

STATS IN BRIEF

U.S. DEPARTMENT OF EDUCATION

JULY 2012

NCES 2012-213

New Americans in Postsecondary Education

A Profile of Immigrant and Second-Generation American Undergraduates

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Statistics in Brief publications present descriptive data in tabular formats to provide useful information to a broad audience, including members of the general public. They address simple and topical issues and questions. They do not investigate more complex hypotheses, account for inter-relationships among variables, or support causal inferences. We encourage readers who are interested in more complex questions and in-depth analysis to explore other NCES resources, including publications, online data tools, and public- and restricted-use datasets. See nces.ed.gov and references noted in the body of this document for more information.

The number and proportion of immigrants within the U.S. population has increased in recent decades. From 1970 to 2007, the U.S. foreign-born population more than tripled to more than 37 million, or one-in-eight U.S. residents (U.S. Census Bureau 1997, 2008).¹ Immigrants' overall education attainment rates, however, lag behind those of the U.S.-born population. Among adults aged 25 and older in 2007, similar percentages of the foreign- and U.S.-born populations had bachelor's degrees (27 percent vs. 28 percent, respectively), but a lower proportion of the foreign-born (44 percent) than the U.S.-born (56 percent) population had completed some college but had not earned a bachelor's degree (Crissey 2009). Postsecondary enrollment and attainment rates differ among immigrants depending on their country of origin and age at immigration, and among individuals born in the United States, whether they had parents who were immigrants or were born in the United States (Patten 2012; Baum and Flores 2011; Erisman and Looney 2007).

¹ About 9,740,000 foreign-born individuals resided in the United States in 1970 and about 37,279,000 in 2007. For more information, see table 54 (<http://www.census.gov/prod/3/97pubs/97statab/pop.pdf>) for 1970 and table 41 (<http://www.census.gov/prod/2008pubs/09statab/pop.pdf>) for 2007.

This report was prepared for the National Center for Education Statistics under Contract No. ED-07-CO-0104 with MPR Associates, Inc. Mention of trade names, commercial products, or organizations does not imply endorsement by the U.S. Government.

This Statistics in Brief describes the undergraduate experiences of students who immigrated to the United States or who had at least one immigrant parent (second-generation Americans). The analysis compares these two groups with all undergraduates (excluding foreign students) and with third- or higher generation American undergraduates whose parents were born in the United States. The findings are based on data from the 2007–08 National Postsecondary Student Aid Study (NPSAS:08), a nationally representative sample of more than 100,000 students enrolled in U.S. postsecondary institutions.² NPSAS is the most comprehensive source of national data on the experiences of undergraduates in the United States and includes information on students' academic preparation for college, the types of institutions they attend, and their experiences while enrolled.

“Generational status,”³ or whether an individual or one or more of an individual's parents was born outside of the United States, is associated with educational and socioeconomic outcomes such as the acquisition of English language skills, educational attainment, and income (Kao and Tienda 1995; Kao and Thompson 2003). Generational status, therefore, should be

² The survey includes only institutions eligible for Title IV federal student aid funds.

³ See <http://www.census.gov/population/foreign/about/faq.html> for more information on generational status.

taken into account when examining these outcomes (Oropesa and Landale 1997; Kaufman, Chavez, and Lauen 1998; Zhou 1997; Rumbaut 2004). This report uses the following definitions of immigrant and generational status (Glick and White 2004; Mosisa 2006):

Immigrants: Foreign-born students who are U.S. citizens with one or both parent(s) born outside the United States, permanent residents, or eligible noncitizens (i.e., those admitted into the United States as legal immigrants for the purpose of obtaining permanent resident alien status).⁴ In 2007–08, some 54 percent of first-generation immigrants were U.S. citizens, and the others either were permanent residents or admitted as legal immigrants for the purpose of obtaining permanent resident status (figure 1).

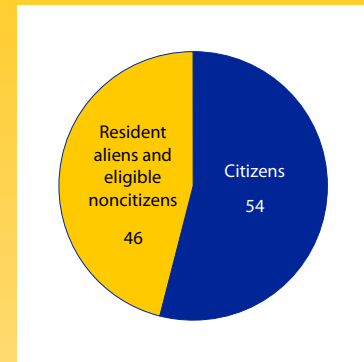
Second-generation Americans: Students born in the United States with at least one foreign-born parent (i.e., children of immigrants).

Third-generation or higher Americans: If both their parents were born in the United States, students are considered third-generation or higher regardless of where they were born. This definition is consistent with that used in other key studies (Kao and Tienda 1995; Hagy and Staniec 2002).

⁴ Foreign students (“nonresident aliens”) are not included in this analysis. If the legal immigration status of students was not clear or conflicted among the sources of data, precedence was given to foreign student status. For additional information on how postsecondary institutions report students' immigration status, see “nonresident alien” and “resident alien” in <http://nces.ed.gov/IPEDS/reic/definitions.asp>.

FIGURE 1.

CITIZENSHIP STATUS
Percentage distribution of
immigrant undergraduates
by their citizenship status:
2007–08



NOTE: Immigrant undergraduates are foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship. Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

This Statistics in Brief begins with an overview of immigrant and second-generation American undergraduates nationwide and in the six states for which representative data are available,⁵ and then focuses on the most prevalent racial/ethnic groups among

⁵ NPSAS:08 included state-representative samples from California, Georgia, Illinois, Minnesota, New York, and Texas to allow policy-relevant analyses at the state level. The states were selected based on (1) the size of undergraduate enrollment in the four sectors; (2) prior inclusion in the NPSAS:04 12-state sample with high levels of cooperation and participation in that survey; and (3) states with unique or recently changed tuition and state grant policies that provide opportunities for comparative research and analysis (Wei et al. 2009).

these two groups—Asian and Hispanic students. Asian students reported the Far East, Southeast Asia, or the Indian subcontinent as their region of origin, and Hispanic students reported their country or region of origin as Cuba, Mexico, South and Central America, or other Hispanic country or region. Undergraduates in Puerto Rico or who reported that they were of Puerto Rican descent are excluded from the analysis because their immigrant or generational status cannot be determined with available data (see appendix).

Some limitations should be noted regarding the data and analysis presented in this study, which does not include a number of immigrant characteristics that may be associated with students' postsecondary experiences and outcomes. For example, educational outcomes among immigrants may vary by age at immigration and/or by region and country of origin (Baum and Flores 2011; Rumbaut 2004). The academic attainment levels of immigrant and second-generation students from some countries or regions exceed that of their third- or higher generation peers, leading some scholars to describe these groups as having an "immigrant advantage" (Baum and Flores 2011). NPSAS, however, does not collect information on when immi-

grants arrived in the United States or countries or region of origin for non-Hispanic immigrant groups. Additionally, small sample sizes preclude separate analyses by country of origin among Hispanic immigrants. The data also do not include information on the type or level of education that students' parents might have completed in another country. Finally, NPSAS does not collect information on whether students are in the United States legally and consequently can provide no information on undocumented immigrants.

All comparisons of estimates were tested for statistical significance using the Student's *t*-statistic, and all differences cited are statistically significant at the $p < .05$ level.⁶

⁶No adjustments for multiple comparisons were made. The standard errors for the estimates can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

STUDY QUESTIONS

1 How large is the U.S. undergraduate population of immigrant and second-generation American students, and how does their share of the undergraduate population vary across selected states and among racial/ethnic groups?

2 Do the most prevalent immigrant and second-generation American undergraduates—those of Asian and Hispanic descent—differ from each other and from undergraduates overall in terms of age, socioeconomic status, and family background characteristics?

3 How do Hispanic and Asian immigrant and second-generation American undergraduates compare with each other and with all undergraduates on key indicators of academic preparation, such as type of high school completion, high school coursetaking, and college remediation?

4 In which institution sectors and fields of study do Hispanic and Asian immigrant and second-generation American undergraduates enroll, and what proportions enroll full time? How do their enrollment patterns compare with those of all undergraduates?

KEY FINDINGS

- Nationally, in 2007–08, about 23 percent of all undergraduates were immigrants (10 percent) or second-generation Americans (with an immigrant parent) (13 percent). The proportion of these undergraduates varied across the six states examined in the study, ranging from nearly double the national percentage in California (45 percent) to 14 percent in Georgia.
- Asian and Hispanic students constituted the majority of immigrant and second-generation American undergraduates. Asians made up the plurality (30 percent) of immigrant undergraduates, while Hispanics made up the plurality (41 percent) of second-generation American undergraduates.

- Hispanic and Asian immigrant and second-generation American undergraduates differed from each other and from all undergraduates on several background characteristics, including whether their parents had attended college.⁷ Among Hispanics, a majority of both immigrant and second-generation Americans (55 percent and 54 percent, respectively) had parents who had not attended a postsecondary institution, compared with 33 percent of all undergraduates. Among Asian students, 38 percent of immigrant and 28 percent of second-generation American undergraduates had parents who had not attended college.
- Immigrant Asian and Hispanic students enrolled in community

colleges at higher rates (54 percent and 51 percent, respectively) than did all undergraduates (44 percent). The reverse, however, was observed for Asian second-generation Americans, who attended these institutions at a lower rate (40 percent) and 4-year colleges at a higher rate (55 percent) than both their Hispanic counterparts (51 percent at community colleges and 46 percent at 4-year colleges) and all undergraduates (44 percent at community colleges and 46 percent at 4-year colleges). Among immigrant and second-generation American undergraduates, larger percentages of Hispanic students (12 percent of each group) enrolled in for-profit institutions than did their Asian counterparts (7 percent among immigrants and 5 percent among second-generation Americans).

⁷ As measured by the highest education level of either parent.

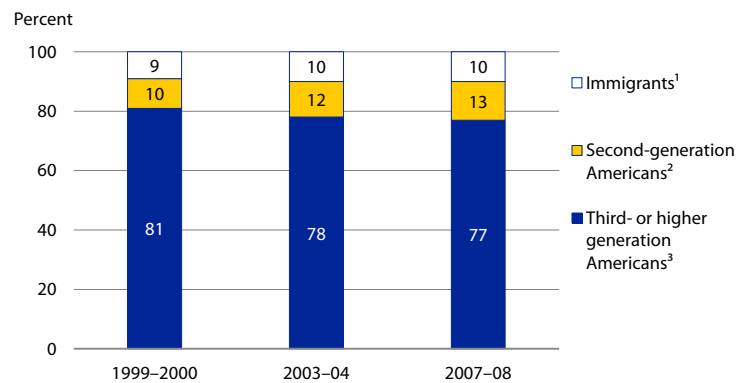
1

How large is the U.S. undergraduate population of immigrant and second-generation American students, and how does their share of the undergraduate population vary across selected states and among racial/ethnic groups?

Immigrant and second-generation American students constituted about 23 percent (figure 2) of the approximately 22.3 million undergraduates in U.S. postsecondary education in 2007–08 (Knapp, Kelly-Reid, and Ginder 2009). In 1999–2000, about 19 percent of all undergraduates were either immigrants or second-generation Americans.

FIGURE 2.

UNDERGRADUATES
Percentage distribution of undergraduates by immigrant and generation status: 1999–2000, 2003–04, and 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

³ U.S.- and foreign-born undergraduates with both parents born in the United States.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. In NPSAS:08, response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2003–04, and 2007–08 National Postsecondary Student Aid Studies (NPSAS:2000, NPSAS:04, and NPSAS:08).

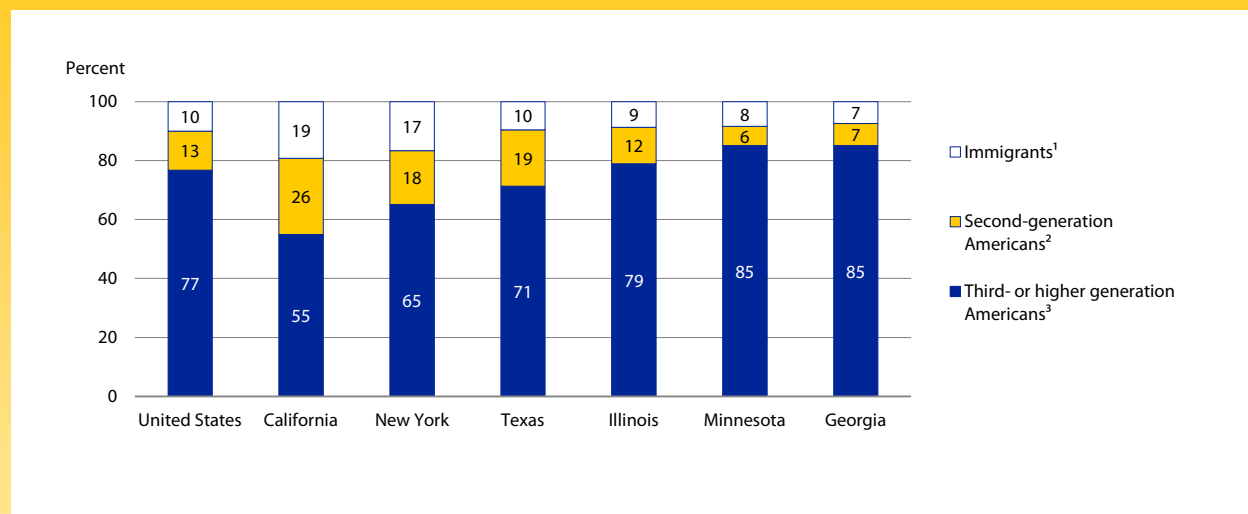
In 2007–08, 10 percent of all undergraduates were immigrants, and 13 percent were second-generation Americans (figure 3). These national estimates, however, do not capture the variation in undergraduate immigrant and second-generation American populations among states. Among the six

states with representative samples in the study, the combined group of immigrant and second-generation American students in California, New York, and Texas accounted for a larger percentage of undergraduates than they did nationwide, while those in Illinois, Minnesota, and Georgia accounted

for a smaller percentage. In California, for example, 45 percent of undergraduates were either immigrants or second-generation Americans (19 percent and 26 percent, respectively). By contrast, immigrants and second-generation Americans each accounted for 7 percent of undergraduates in Georgia (14 percent total).

FIGURE 3.

UNDERGRADUATES BY IMMIGRANT AND GENERATION STATUS IN SIX STATES
Percentage distribution of undergraduates by immigrant and generation status in the United States and selected states: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, or noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

³ U.S.- and foreign-born undergraduates with both parents born in the United States.

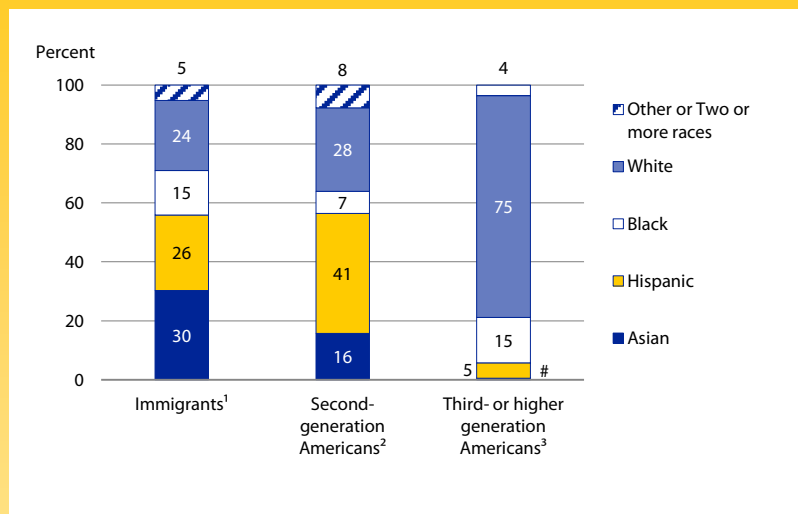
NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Response rates for IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

The majority of immigrant and second-generation American undergraduates (56 percent and 57 percent, respectively) were of Hispanic or Asian descent (figure 4). Asians accounted for the largest proportion (30 percent) of immigrant undergraduates, and Hispanics the largest proportion (41 percent) of second-generation American undergraduates. White non-Hispanics made up 24 percent of immigrant and 28 percent of second-generation American undergraduates. Black non-Hispanics made up 15 percent and 7 percent of immigrant and second-generation American undergraduates, respectively.

FIGURE 4.

RACE/ETHNICITY
Percentage distribution of immigrant, second-generation American, and third- or higher generation American undergraduates by race/ethnicity: 2007–08



Percentage for third- or higher generation Asian undergraduates rounds to zero.

¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

³ U.S.- and foreign-born undergraduates with both parents born in the United States.

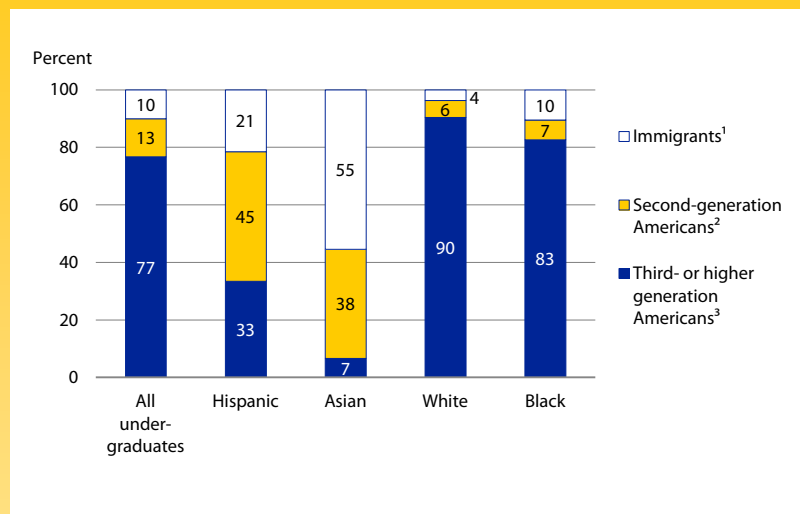
NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Black includes African American; Hispanic includes Latino; and Other or Two or more races includes American Indian or Alaska Native and Native Hawaiian or other Pacific Islander. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

Immigrant and generational status sharply distinguished Hispanic and Asian undergraduates from all undergraduates. About 66 percent of Hispanic and more than 90 percent of Asian undergraduates were immigrants or second-generation Americans, compared with 17 percent of Black and 10 percent of White undergraduates (figure 5). These characteristics also distinguished Asian and Hispanic undergraduates from each other. More than half of all Asian undergraduates were immigrants (55 percent), compared with 21 percent of Hispanic undergraduates. Conversely, Hispanic undergraduates were primarily second-generation Americans (45 percent vs. 38 percent among Asians).

FIGURE 5.

RACE/ETHNICITY
Percentage distribution of undergraduates of various racial/ethnic backgrounds by immigrant and generation status: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

³ U.S.- and foreign-born undergraduates with both parents born in the United States.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Black includes African American and Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, and Two or more races are not shown but included in the data for all undergraduates. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

2

Do the most prevalent immigrant and second-generation American undergraduates—those of Asian and Hispanic descent—differ from each other and from undergraduates overall in terms of age, socioeconomic status, and family background characteristics?

Hispanic and Asian immigrant and second-generation American undergraduates differed from one another and from all undergraduates on several background and socioeconomic characteristics, including age, low-income status, parents' education levels, and whether English was the primary language spoken at home.

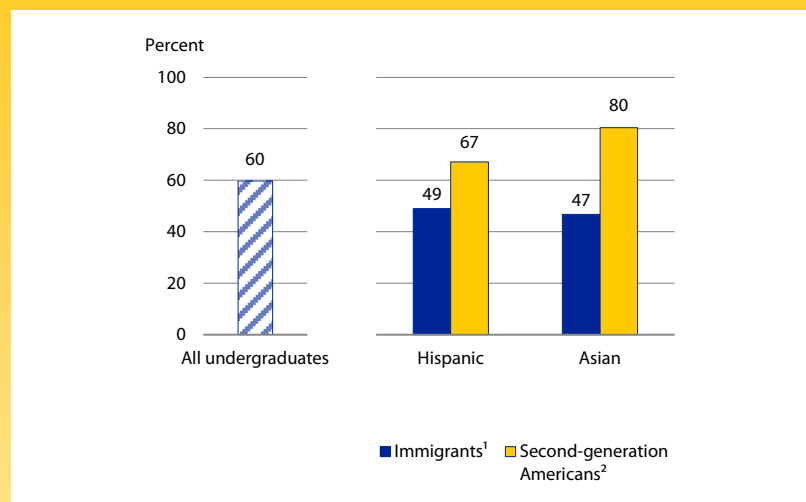
For financial aid purposes, undergraduates are considered independent of their parents if they are married, have dependents of their own, or are 24 years of age or older (Wei 2010). Undergraduates age 23 or younger are considered to be of traditional college age and have different postsecondary attendance patterns than students who attend college when they are older (Adelman 2005). For example, higher percentages of older than younger undergraduates attend college part time or work full time while enrolled, and both of these factors are associated with longer times

to degree and lower rates of completion (Choy 2002). When divided into younger (or traditional-age) and older age groups (23 or younger and 24 or older), a larger percentage of immigrant than all undergraduates were age 24 or older. The reverse was found for second-generation American students (figure 6).

Roughly half of immigrant Asian (47 percent) and Hispanic (49 percent) undergraduates were age 23 or younger, compared with 60 percent of all undergraduates; among second-generation American students, 67 percent of Hispanics and 80 percent of Asians were in the younger age group.

FIGURE 6.

TRADITIONAL AGE UNDERGRADUATES
Percentage of undergraduates age 23 or younger among all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

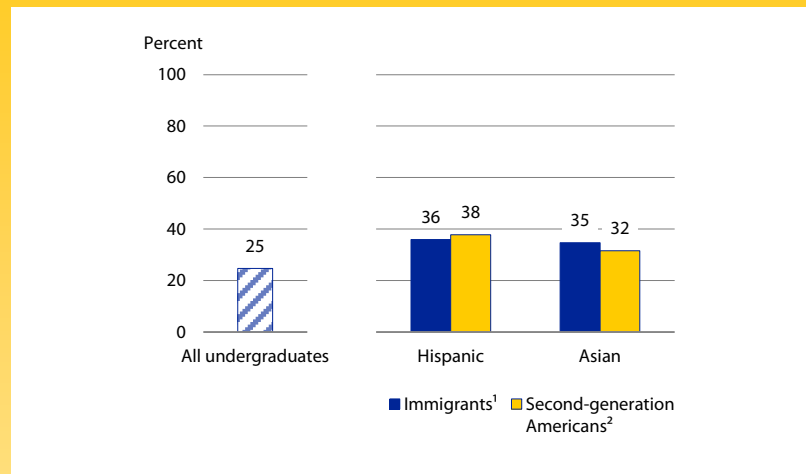
NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black or African American, White, Other or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

In both groups, proportionally more Asians and Hispanics than all undergraduates were in the lowest income group (figure 7). Specifically, 32–38 percent of Asian and Hispanic immigrant and second-generation American undergraduates were in the lowest income group, compared with 25 percent of all undergraduates.⁸

FIGURE 7.

LOW-INCOME STATUS
Percentage of low-income undergraduates among all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

NOTE: Low-income dependent undergraduates had family incomes of approximately \$36,000 or less, and low-income independent undergraduates had personal incomes (including those of their spouses) of approximately \$11,000 or less in 2006, the year used for 2007–08 financial aid calculations. These income levels were at or below the 25th percentile of the income distribution for all undergraduates. Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately, but are included in the data for all undergraduates. Response rates for the variables IMMIGEN (immigrant generational status), PCTALL (income percentile rank for all students), and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

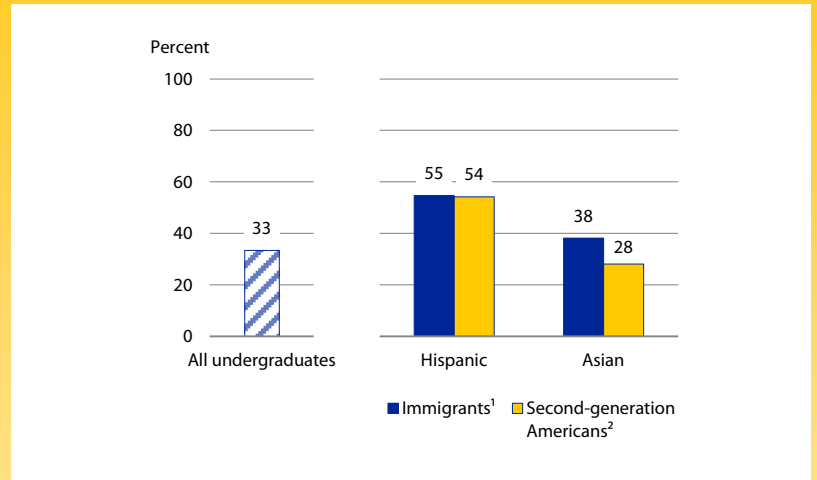
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

⁸ The low-income category includes parent incomes below \$36,100 for dependent undergraduates and below \$11,000 (including spouses' income) for independent undergraduates, amounts that were at or below the 25th percentile for each group. Students are considered independent of their parents for financial aid purposes if they are 24 years of age or older, are married, have dependents, are military veterans, or are orphans or wards of the court. In some cases, financial aid officers may determine students younger than age 24 without these qualifying characteristics to be financially independent of their parents. For more information, see *Web Tables—Student Financing of Undergraduate Education: 2007–08* (Wei 2010).

Past research indicates that parent education levels are associated with students' educational expectations and attainment and vary by country of origin among students who are immigrants themselves or have immigrant parents (Feliciano 2006). In 2007–08, Asian and Hispanic immigrant and second-generation American students differed in terms of whether their parents attended postsecondary education, and both groups differed from all undergraduates in this regard (figure 8). Some 38 percent of Asian immigrant and 28 percent of Asian second-generation American undergraduates had parents who did not attend a postsecondary institution, compared with more than one-half of Hispanic immigrant and second-generation American students (55 percent and 54 percent, respectively).

FIGURE 8.

PARENT EDUCATION
Percentage of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates who had parents that did not participate in postsecondary education: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

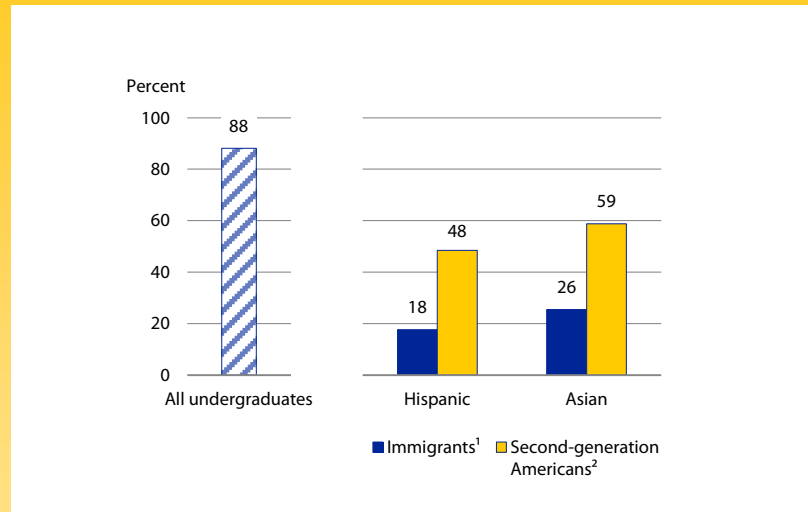
NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variables IMMIGEN (immigrant generational status), PAREduc (parents' highest education level), and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

In addition to having higher proportions of parents with postsecondary education than their Hispanic counterparts in each generation, a higher proportion of Asian immigrant and second-generation American undergraduates also reported speaking primarily English at home (figure 9). Among immigrant undergraduates, 26 percent of Asians and 18 percent of Hispanics spoke English as their primary language at home and among second-generation Americans, about 59 percent of Asians and 48 percent of Hispanics reported the same.

FIGURE 9.

ENGLISH SPOKEN IN THE HOME
Percentage of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates who reported English as the primary language spoken in the home: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variables IMMIGEN (immigrant generational status), PRIMLANG (English is the primary language), and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

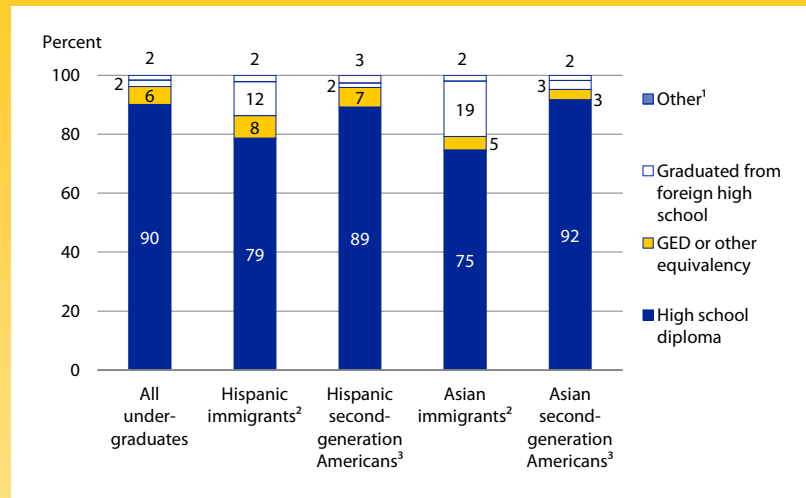
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How do Hispanic and Asian immigrant and second-generation American undergraduates compare with each other and with all undergraduates on key indicators of academic preparation, such as type of high school completion, high school coursetaking, and college remediation?

The analysis of students' academic preparation for postsecondary education included three sets of indicators: high school diploma status, highest level mathematics course taken in high school, and whether or not students reported taking remedial courses in college. In interpreting the findings for these indicators, it should be remembered that unobserved secondary school characteristics, such as teacher quality and student body composition, and student attributes, such as motivation, clarity of career and educational goals, or ability to meet college costs, may contribute to the differences found between generational groups (Baum and Flores 2011). While three-quarters or more of immigrant Hispanic (79 percent) and Asian students (75 percent) earned a standard high school diploma from a U.S. school, both groups did so at lower rates than their second-generation American peers and undergraduates overall (about 90 percent each) (figure 10). Immigrant Hispanics completed high school with a GED or equivalent certificate at a higher rate (8 percent) than did their Asian counterparts (5 percent), while immigrant Asians graduated from foreign high schools more often than did their Hispanic counterparts (19 percent vs. 12 percent).

FIGURE 10.

HIGH SCHOOL COMPLETION STATUS
Percentage distribution of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates by high school completion status: 2007–08



¹ Other includes students who obtained a high school completion certificate, had no high school degree or certificate, or were homeschooled.

² Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

³ U.S.-born undergraduates with one or both parent(s) foreign born.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

Students who complete advanced courses in high school and especially mathematics beyond algebra 2, are more likely than others to earn a bachelor's degree (Adelman 2006). Conversely, taking remedial courses in college has been associated with lower rates of degree attainment (Attewell et al. 2006). Hispanic immigrant and second-generation American undergraduates age 30 or younger took or planned to take proportionally fewer precalculus and calculus courses in high school and reported taking proportionally more remedial courses at the postsecondary level than Asian first- and second-generation and all undergraduates.⁹ For example, some 25 percent or less of Hispanic immigrant and second-generation Americans reported taking or intending to take calculus, compared with nearly half (46 percent) of these groups among Asians and 29 percent of all undergraduates (table 1).

TABLE 1.

MATHEMATICS COURSES IN HIGH SCHOOL
Percentage distribution of all undergraduates and Hispanic and Asian immigrant and second-generation American undergraduates under age 30 by highest level mathematics course that they took or planned to take in high school: 2007–08

Courses	All undergraduates	Hispanic immigrants ¹	Hispanic second-generation Americans ²	Asian immigrants ¹	Asian second-generation Americans ²
Less than algebra 2	9.5	12.7	12.4	5.8	4.6
Algebra 2	23.3	24.0	30.1	11.8	16.4
Trigonometry	12.9	13.5	12.0	15.0	12.7
Precalculus	25.3	24.6	24.0	21.6	20.2
Calculus	29.0	25.2	21.5	45.9	46.0

¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

NOTE: High school mathematics coursetaking is based on students' self-reports and applies only to undergraduates under age 30. Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

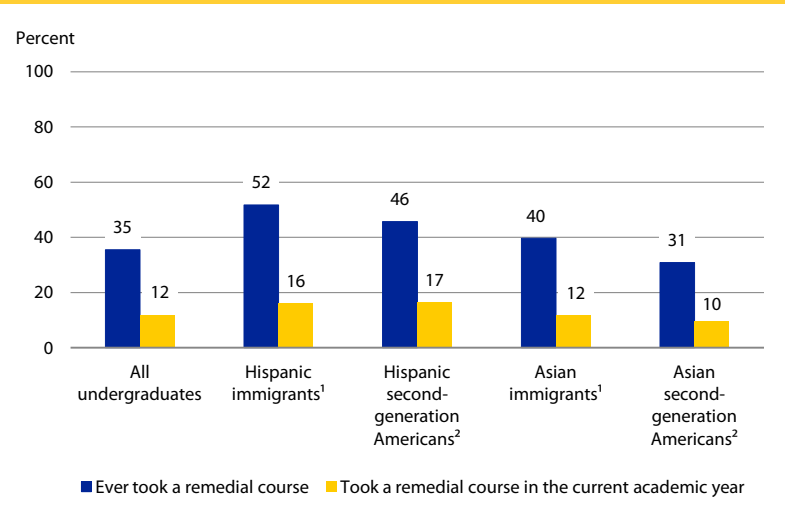
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

⁹ High school mathematics coursetaking is based on students' self-reports and applies only to undergraduates under age 30. Additional information on this variable can be found in the Technical Notes.

Students reported on postsecondary-level remedial coursework in two ways: whether they had ever taken remedial courses since enrolling in postsecondary education and whether they were taking remedial courses in the current year. For both indicators and in both generations, proportionally more Hispanics than Asians reported doing so (figure 11). Among first- and second-generation Hispanic immigrants, some 52 percent and 46 percent (respectively) reported ever taking a remedial course, compared with 40 percent and 31 percent of their Asian counterparts and 35 percent of undergraduates as a whole. Similarly, 16 percent of first-generation and 17 percent of second-generation Hispanics reported taking remedial courses during the current academic year, compared with 12 percent and 10 percent (respectively) of their Asian counterparts and 12 percent of all undergraduates.

FIGURE 11.

REMEDIAL COURSETAKING
Percentage of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates who reported ever taking a remedial or developmental course to improve basic skills since high school graduation, and who reported taking such courses in the current academic year: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variables IMMIGEN (immigrant generational status), REMEVER (remedial courses: ever taken), and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

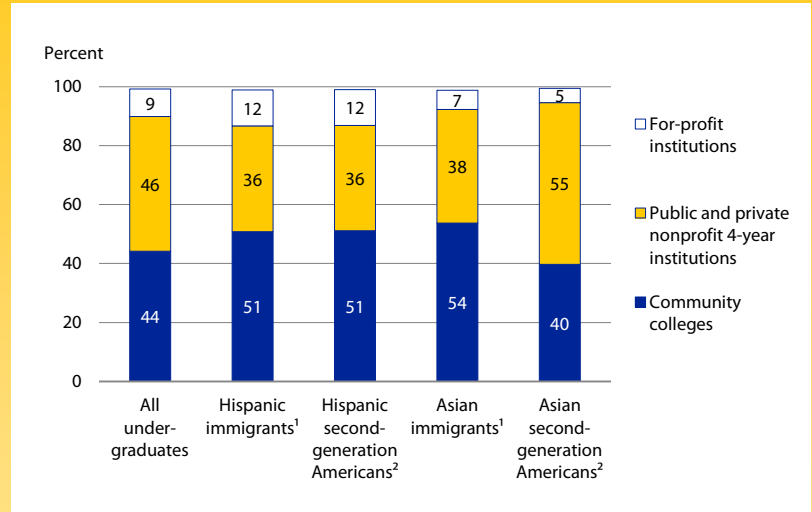
4

In which institution sectors and fields of study do Hispanic and Asian immigrant and second-generation American undergraduates enroll, and what proportions enroll full time? How do their enrollment patterns compare with those of all undergraduates?

In 2007–08, immigrant Hispanic and Asian undergraduates enrolled in community colleges at higher rates than did undergraduates as a whole (figure 12). Compared with 44 percent of all undergraduates, 51 percent of Hispanic and 54 percent of Asian immigrant undergraduates attended community colleges. Among second-generation Americans, however, Asians enrolled in 4-year institutions at a higher rate (55 percent) than did their Hispanic second-generation American counterparts (36 percent) and all undergraduates (46 percent). In contrast, while a relatively small percentage of students attended for-profit institutions, proportionally more immigrant and second-generation Americans among Hispanic than Asian undergraduates did so. Some 12 percent of Hispanics in each group attended for-profit institutions, compared with 7 percent and 5 percent of Asian immigrants and second-generation Americans, respectively, and 9 percent of all undergraduates.

FIGURE 12.

INSTITUTION SECTOR
Percentage distributions of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates by sector of institution attended: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

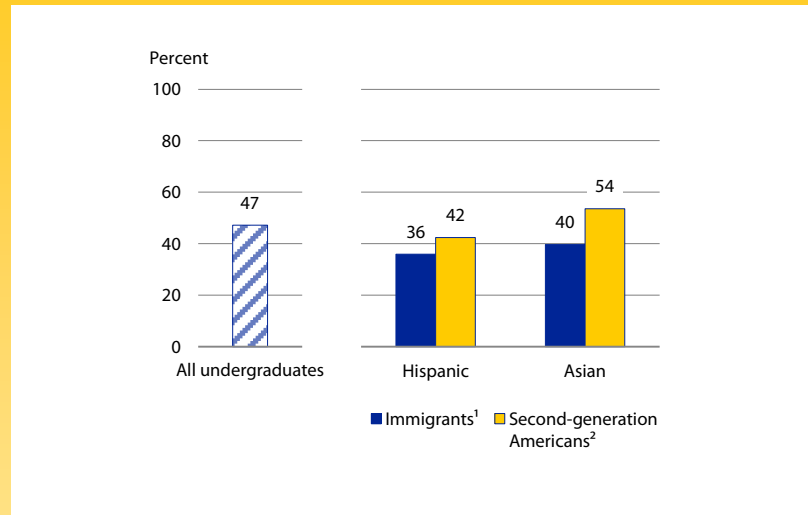
NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Estimates exclude students attending public less-than-two-year and private nonprofit less-than-4-year institutions. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

Full-time enrollment is strongly associated with degree completion (Berkner, He, and Cataldi 2002). Immigrant Asian (40 percent) and Hispanic (36 percent) undergraduates had lower rates of full-time enrollment than all undergraduates (47 percent) in 2007–08 (figure 13). A higher proportion of second-generation American than immigrant Hispanics (42 percent vs. 36 percent) and Asians (54 percent vs. 40 percent) enrolled in college full time. The full-time enrollment rate among Asian second-generation Americans (54 percent) was higher than among all undergraduates (47 percent), but the rate among Hispanic second-generation Americans (42 percent) was lower than among Asian second-generation Americans and all undergraduates.

FIGURE 13.

FULL-TIME ENROLLMENT
Percentage of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates who enrolled exclusively full time: 2007–08



¹ Foreign-born undergraduates who were U.S. citizens with one or both parent(s) born outside of the United States, resident aliens, and noncitizens eligible for citizenship.

² U.S.-born undergraduates with one or both parent(s) foreign born.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

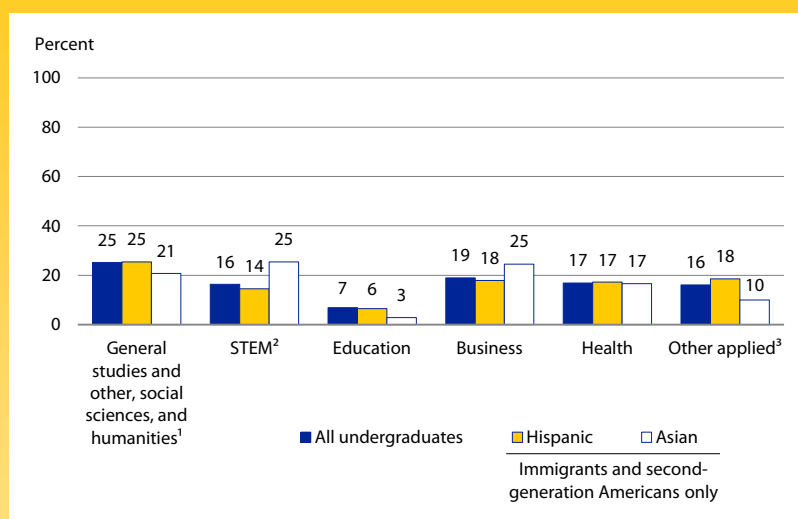
Hispanic and Asian immigrant and second-generation American undergraduates also differed in what they studied. Small sample sizes required combining immigrants and second-generation Americans and grouping majors into fairly large categories for these comparisons (figure 14).¹⁰ Two fields in which Asian and Hispanic immigrant and second-generation American students majored at different rates were STEM (science, technology, engineering, and mathematics) and business. One-quarter of Asians had majored in each of these fields, compared with 14 percent and 18 percent, respectively, of Hispanics. Conversely, proportionally fewer Asian than Hispanic immigrants and second-generation Americans majored in the combined fields of general studies, social sciences, humanities, and other cross-disciplinary fields, such as area

and culture studies (21 percent vs. 25 percent). Although relatively few undergraduates (7 percent) majored in education, Hispanic immigrant and second-generation American undergraduates majored in education at a higher rate than did their Asian counterparts (6 percent vs. 3 percent).

Hispanic immigrants and second-generation Americans also majored in fields identified as “other applied” at a higher rate than did their Asian counterparts (18 percent vs. 10 percent). These majors included, among others, architecture, communications, theology, and religious vocations.

FIGURE 14.

MAJOR FIELD OF STUDY
Percentage distributions of all undergraduates and immigrant and second-generation American Hispanic and Asian undergraduates by major field of study: 2007–08



¹ General studies and other includes basic skills, citizenship activities, leisure and recreational activities, personal awareness and self improvement, interpersonal and social skills; social sciences includes history and psychology; and humanities includes English language and literature, area, ethnic, cultural, and gender studies, foreign languages, literatures, and linguistics, philosophy and religious studies, and visual and performing arts.

² Science, technology, mathematics, and engineering.

³ 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.

NOTE: Estimates exclude Puerto Ricans, undergraduates who attended institutions in Puerto Rico, and foreign students with visas. Hispanic includes Latino. Data for American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Black and African American, White, Other, or undergraduates with Two or more races are not shown separately but are included in the data for all undergraduates. Response rates for the variable IMMIGEN (immigrant generational status) and two of the variables used to identify the sample for analysis (IMMIGRA [immigrant status] and HISPTYPE [Hispanic type]) were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>

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

¹⁰ To create categories with sufficient sample size to yield reliable estimates, majors were grouped into six categories representing liberal arts fields and applied fields. The liberal arts fields included two of the six categories: STEM fields (science, technology, engineering, and mathematics) and General studies and other, social sciences, and humanities (i.e., other liberal arts and a few miscellaneous fields such as leisure and recreational activities). The applied fields included the remaining four categories: Education, Business, Health, and Other applied fields (e.g., personal and consumer services, public administration and human services, and library sciences). Figure 14 includes a more detailed listing of the fields included in each of these six categories.

FIND OUT MORE

For questions about content or to order additional copies of this Statistics in Brief or view this report online, go to:

<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>

More detailed information on 2007–08 U.S. undergraduates can be found in Web Tables produced by the National Center for Education Statistics (NCES) using the NPSAS:08 data. They include estimates of demographics, enrollment, and employment characteristics. Web Tables documenting how students pay for their undergraduate education are also available.

Web Tables—Profile of Undergraduate Students: 2007–08 (NCES 2010-205) <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010205>

Web Tables—Student Financing of Undergraduate Education: 2007–08 (NCES 2010-162) <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010162>

Readers may also be interested in the following NCES products related to the topic of this Statistics in Brief:

Status and Trends in the Education of Racial and Ethnic Minorities (NCES 2010-015) <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010015>

Language Minorities and Their Educational and Labor Market Indicators (NCES 2004-009) <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004009>

English Literacy and Language Minorities in the United States (NCES 2001-464) <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001464>

APPENDIX: PUERTO RICANS AND OTHER HISPANIC UNDERGRADUATES

The population of undergraduates discussed in this Brief excludes students reporting their place of origin as Puerto Rico and those attending postsecondary institutions in Puerto Rico. Some studies include Puerto Ricans born in Puerto Rico with other Hispanics, classifying them as immigrants or second-generation Americans according to whether they or their parents were born in the 50 states or Washington, DC (Kao and Tienda 1995; Kaufman, Chavez, and Lauen 1998; Glick and White 2004; Hagy and Staniec 2002).

Although the NPSAS:08 survey asked respondents whether they or their parents were born in the United States, the question did not specify whether respondents should consider Puerto Rico or other U.S. territories to be part of the United States. It is therefore unclear how this question would be interpreted by someone born in Puerto Rico. Following the approach taken in other studies using similar data (Oropesa and Landale 1997; Chiswick and DebBurman 2004), this analysis excludes Puerto Ricans because their immigrant and generational status cannot be determined. Students attending institutions in Puerto Rico are excluded because the survey used

in Puerto Rico did not include questions on the birthplace of students and their parents.

Some 2 percent of all undergraduates and 17 percent of those identifying themselves as Hispanic reported Puerto Rico as their country of origin. Among Puerto Rican undergraduates, 43 percent and 56 percent, respectively, attended institutions in Puerto Rico or in the 50 states and Washington, DC.¹¹ Although Puerto Ricans born in Puerto Rico are U.S. citizens, when they move to the U.S. mainland they encounter many of the same cultural and linguistic challenges faced by immigrants from other countries (Sanders and Nee 1996).

¹¹ Data from U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

As an illustration of the information on Puerto Rican undergraduates available in NPSAS:08, Table A-1 presents a comparison of Puerto Ricans and other Hispanics who attended institutions in the 50 states and Washington, DC with respect to several factors associated with postsecondary completion (Kao and Thompson 2003). A higher proportion of Puerto Rican (68 percent) than other Hispanics (57 percent) reported English as the primary language spoken in the home, but no statistically significant differences were found in parent education and income levels between the two groups. Puerto Ricans did, however, attend private nonprofit 4-year (14 percent) and for-profit institutions (18 percent) at higher rates than other Hispanics (8 percent and 13 percent, respectively), but public 2-year institutions at lower rates (43 percent among Puerto Ricans and 50 percent among other Hispanics).

Table A-1. PUERTO RICAN UNDERGRADUATES
Percentage of Puerto Rican and other Hispanic undergraduates who reported English as the primary language spoken in the home, and percentage distribution of Puerto Rican and other Hispanic or Latino undergraduates by selected demographic and institutional characteristics: 2007–08

Characteristic	Puerto Rican	Other Hispanic or Latino
English was the primary language spoken in the home	67.9	56.8
Highest parent education level		
High school or less	46.4	49.7
Some postsecondary	28.0	25.8
Bachelor's degree or higher	25.6	24.6
Income		
Low (less than \$16,700)	33.0	33.7
Middle (\$16,700–58,500)	49.5	50.6
High (\$58,501 or more)	17.5	15.7
Type of institution		
Public 4-year	24.6	27.8
Private nonprofit 4-year	13.8	7.8
Public 2-year	43.2	50.2
For-profit ¹	17.6	13.2
Other or attended more than one institution	0.8	1.1

¹ Includes less-than-2-year, 2-year, and 4-year institutions.

NOTE: Estimates exclude undergraduates attending institutions in Puerto Rico and foreign students with visas. Response rates for the variables HISPTYPE (Hispanic type), IMMIGEN (immigrant generational status), PAREduc (Parents' highest education level), PCTALL (income percentile rank for all students), PRIMLANG (English was the primary language the student spoke at home), and IMMIGRA (immigrant status), which was used to identify the sample for analysis, were below 70 percent. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states and the District of Columbia. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

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

TECHNICAL NOTES

Survey Methodology

The estimates provided in this Statistics in Brief are based on data collected through the 1999–2000, 2003–04, and 2007–08 National Postsecondary Student Aid Studies (NPSAS:2000, NPSAS:04, and NPSAS:08). NPSAS covers broad topics concerning student enrollment in postsecondary education and how students and their families finance their education. In 2000, students provided data through instruments administered over the telephone, and in 2004 and 2008, through surveys administered over the Internet or by telephone. In addition to student responses, data were collected from the institutions that sampled students attended and other relevant databases, including U.S. Department of Education records on student loan and grant programs and student financial aid applications.

NPSAS has been conducted every 3 to 4 years since 1986–87. The NPSAS:2000, NPSAS:04, and NPSAS:08 target population includes students enrolled in postsecondary institutions in the United States and Puerto Rico at any time between July 1st and June 30th of the survey year.¹² In NPSAS:2000, NPSAS:04, and NPSAS:08 the population was also limited to students

¹² The target population of students was limited to those enrolled in an academic program, at least one course for credit that could be applied toward an academic degree, or an occupational or vocational program requiring at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award. The target population excluded students who were also enrolled in high school or a high school completion (e.g., GED preparation) program.

enrolled in Title IV institutions.¹³ Table A-2 provides the sizes of the undergraduate components of the target population.

The sampling design consisted of first selecting eligible institutions from the sampling frame. Institutions were selected with probabilities proportional to a composite measure of size based on expected enrollment during the

survey year. Table A-2 lists the institution sampling frames for NPSAS:2000, NPSAS:04, and NPSAS:08, which were constructed from contemporary Institutional Characteristics, Fall Enrollment, and Completions files of the Integrated Postsecondary Education Data System (IPEDS) and the approximate number of institutions participating in each of the survey years.

TABLE A-2. Target populations, number of participating institutions, and unweighted number of study members: NPSAS:2000 to NPSAS:08

NPSAS year	IPEDS data used as sampling frame	Target undergraduate population (in millions)	Participating institutions	Number of undergraduate study members
NPSAS:2000	1998–99	16.6	1,000	49,900
NPSAS:04	2000–01	19.1	1,400	79,900
NPSAS:08	2004–05	20.9	1,700	113,500

SOURCE: Riccobono, J.A., Cominole, M.B., Siegel, P.H., Gabel, T.J., Link, M.W., and Berkner, L.K. (2001). *National Postsecondary Student Aid Study, 1999–2000 (NPSAS:2000) Methodology Report* (NCES 2002-152). National Center for Education Statistics, U.S. Department of Education. Washington, DC. Cominole, M.B., Siegel, P.H., Dudley, K., Roe, D., and Gilligan, T. (2006). *2004 National Postsecondary Student Aid Study (NPSAS:04) Full-Scale Methodology Report* (NCES 2006-180). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Cominole, M.B., Riccobono, J.A., Siegel, P.H., and Caves, L. (2010). *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-Scale Methodology Report* (NCES 2011-188). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

¹³ “Title IV institutions” refers to institutions eligible to participate in federal financial aid programs under Title IV of the Higher Education Act.

Once institutions were selected, students were sampled from student lists provided by sampled institutions. In NPSAS:08, eligible sampled students were defined as study members if at least 11 key data elements were available from any data source. Similar definitions of study members were developed for each of the earlier NPSAS administrations. See the methodology reports listed at the end of this section for detailed descriptions of these definitions. The approximate number of undergraduates who were study members in each survey year is also reported in table A-2.

Table A-3 provides a summary of weighted response rates across NPSAS administrations. There are several types of participation/coverage rates in NPSAS. For the student record abstraction phase of the study (referred to as computer-assisted data entry or CADE), institution completion rates vary across different types of institutions and depend on the method of data submission (field-CADE, self-CADE, and data-CADE). Overall student-level CADE completion rates (i.e., the percentage of NPSAS-eligible sample members for whom a completed CADE record was obtained) are reported in table A-3 as “Student survey (analysis file).” This table also contains weighted response rates to the student interview, which includes respondents who completed either a full or partial “Student survey (student interview).” Estimates were weighted to adjust for the unequal probability of selection in to the sample and for nonresponse.

Two broad categories of error occur in estimates generated from surveys: sampling and nonsampling errors. Sampling errors occur when observations are based on the samples rather than on entire populations. The standard error of a sample statistic is a measure of the variation due to sampling and indicates the precision of the statistic. The complex sampling design used in NPSAS must be taken into account when calculating variance estimates such as standard errors. NCES’s online PowerStats, which generated the estimates in this report, uses the balanced repeated replication

(BRR) and Jackknife II (JK2) methods to adjust variance estimation for the complex sample design.

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

TABLE A-3. Weighted response rates for NPSAS surveys: NPSAS:2000 to NPSAS:08

Component	Institution list participation rate	Student response rate	Overall ¹
NPSAS:2000			
Student survey (analysis file ²)	91	97	89
Student survey (student interview)	91	72	66
NPSAS:04			
Student survey (analysis file ²)	80	91	72
Student survey (student interview)	80	71	56
NPSAS:08			
Student survey (analysis file ²)	90	96	86
Student survey (student interview)	90	71	64

¹ Institution list participation rate times student response rate.

² NPSAS analysis file contains analytic variables derived from all NPSAS data sources (including institutional records and external data sources) as well as selected direct student interview variables.

NOTE: The student interview response rates for NPSAS:2000 are only for telephone interviews. The response rates for student interviews in NPSAS:04 and NPSAS:08 include all interview modes (self-administered web-based, telephone, and in-person interviews).

SOURCE: Thurgood, L., Walter, E., Carter, G., Henn, S., Huang, G., Nooter, D., Smith, W., Cash, R.W., and Salvucci, S. (2003). *NCES Handbook of Survey Methods* (NCES 2003-603). National Center for Education Statistics, U.S. Department of Education. Washington, DC. Burns, S., Wang, X., and Henning, A. (Eds.) (2011). *NCES Handbook of Survey Methods* (NCES 2011-609). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

For more information on NPSAS:2000, NPSAS:04, and NPSAS:08 methodology, see the following reports:

- *Methodology Report for the 1999–2000 National Postsecondary Student Aid Study* (<http://nces.ed.gov/pubs2002/2002152.pdf>)
- *2004 National Postsecondary Student Aid Study (NPSAS:04) Full-scale Methodology Report* (<http://nces.ed.gov/pubs2006/2006180.pdf>)
- *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011188>).

Item Response Rates

NCES Statistical Standard 4-4-1 states that “[a]ny survey stage of data collection with a unit or item response rate less than 85 percent must be evaluated for the potential magnitude of nonresponse bias before the data or any analysis using the data may be released” (U.S. Department of Education 2002). This means that nonresponse bias analysis could be required at any of three levels: (1) institutions, (2) study respondents, or (3) items.

For more information on response rates and nonresponse bias analysis for selected variables from NPSAS:2000 and NPSAS:04, please see the relevant NPSAS methodology reports, listed above. For NPSAS:2000, *National Postsecondary Student Aid Study 1999–2000 (NPSAS:2000), CATI Nonresponse Bias Analysis Report* provides additional

VARIABLES USED

All estimates presented in this Statistics in Brief were produced using PowerStats, a web-based software application that allows users to generate tables for many of the postsecondary surveys conducted by NCES. See “Run Your Own Analysis With DataLab” below for more information on PowerStats. The variables used in this Brief are listed below. Visit the NCES DataLab website (<http://nces.ed.gov/datalab>) to view detailed information on how these variables were constructed and their sources. Under *Detailed Information About PowerStats Variables, NPSAS Undergraduates: 2008, NPSAS Undergraduates: 2004, and NPSAS Undergraduates: 2000* click by subject or by variable name. The program files that generated the statistics presented in this Brief can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012213>.

Label	Name
2007–08 National Postsecondary Student Aid Study (NPSAS:08) Variables	
Attendance intensity (all schools)	ATTNPTRN
English was the primary language the student spoke at home	PRIMLANG
Field of study: undergraduate (10 categories)	MAJORS4Y
High school degree type	HSDEG
Highest level of math completed or planned	HCMATHHI ¹
Hispanic type	HISPTYPE
Immigrant generational status	IMMIGEN
Immigrant status	IMMIGRA
Income percentile rank for all students	PCTALL
NPSAS institution representative sample states	INSTSAST
NPSAS institution state	INSTSTAT
NPSAS institution type	SECTOR9
Parents' highest education level	PAREduc
Race/ethnicity (with multiple)	RACE
Remedial courses: ever taken	REMEVER
Student's age as of 12/31/2007 (by group)	AGEGROUP
NPSAS: 04 Variables	
Hispanic type	HISPTYPE
Immigrant status	IMMIGRA
NPSAS institution state	INSTSTAT
NPSAS:2000 Variables	
Hispanic type	NBHISTYP
Immigrant status	IMMIGR
NPSAS institution state	INSTSTATE

¹ HCMATHHI is derived for students under age 30, and this variable is skipped for undergraduates aged 30 and older. The variable represents a composite of students' responses to the following: (1) the questionnaire administered to the student when he or she completed the ACT, if applicable, (2) the questionnaire administered to the student when he or she completed the SAT, if applicable, and (3) the NPSAS student interview. Because most ACT- and SAT-takers are still in high school when they complete the coursetaking questionnaire, they are asked to report the highest level of mathematics they have completed or plan to take before entering college. The NPSAS interview asks students what they *did* complete in high school. When data for a student are available from multiple sources, priority is given to the most recent ACT or SAT questionnaire he or she completed, if applicable, followed by information provided in the NPSAS interview.

information.¹⁴ Note that for NPSAS:2000, nonresponse bias analysis for computer-assisted telephone interview (CATI) nonresponse was conducted at the student level and not at the item level.

For NPSAS:08, the institution and study respondent response rates were 90 percent and 96 percent, respectively, and thus nonresponse bias analysis was not required at those levels. The student interview response rate, however, was 71 percent, and therefore nonresponse bias analysis was required for those variables based in whole or in part on student interviews. The following NPSAS:08 variables used in this report had response rates lower than 85 percent: HCMATHHI (74 percent), HISPTYPE (38 percent), IMMIGEN (62 percent), IMMIGRA (65 percent), PAREduc (62 percent), PCTALL (51 percent), PRIMLANG (62 percent), and REMEVER (61 percent). For each of these variables, nonresponse bias analyses were conducted to determine whether respondents and nonrespondents differed on the following characteristics: institution sector, region, and total enrollment; student type, gender, and age group; whether the student had Free Application for Federal Student Aid (FAFSA) data, was a federal aid recipient, was a Pell Grant recipient, or borrowed a Stafford Loan; and the amount, if any, of

a student's Pell Grant or Stafford Loan. Differences between respondents and non-respondents on these variables were tested for statistical significance at the 5 percent level. All other NPSAS:08 variables used in this Brief had a pre-imputation response rate of 85 percent or higher. A summary of nonresponse bias analyses for the variables specified above appears in table A-4.

Any bias due to nonresponse, however, is based upon responses prior to stochastic imputation in which missing data were replaced with valid data from the records of donor cases that matched the recipients on selected demographic, enrollment, institution, and financial aid related variables. Potential bias may have been reduced due to imputation. Because imputation procedures are designed specifically to identify donor cases with characteristics similar to cases with missing data, the imputation procedure is assumed to reduce bias. While the level of item-level bias before imputation is measurable, the same measurement cannot be made after imputation. Although the magnitude of any change in item-level bias cannot be determined, the item estimates before and after imputation were compared to determine whether the imputation changed the biased estimate as an indication of a possible reduction in bias.

For continuous variables, the difference between the mean before imputation and the mean after imputation was estimated. For categorical variables, the estimated difference was computed for each of the categories as the percentage of students in that category before imputation minus the percentage of students in that category after imputation. These estimated differences were tested for statistical significance at the 5 percent level. A significant difference in the item means after imputation suggests a possible reduction in bias due to imputation. A nonsignificant difference suggests that imputation may not have reduced bias, that the sample size was too small to detect a significant difference, or that there was little bias to be reduced. Statistical tests of the differences between the means before and after imputation for these eight variables were significant, suggesting a possible reduction in bias.

For more detailed information on nonresponse bias analysis and an overview of the survey methodology, see *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-Scale Methodology Report* (<http://nces.ed.gov/pubsearch/pubsearch/pubinfo.asp?pubid=2011188>).

¹⁴ This publication can be retrieved from <http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=200203>.

TABLE A-4. Summary of nonresponse bias for all students at all institution types: 2008

Variable name	Pre-imputation			Percent difference in means or percentage of students in each category pre- and post-imputation ²
	Median of relative bias estimates across characteristics ¹	Percentage of characteristics with significant bias	Characteristic with greatest significant bias	
HCMATHHI Highest level of math completed or planned	3.85	82.22	NPSAS institution type: Public 4-year doctorate-granting institution	0.03*
HISPTYPE Hispanic type	9.92	46.94	Enrollment size at NPSAS institution: 24,169 or more	0.09*
IMMIGEN Immigrant generational status	4.82	79.59	NPSAS institution type: Public 4-year doctorate-granting institution	0.02*
IMMIGRA Immigrant status	4.42	67.35	NPSAS institution type: Public 4-year doctorate-granting institution	0.23*
PAREduc Parents' highest education level	5.17	79.59	NPSAS institution type: Public 4-year doctorate-granting institution	0.10*
PCTALL Income percentile rank for all students	19.31	79.59	Whether had FAFSA information	0.15*
PRIMLANG English was the primary language the student spoke at home	5.04	79.59	NPSAS institution type: Public 4-year doctorate-granting institution	0.02*
REMEVER Remedial course: Ever taken	3.51	78.26	NPSAS institution type: Public 4-year doctorate-granting institution	0.01*

* Statistically significant at the $p < 0.05$ level.

¹ Relative bias is computed by dividing a variable's estimated bias for a given characteristic by the variable's mean. Relative bias is defined as significant if its difference from zero is statistically significant at the $p < 0.05$ level.

² Percent difference between pre- and post-imputation means or percent difference in percentages of students in a particular category of a categorical variable is computed as difference x 100/post-imputation estimate.

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

Statistical Procedures

Comparisons of means and proportions were tested using Student's *t* statistic. Differences between estimates were tested against the probability of a Type I error¹⁵ or significance level. The statistical significance of each comparison was determined by calculating the Student's *t* value for the difference between each pair of means or proportions and comparing the *t* value with published tables of significance levels for two-tailed hypothesis testing. Student's *t* values were computed to test differences between independent estimates using the following formula:

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

The following formula was used to compute student's *t* values to test differences between dependent estimates (i.e., comparing a part to a whole):

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 + (2se_1se_2)}}$$

In both formulas, E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. There are hazards in reporting statistical tests for each comparison.

First, comparisons based on large *t* statistics may appear to merit special attention. This can be misleading since the magnitude of the *t* statistic is related not only to the observed differences in means or percentages but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large (and thus possibly statistically significant) *t* statistic.

A second hazard in reporting statistical tests is the possibility that one can report a "false positive" or Type I error. Statistical tests are designed to limit the risk of this type of error using a value denoted by alpha. The alpha level of .05 was selected for findings in this report and ensures that a difference of a certain magnitude or larger would be produced when there was no actual difference between the quantities in the underlying population no more than 1 time out of 20.¹⁶ When analysts test hypotheses that show alpha values at the .05 level or smaller, they reject the null hypothesis that there is no difference between the two quantities. Failing to reject a null hypothesis (i.e., detecting a difference) however, does not imply the values are the same or equivalent.

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¹⁵ A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

¹⁶ No adjustments were made for multiple comparisons.

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<http://nces.ed.gov/datalab/>

The screenshot shows the DATALAB website interface. At the top, there is a green header with the text "DATALAB" and "Postsecondary & Pre-Elementary Education Data". Below this, the page is divided into several sections:

- PowerStats:** A section with a colorful logo of numbers. The text reads: "Create, save and share tables and regressions, using 15 NCES postsecondary survey datasets and 1 pre-elementary education dataset." Below the text is an orange "GO" button.
- College & Career Tables Library:** A section with a logo of a book and a table. The text reads: "Browse through 5,000+ tables from NCES' postsecondary publications that cover a comprehensive range of topics." Below the text is an orange "GO" button.
- QuickStats:** A section with a logo of a blue circle and a star. The text reads: "Quickly create simple tables using the most frequently used variables from recent postsecondary and pre-elementary survey data." Below the text is an orange "GO" button.
- IPEDS ANALYTICS: Delta Cost Project Database:** A section with a logo of a bar chart. The text reads: "Download IPEDS institutional data from 1986-87 to 2008-09 that have been translated for longitudinal analysis." Below the text is an orange "GO" button.
- What's New:** A section with the heading "What's New" and a list item: "5/24/2012 Now available in PowerStats: National Postsecondary Student Aid Study (NPSAS:96) Undergraduate and Graduate Students."
- Questions?:** A section with the heading "Questions?" and the text "Contact PowerStats@ed.gov."
- Code Books:** A section with the heading "Code Books" and the text "View/download variable information for PowerStats datasets. Files are PDFs." Below this text are two dropdown menus: "View by subject" and "View by variable name". Each dropdown menu has an orange "GO" button next to it.