the weights is as follows:

- **Bookend analysis weight** – for joint analysis of NPSAS items and items directly from or derived from the B&B:08/12 interview
- **Panel analysis weight** – for joint analysis of NPSAS items and items directly from or derived from the B&B:08/09 and B&B:08/12 interviews
- **Transcript panel analysis weight** – for joint analysis of items from all three previous rounds and items directly from or derived from the transcript

**Table B-9.**  
**Summary of components of the B&B:08/12 analysis weights: 2012**

<b>Weight component</b>	<b>Purpose</b>
<b>All weights</b>	
<b>NPSAS:08 adjustments</b>	
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&amp;B:08/09 adjustment</b>	
Student subsampling adjustment	Adjust the weights of the subset of NPSAS:08 interview nonrespondents who were included in the B&B:08/09 sample
<b>Bookend analysis weight</b>	
Bookend nonresponse adjustment	Adjust the weights to compensate for B&B:08/12 students who did not respond to NPSAS:08 or the 2012 interview
Bookend poststratification adjustment	Adjust the student weights to match NPSAS:08 weight sums and known population totals from the Integrated Postsecondary Education Data System (IPEDS) to ensure population coverage. Includes trimming and smoothing of the weights to reduce unequal weighting.
<b>Panel analysis weight</b>	
Panel nonresponse adjustment	Adjust the weights to compensate for B&B:08/12 students who did not respond to NPSAS:08 or the 2009 or 2012 interview
Panel 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.
<b>Transcript panel analysis weight</b>	
Transcript panel nonresponse adjustment	Adjust the weights to compensate for B&B:08/12 students who did not respond to NPSAS:08 or the 2009 or 2012 interview or for whom a transcript was not collected
Transcript panel poststratification adjustment <sup>1</sup>	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.

<sup>1</sup> NPSAS:08 weights were revised in August 2013. These revised weights were used for the B&B:08/12 poststratification weight sums.

NOTE: All adjustments in the bookend, panel, and transcript panel weights are B&B:08/12 adjustments.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).



## Quality of Estimates

### ***Bias Analysis: General Description***

NCES Statistical Standard 4-4-1 states that “any survey stage of data collection with a unit or item response rate less than 85 percent must be evaluated for the potential magnitude of nonresponse bias before the data or any analysis using the data may be released. Estimates of survey characteristics for nonrespondents and respondents are required to assess the potential nonresponse bias” (Seastrom 2012).

### ***Bias Analysis: Institution-Level***

As shown in table B-2, the NPSAS:08 institution weighted response rate was 90 percent overall and below 85 percent for two of the nine types of institutions (private nonprofit less-than-4-year and for-profit less-than-2-year). A nonresponse bias analysis was conducted during NPSAS:08 for these two types of institutions. However, these two types of institutions are irrelevant to B&B:08/12 because they do not include baccalaureate recipients. Interested readers can refer to Cominole et al. (2010) for more information regarding the institution bias analysis.

### ***Bias Analysis: Student-Level***

As shown in table B-3, the NPSAS:08 weighted study response rate for students was above 85 percent overall and for each type of institution, so student-level nonresponse bias analysis for NPSAS:08 was not necessary for any type of institution. As shown in table B-6, the B&B:08/09 weighted response rate for students was below 85 percent overall and for each type of institution for the student interview and for the combined student interview and transcript. Therefore, a student-level nonresponse bias analysis was conducted for B&B:08/09. See Wine et al. (2013) for bias analysis details.

As shown in table B-8, the bookend, panel, and transcript panel weighted response rates were below 85 percent overall and for all three types of institutions, so a nonresponse bias analysis was conducted overall and within each type of institution. The nonresponse bias was estimated for variables known for most respondents and nonrespondents, and some variables were added that were not included in the nonresponse weight adjustment. The following variables were used for nonresponse bias analysis:<sup>8</sup>

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<sup>8</sup> For the continuous variables, except for age, categories were formed based on quartiles.

- Type of institution
- 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 [categorical])
- Federal aid receipt (yes/no)
- Institutional aid receipt (yes/no)
- State aid receipt (yes/no)
- Any aid receipt (yes/no)
- Major (categorical)
- Sex
- Age as of NPSAS:08 (categorical)
- Central Processing System (CPS) match as of NPSAS:08 (yes/no)

First, for the variables listed above, the nonresponse bias was estimated by comparing estimates from base-weighted respondents with those of both nonrespondents and the full sample to determine if the differences were statistically significant at the 5 percent level. The two comparisons yielded identical bias estimates but not always the same significance-testing results. Second, nonresponse adjustments were computed to reduce or eliminate nonresponse bias for key variables included in the models. Third, using base weights adjusted for nonresponse, bias was re-estimated and statistical tests were performed to check for any remaining significant nonresponse bias. Finally, to better understand the effect of poststratification on efforts to reduce nonresponse bias, two additional sets of estimates were created. The first, the difference between respondent means before and after poststratification, represents the effect of poststratification on nonresponse adjustments. The second, the difference between base-weighted full sample means and the poststratified respondent means, represents the cumulative effect of all weighting and adjustment steps. Bias estimates and differences were suppressed for variable categories with fewer than 30 nonrespondents.

As shown in table B-10, the nonresponse weighting adjustment eliminated some, but not all, significant bias on these characteristics. Before weighting, the percentage of variable categories that were significantly biased ranged from 2.9 percent among for-profit institutions with the panel and transcript panel weights to 49.0 percent among public institutions with the panel weight. The percentage of variable categories that remained significantly biased after the nonresponse weight adjustment

ranged from 0.0 percent among private nonprofit institutions with the bookend and transcript panel weights to 13.8 percent among for-profit institutions with the bookend weight. The mean and median estimated relative bias among for-profit institutions increased after the nonresponse weight adjustment, but this increase affected a small portion of the students (5.2 percent of eligible sample members, unweighted). Overall, significant bias remained for two or fewer categories of major and both categories of sex for each analysis weight. Significant bias estimates ranged from -2.0 to 2.0 percent. Among public institutions, two or fewer categories of institution enrollment and three or fewer categories of major had remaining significant bias for each analysis weight. Additionally, both categories of sex were significantly biased for the transcript panel weight. The significant bias estimates ranged from -1.9 to 2.3 percent. Among private nonprofit institutions, one category of region had significant bias of -1.5 percent for the panel weight, and no variables had significant bias remaining for the other two weights. Among for-profit institutions, two or fewer categories of enrollment had remaining significant bias for each analysis weight, and both categories of state aid status had significant bias for the bookend weight. The bias estimates ranged from -6.1 to 5.0 percent.

As shown in table B-11, across all three weights, the mean and median absolute differences between means for respondents before and after poststratification adjustment were less than 2.0 for the overall, public, and nonprofit institutions and greater than 4.4 for the for-profit institutions. The differences between means for the full sample and respondents after poststratification adjustment were similar, with differences less than 2.0 for the overall, public, and nonprofit institutions and greater than 3.4 for the for-profit institutions.

**Table B-10.**  
**Summary of nonresponse bias analysis for each analysis weight, by type of institution: 2012**

Nonresponse bias statistics	Bookend				Panel				Transcript panel			
	Overall	Public	Private non-profit	For-profit	Overall	Public	Private non-profit	For-profit	Overall	Public	Private non-profit	For-profit
<b>Before weight adjustments</b>												
Mean estimated relative bias	4.31	3.64	5.80	9.64	5.23	5.12	6.61	10.21	5.69	5.94	8.44	10.76
Median estimated relative bias	3.35	3.05	4.63	6.46	4.43	4.19	5.42	8.93	4.82	5.02	6.37	8.32
Percent of variable categories significantly biased	41.38	41.67	42.22	6.90	44.83	48.98	40.82	2.94	44.07	42.86	37.74	2.86
<b>After nonresponse weight adjustments</b>												
Mean estimated relative bias	1.20	2.20	3.30	11.58	1.48	3.22	4.21	15.71	1.59	3.83	5.98	14.67
Median estimated relative bias	#	1.31	2.44	6.73	#	1.50	2.38	12.11	#	1.93	3.14	11.26
Percent of variable categories significantly biased	5.17	4.17	#	13.79	6.90	10.20	2.04	2.94	5.08	10.20	#	2.86

# Rounds to zero.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

**Table B-11.**  
**Summary of differences between means for each analysis weight, by type of institution: 2012**

Summary statistics	Bookend				Panel				Transcript panel			
	Overall	Public	Private nonprofit	For-profit	Overall	Public	Private nonprofit	For-profit	Overall	Public	Private nonprofit	For-profit
<b>Difference between means for respondents before and after poststratification adjustment<sup>1</sup></b>												
Mean absolute difference across characteristics	1.32	1.38	1.91	4.80	1.29	1.40	1.83	5.44	1.19	1.34	1.57	5.09
Median absolute difference across characteristics	0.77	0.99	1.12	4.49	0.80	0.75	1.22	5.75	0.73	0.97	1.24	4.84
<b>Difference between means for full sample and respondents after poststratification adjustment<sup>2</sup></b>												
Mean absolute difference across characteristics	1.32	1.43	1.81	3.80	1.31	1.53	1.81	3.87	1.22	1.43	1.82	3.81
Median absolute difference across characteristics	0.77	0.80	1.45	3.92	0.80	0.94	1.52	3.88	0.74	1.02	1.52	3.48

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

<sup>2</sup> Full sample is weighted using the base weight. Respondents after poststratification adjustment are weighted using the base weight, adjusted for nonresponse and poststratification.

NOTE: Variable categories with fewer than 30 nonrespondents were suppressed for calculations in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

### ***Bias Analysis: Item-Level***

NCES Statistical Standard 4-4-3A states: “For an item with a low total response rate, respondents and nonrespondents can be compared on sampling frame and/or questionnaire variables for which data on respondents and nonrespondents are available. Base weights must be used in such analysis. Comparison items should have very high response rates. This approach may be limited to the extent that items available for respondents and nonrespondents may not be related to the low response rate item being analyzed” (Seastrom 2012).

Moreover, NCES Statistical Standard 1-3-5 states: “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. . . . In the case of constructed variables, the numerator includes cases that have available data for the full set of items required to construct the variable, and the denominator includes all respondents eligible to respond to all items in the constructed variable” (Seastrom 2012). The item response rate is calculated as:

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

A student is defined as an “item respondent” for an analytic variable if that student had data for that variable from any source, including logical imputation. “Item nonrespondents” for analytic variables are students who did not have data for that variable from any source. NCES Standard 1-3-5 also states that response rates for composite variables must account for missing inputs prior to imputation. As shown in table B-12, the weighted item response rates for items used in this First Look report for all students ranged from 90 percent to 100 percent. The weighted item response rates by type of institution ranged from 84 percent to 100 percent.

One item had a weighted response rate below 85 percent. As shown in table B-12, the response rate for the item RACE (race/ethnicity) was below 85 percent at for-profit institutions. A nonresponse bias analysis was conducted for this item. The procedures used for the item-level nonresponse bias analysis are the same as those

used for the student-level nonresponse bias analysis presented above, and a subset of the variables used for the student-level analysis are used for the item-level analysis.<sup>9</sup>

The percentage of variable categories for which the item RACE had statistically significant bias prior to imputation was 24.0 percent for students in for-profit institutions. The mean and median percent relative absolute biases were 22.6 and 15.1 percent, respectively, for students in for-profit institutions.

**Table B-12.**  
Weighted item response rates for all B&B:08/12 respondents, by type of institution: 2012

Variable	Variable label	All students	Public	Private nonprofit	For-profit
AGEATBA	Age at bachelor's degree award	100.0	100.0	99.9	100.0
B2CJHRS	Hours per week in current primary job	96.7	96.9	96.5	95.7
B2CJSAL	Annualized salary in current primary job	95.2	95.5	94.6	94.8
B2CPSTGRD	Enrolled in degree program since bachelor's degree	100.0	100.0	100.0	100.0
B2LFP12	Employment and enrollment status	96.6	96.5	96.4	98.1
B2MARCH	Family status in 2012	98.2	98.3	98.0	97.5
B2PCEMP	Percentage of months spent employed	90.4	91.1	89.3	88.1
B2PCOLF	Percentage of months spent out of the labor force	90.3	91.1	89.2	87.5
B2PCUNEM	Percentage of months spent unemployed	90.3	91.1	89.2	87.5
B2TOTJOB	Number of jobs since bachelor's degree	94.7	95.3	94.0	91.5
GENDER	Sex	100.0	100.0	100.0	100.0
MAJORS4Y	Bachelor's degree major	98.1	97.9	98.5	98.2
RACE	Race/ethnicity	95.7	96.5	95.8	84.3
SECTOR9	Bachelor's degree institution sector	100.0	100.0	100.0	100.0

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, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

## Variance Estimation

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 in the analysis file to compute 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

<sup>9</sup> Variables that were added to the student-level nonresponse bias analysis and not included in the nonresponse weight adjustment were not included in the item-level nonresponse bias analysis.

any estimate,  $\hat{\theta}$ , can be estimated by replicating the estimation procedure for each replicate and computing a simple variance of the replicate estimates:

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

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 ( $B = 200$  for B&B:08/12). Once the replicate weights are provided, this estimate can be produced by most survey software packages (e.g., *SUDAAN* [RTI International 2012]).

The replicate weights were produced using a methodology combining approaches developed by Flyer (1987) and Kott (1988). The B&B:08/12 application of the method incorporated the finite population correction factor at the first stage (NPSAS:08 institution sampling) only.

## 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 issues, including but not limited to nonresponse, coding and data entry errors, misspecification of composite variables, and inaccurate imputations. In a study like B&B:08/12, there are multiple sources of data for some variables (Central Processing System, Institutional Record, Student Interview, National Student Clearinghouse, etc.), and reporting differences can occur in each data source. Data swapping and other forms of perturbation, implemented to protect respondent confidentiality, can also lead to inconsistencies.

Sampling errors exist in all sample-based datasets, including B&B:08/12. 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 report, each estimate's standard error was calculated using bootstrap replication procedures and can be produced using PowerStats. Table B-13 provides the standard errors for the estimates presented in table 1. Standard errors for estimates presented in tables 1 -6 can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2014141>.



Table B-13.

Standard errors for table 1: DEMOGRAPHIC AND UNDERGRADUATE COLLEGE CHARACTERISTICS: Percentage distribution of 2007–08 bachelor's degree recipients by demographic and enrollment characteristics: 2012

Demographic and enrollment characteristics	Total
<b>Total</b>	†
Sex	
Male	#
Female	#
Race/ethnicity	
White	0.68
Black	0.38
Hispanic	0.44
Asian	0.35
Other	0.25
Age at bachelor's degree award	
23 or younger	0.68
24–29	0.50
30 or older	0.57
Bachelor's degree major	
STEM major	0.33
Computer and information sciences	0.15
Engineering and engineering technology	0.21
Biological and physical sciences, science technology, mathematics, and agricultural sciences	0.28
Non-STEM major	0.33
General studies and other	0.24
Social sciences	0.29
Humanities	0.37
Health care fields	0.21
Business	0.33
Education	0.26
Other applied	0.38
Bachelor's degree institution sector	
Public 4-year	0.02
Private nonprofit 4-year	#
For-profit 4-year	#
Family status in 2012	
Unmarried with no dependent children	0.73
Unmarried with dependent children	0.27
Married with no dependent children	0.61
Married with dependent children	0.56

† Not applicable.

# Rounds to zero.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

## **Comparing B&B:08/12 Estimates to Prior B&B Estimates**

Comparison of results with prior cohorts 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 B&B:08/12.

First, prior to NPSAS:04, institutions that only offered correspondence courses were not eligible for NPSAS. Beginning in 2004, NPSAS has included such institutions if they were eligible to distribute Title IV student aid. This change affects comparisons between the B&B:93 and B&B:2000 cohorts and the subsequent B&B:08 cohort.

Second, as of NPSAS:2000, the survey was restricted to institutions participating in Title IV student aid programs. Based on NPSAS:96 data, only about 1 percent of sampled undergraduates were attending an institution that was 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 for-profit institutions. When comparing estimates from prior B&B cohorts with those of the B&B:08 cohort, analysts may want to exclude cases that were sampled from an institution that was not eligible to participate in Title IV aid programs (T4ELIG) in the prior studies (B&B:93 and B&B:2000).

## **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,<sup>10</sup> and weighted sample sizes for the estimates. If

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<sup>10</sup> 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.

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 to producing 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 [nces.info@ed.gov](mailto:nces.info@ed.gov).