

July 2007

# HIGHER EDUCATION

## Information Sharing Could Help Institutions Identify and Address Challenges Some Asian Americans and Pacific Islander Students Face



Highlights of [GAO-07-925](#), a report to congressional requesters

# HIGHER EDUCATION

## Information Sharing Could Help Institutions Identify and Address Challenges That Some Asian American and Pacific Islander Students Face

### Why GAO Did This Study

As a group, Asian American and Pacific Islanders represent about 5 percent of the U.S. population and hold about 8 percent of the college degrees. To better understand the educational attainment and average incomes of the subgroups that comprise this population, the Committee asked: 1) What are Asian American and Pacific Islander subgroups' educational attainment and household income levels? (2) What challenges, if any, Asian American and Pacific Islander students face in pursuing and completing their postsecondary education? and (3) What federal and institutional resources do institutions with large Asian American and Pacific Islander student enrollment use to address the particular needs of these students? GAO analyzed data from the U.S. Census Bureau and the U.S. Department of Education (Education) and spoke with officials and Asian American and Pacific Islander students at eight postsecondary institutions.

### What GAO Recommends

GAO recommends that the Secretary of Education facilitate sharing of information among postsecondary institutions that serve Asian American and Pacific Islanders about strategies that foster low-income postsecondary student recruitment, retention, and graduation and about strategies to reach out to low-income students beginning in high school. Education officials generally agreed with our recommendation.

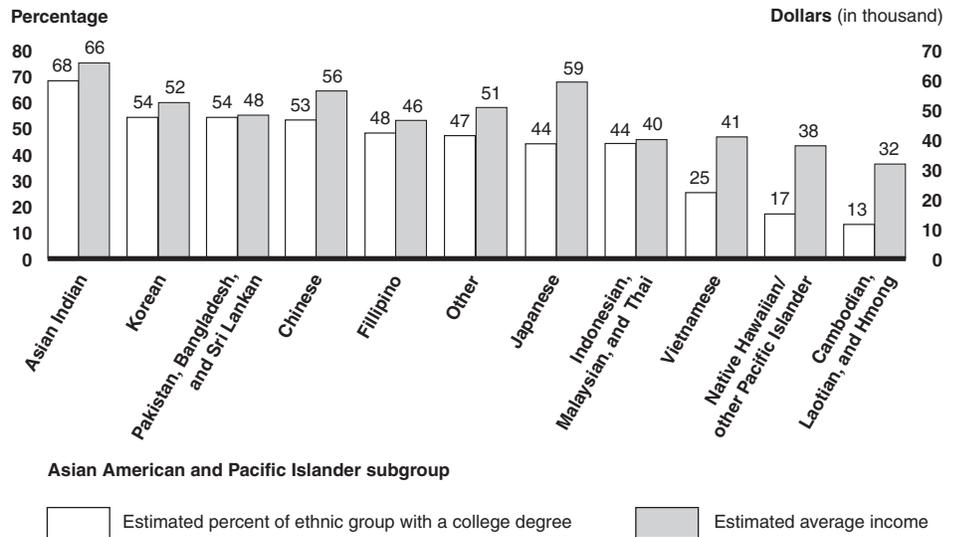
[www.gao.gov/cgi-bin/getrpt?GAO-07-925](http://www.gao.gov/cgi-bin/getrpt?GAO-07-925).

To view the full product, including the scope and methodology, click on the link above. For more information, contact George Scott at (202) 512-7215 or [scottg@gao.gov](mailto:scottg@gao.gov).

### What GAO Found

As a group, Asian American and Pacific Islanders have attained high levels of education and income, but differences among Asian American and Pacific Islander subgroups exist. For example, a greater percentage of Asian Indians and Chinese in the United States had college degrees than Vietnamese, Native Hawaiians and Pacific Islanders and Indochinese—Cambodians, Laotians, and Hmong. Asian Indians had the highest and Native Hawaiians and Pacific Islanders and Indochinese had the lowest average income among employed Asian American and Pacific Islander subgroups. Data limitations, including challenges linking data sources, prevented GAO from fully exploring the reasons for the differences among subgroups.

**Education and Average Income, by Asian American and Pacific Islander Subgroup (2005)**



Source: GAO analysis of ACS data.

Asian American and Pacific Islander subgroups—while in high school—face a range of challenges that may affect their ability to persist in college. According to GAO's analysis of Education's data, Asian American and Pacific Islander subgroups differ in their levels of academic preparedness, ability to pay for college, and their need to balance academic, employment, and family obligations.

The postsecondary institutions that GAO visited used both federal grants and their own resources to address the needs of Asian American and Pacific Islander students. The schools used federal aid to institutions to provide tutoring services and to supplement Pell Grants for selected students. The schools also applied their own funds to provide a range of services, including outreach to high school students, scholarships, tutoring, and financial aid application and tuition assistance. School officials told GAO that they could benefit from learning about programs and strategies other schools might be using to assist high school and college students.

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## Abbreviations

AAPI	Asian American and Pacific Islander
ACS	American Community Survey
ACS PUMS	American Community Survey Public Use Microdata
BRR	balanced repeated replication
ELS	Education Longitudinal Study
ESL	English as a second language
FAFSA	Free Application for Federal Student Aid
IPEDS	Integrated Postsecondary Education Data System
NPSAS	National Postsecondary Student Aid Study
MOE	margin of error
OR	odds ratio(s)
PLUS	Parents Loan for Undergraduate Students
SSS	Student Support Services

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United States Government Accountability Office  
Washington, DC 20548

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July 25, 2007

The Honorable David Wu  
House of Representatives

The Honorable Howard “Buck” McKeon  
Ranking Member  
Committee on Education and Labor  
House of Representatives

Although Asian American and Pacific Islanders represent about 5 percent of the general population, they hold about 8 percent of the college degrees in the United States, leading some to characterize them as the “model minority”. However, viewing Asian American and Pacific Islanders as a homogeneous group may mask differences in educational attainment and income among Asian American and Pacific Islander subgroups.

Asian American and Pacific Islanders are a diverse population, comprised of as many as 43 ethnic groups that differ in their languages, cultures, and countries of origin. Some Asian American and Pacific Islander subgroups, such as the Chinese and Japanese, have large numbers of people who immigrated to the U.S. several generations ago; other subgroups—such as the Vietnamese, Laotian, and Cambodian populations of Southeast Asia—arrived in the 1970s and, like other immigrants, may face challenges in obtaining an education. Asian American and Pacific Islanders also are one of the fastest growing minority groups in the United States. As a group, Asian American and Pacific Islanders increased about 76 percent between 1990 and 2000, from about 7 million to 12 million.

To assist postsecondary institutions that serve both minority and low-income students, the Congress appropriated about \$514 million in fiscal year 2007 to fund programs provided under Title III and Title V of the Higher Education Act, as amended. The U.S. Department of Education (Education) administers these programs by issuing grants to eligible postsecondary institutions to help them improve their capacity to serve minority and low-income students. Education also provides about \$270

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million in aid annually to postsecondary institutions under its TRIO program (see Background section for more detail on TRIO) to assist, among other groups, first generation college students.

To better understand educational attainment and income among the Asian American and Pacific Islander subgroups, you asked us to determine: (1) What are Asian American and Pacific Islander subgroups' educational attainment and household income levels? (2) What challenges, if any, Asian American and Pacific Islander students face in pursuing and completing their postsecondary education? and (3) What federal and institutional resources do institutions with large Asian American and Pacific Islander student enrollment use to address the particular needs of these students.

To answer the first question, we used the Census Bureau's (Census) 2005 American Community Survey (ACS), to examine the present educational attainment of Asian American and Pacific Islander subgroups in the United States relative to other racial or ethnic groups.<sup>1</sup> We conducted statistical analyses to identify the relationship between educational attainment and income, gender, level of English fluency, nativity, and date of arrival.<sup>2</sup> We also constructed a multivariate model to analyze the extent to which certain factors affected the likelihood of having or not having a college degree. Because of data limitations, including the time and resources needed to link data sources or re-interview ACS respondents, we were unable to include parents' education, income, degree status on entry to the

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<sup>1</sup>Unless otherwise noted, the coefficient of variation for all estimates based on the 2005 American Community Survey data is less than .04. That is, the standard error for each estimate is less than 4 percent of the estimate. See appendix I for more information.

<sup>2</sup>We limited our scope to the U.S population age 25 or older. This was done to restrict focus to those that might have completed their education. As a result, our estimates may vary from other published population statistics, such as American Community Survey population profiles, or other published Census data. These other estimates would include individuals aged 24 and younger, whom our analyses excluded. Since different racial and ethnic groups in the United States may have varied age distributions, we might expect our results to vary from other published data.

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U.S., and some other factors in the model that research has shown influence educational attainment. To answer the second question, we analyzed nationally representative data from two Education databases—the Education Longitudinal Study of 2002 (ELS) and the National Postsecondary Student Aid Study (NPSAS) of 2000.<sup>3</sup> The Asian American and Pacific Islander demographic data in both databases provided separate categories for the most populous subgroups, but combines data for the less populous subgroups, such as Cambodians, Laotians and Hmong.<sup>4</sup> We assessed the reliability of the ACS, ELS, and NPSAS data by performing electronic testing of required data elements, reviewing existing information about the data and the systems that produced them, and by interviewing agency officials knowledgeable about the data. We determined that the data were sufficiently reliable for the purposes of this report. We also visited eight 2-year and 4-year postsecondary institutions in Hawaii, Minnesota and California and conducted 14 discussion groups with students from 11 Asian American and Pacific Islander subgroups. We selected states and institutions with high concentrations of Asian American and Pacific Islander students and diverse Asian American and Pacific Islander subgroups. To answer the third question, we analyzed the NPSAS 2000 data, interviewed officials at the eight postsecondary institutions we visited, interviewed Education officials about federal Title III, TRIO, Native Hawaiian Education, and Native Hawaiian Career and Technical Education program requirements and reviewed program documentation.

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<sup>3</sup>As a longitudinal study, the ELS database captures data from the same respondents at different times in their lives. In this report, we use data from the base year survey of 2002 (when respondents were high school sophomores) and data from the follow up survey of 2004 (when respondents were high school seniors). We cite data for “high school students” to reflect student responses, not the year in which they were collected.

<sup>4</sup>The ACS data contain categories for over 43 Asian American and Pacific Islander subgroups, but we collapsed some of the smaller homogeneous subgroups to allow for more meaningful analysis. For example, the findings for the Indochinese include Cambodians, Laotians and Hmong. However, in the ELS data, the Southeast Asian category includes survey respondents who identified themselves as Southeast Asian, but the countries of origin for these respondents were not identified. The NPSAS data include some Southeast Asian categories, but did not identify the smaller subgroups. The correspondence among the Asian American and Pacific Islander subgroup categories in our ACS, ELS and NPSAS analyses is described in more detail in the background.

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Appendix I provides a detailed description of our methodology and its limitations. We conducted our work from July 2006 through July 2007 in accordance with generally accepted government auditing standards.

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## Results in Brief

As a group, Asian American and Pacific Islanders have attained high levels of education and income, but differences among Asian American and Pacific Islander subgroups exist. According to our analysis of the 2005 ACS data, almost half of the Asian American and Pacific Islanders in the United States over the age of 25 had a 4-year college degree. In comparison almost one third of whites and less than one fifth of African Americans and Hispanics had degrees. In addition, Asian American and Pacific Islanders had the highest income of any other group followed by whites. Viewing Asian American and Pacific Islanders as a single group, however, masks the fact that there are major differences in educational attainment and income among their subgroups. For example, a greater percentage of Asian Indians and Chinese in the United States had college degrees compared to the Vietnamese, Native Hawaiians and Pacific Islanders and other Indochinese—the Cambodians, Laotians, and Hmong. In addition, income among employed Asian American and Pacific Islanders was lowest among Native Hawaiians and Pacific Islanders and the Cambodians, Laotians, and Hmong. The differences among Asian American and Pacific Islander subgroups are significant, and research indicates that degree status on entry to the U.S. is an important factor in those differences. In addition, our multivariate analysis showed that immigration status explained some of the differences in educational attainment among the subgroups.

Education's data on Asian American and Pacific Islanders while they were in high school and college show that subgroups face a range of challenges when pursuing postsecondary education. Specifically, the data showed that subgroups differ in their levels of academic preparedness, ability to pay for college, and their need to balance academic, employment, and family obligations. For example, half of Southeast Asian high school students were not in a college preparatory program, nearly one quarter took English-as-a-second-language courses, and more than half of Southeast Asian, Native Hawaiian and Pacific Islander, and other Asian

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American and Pacific Islander students had lower scores on reading and math tests. With respect to the ability to pay for college, more than half of Southeast Asian and Native Hawaiian and Pacific Islander students were in the lower socioeconomic quartiles, and Southeast Asian and other Asian American and Pacific Islander parents set aside less money for their children's future education than parents in other subgroups. Finally, Asian American and Pacific Islander students participating in our discussion groups told us that they faced challenges balancing their work, family, and academic responsibilities leading some to live at home, work while enrolled, and even delay their education.

The postsecondary institutions we visited, all of which had large concentrations of Asian American and Pacific Islander students, used federal institutional grants and their own resources to address the needs of Asian American and Pacific Islander students. For example, federal aid that is targeted to colleges that serve students who are low-income and at risk of not succeeding in college provided tutoring to college students and supplemented Pell Grants for students struggling to meet the cost of college. Similarly, schools used their own funds to provide a range of services, including outreach to students while they were still in high school, scholarships, tuition assistance, tutoring, and help applying for financial aid to enrolled college students. For example, one school provided scholarships to low-income Hmong students. Another school used its own resources and offered advising, tutoring, and assistance applying for financial aid to Native Hawaiians, students of Filipino ancestry, and other underrepresented ethnicities including Pacific Islanders and Southeast Asians. These services were established to respond to challenges the university faced recruiting and retaining underserved groups. Officials at some of the schools we visited said that these programs and strategies reached underserved student populations while they were still in high school and equipped students enrolled in college with the tools and resources they needed to persist in school. Officials at some of the schools we visited also told us that they would benefit from learning about strategies other colleges have used to assist AAPI high school and college students. In past reports, GAO also has found that a range of strategies—including providing low-income and minority students with tutoring, mentoring, and instruction in various subjects, including math and writing, beginning in high school— improved the students' educational attainment.

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We are recommending that the Secretary of Education facilitate information sharing among postsecondary institutions that serve Asian American and Pacific Islander students about strategies that foster low-income Asian American and Pacific Islander student recruitment, retention and graduation and about strategies to reach out to this group beginning in high school. Education generally agreed with our recommendation and agreed to examine options to facilitate information sharing by encouraging more grantees to report successful practices on their own Web pages. However, we believe that Education is uniquely positioned to serve as a broker for information sharing, using its own Web site to facilitate the exchange of information about successful strategies for Asian American and Pacific Islander students.

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## Background

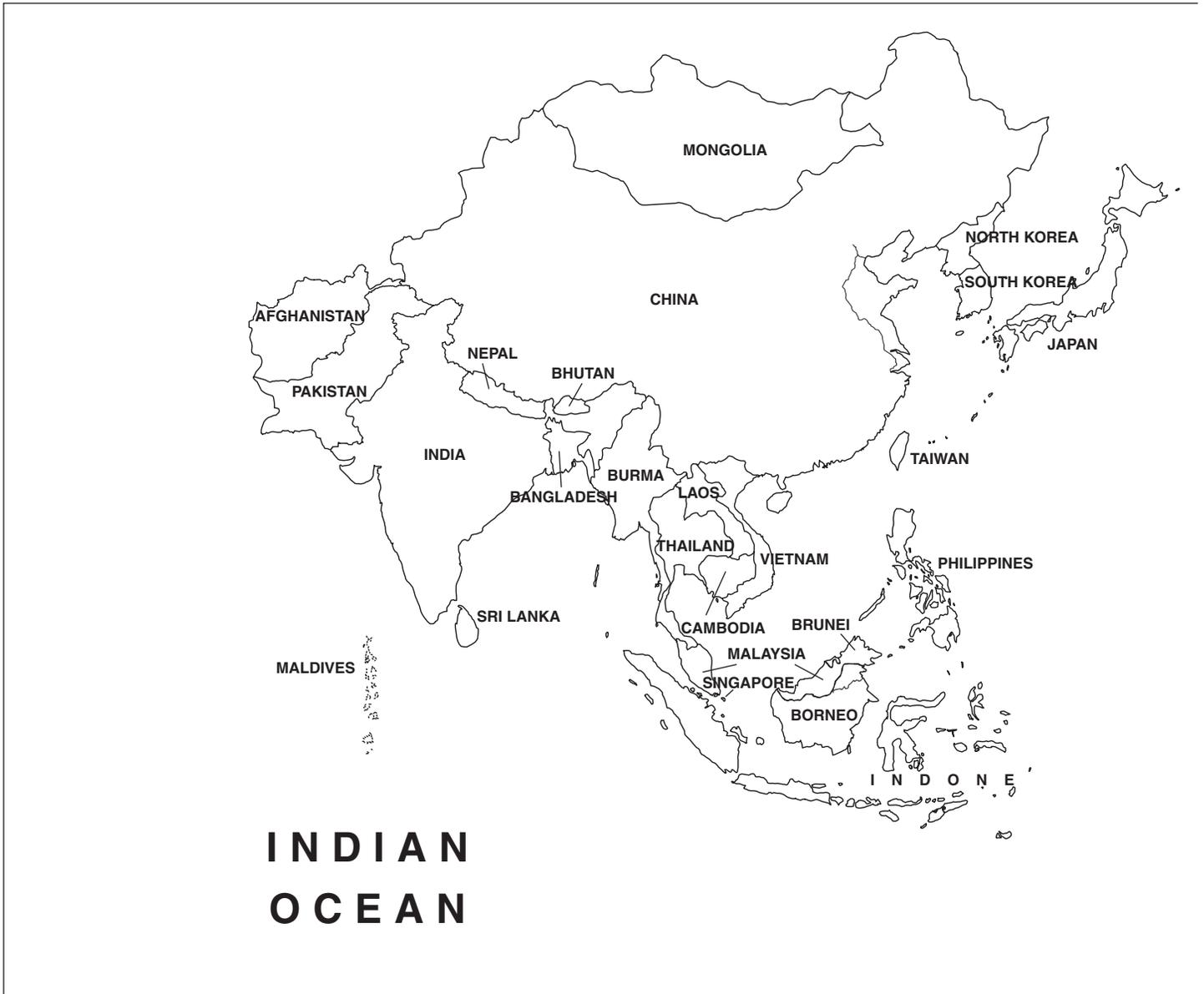
Asian American and Pacific Islanders are U. S. residents who are descendants of immigrants, or are immigrants themselves, from several countries in Asia and the Pacific Islands. Of the 43 self-identified subgroups in the 2005 ACS, about half are linked to Asian countries of origin or ethnic groups and about half are linked to Pacific Island cultures. The Chinese, Filipino, Japanese, Asian Indian, Korean and Vietnamese subgroups accounted for about 88 percent of the Asian American and Pacific Islander subgroups in 2005. The map in figure 1 displays the geographic region of Asia and the Pacific Islands.

Most Asian American and Pacific Islanders entered the country following passage of the Immigration and Nationality Act Amendments of 1965 or as refugees, and a high percentage of Asian American and Pacific Islanders age 25 or older in 2005—about 83 percent—are foreign born. However, differences in immigration history and immigrant status also exist among the Asian subgroups. For example, the Chinese were one of the first Asian subgroups to immigrate to the U.S., arriving in the midnineteenth century, whereas most Vietnamese arrived in two waves, one after the U.S. withdrew from Vietnam in 1972 and the other before the South Vietnamese government fell in 1975.

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As shown in figure 2, among the major racial and ethnic groups, whites accounted for the majority of the U.S. population (about 71 percent), followed by Hispanics (12 percent) and African Americans (11 percent). Asians accounted for about 4 percent of U. S. population members age 25 or older in 2005. When attempting to study individual Asian American and Pacific Islander subgroups, the small number of people in some subgroups makes analysis difficult.

Figure 1: A Map of Asia and the Pacific Islands



Source: Map Resources.

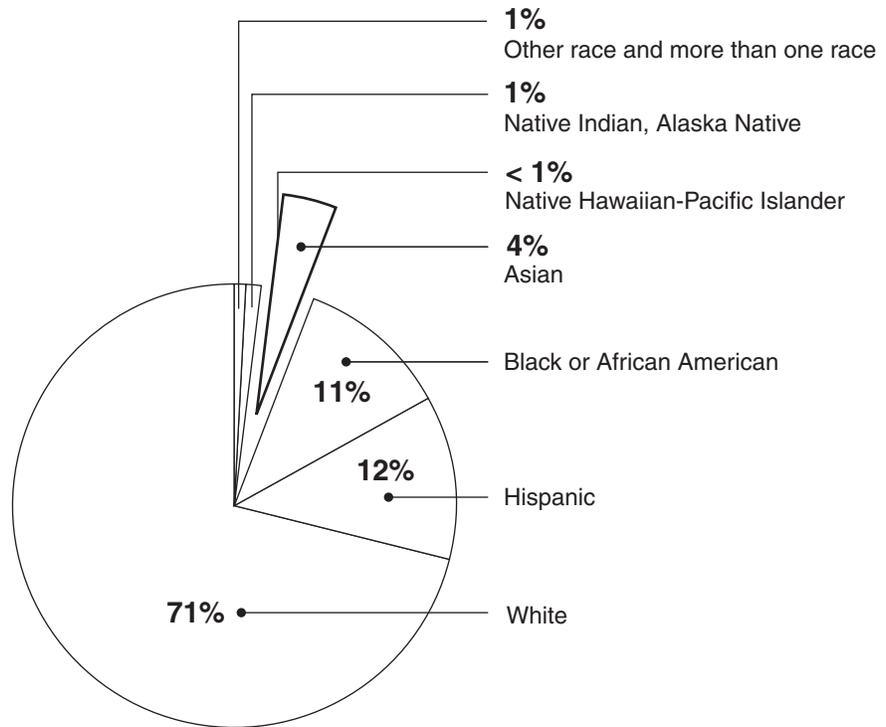
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# PACIFIC OCEAN



**Figure 2: Estimated Percentage of Asian American and Pacific Islander and Other Groups in the U.S. Population Age 25 or Older In 2005**



Source: GAO analysis of ACS data.

Note: All estimates have a margin of error of two-tenths of 1 percent or less.

The Census Bureau, which has developed specialized techniques for populations with limited English proficiency included questions that allowed Asian American and Pacific Islanders to self-identify their 43 subgroups in the 2005 ACS survey. Education, which conducts national surveys of postsecondary institutions and students, such as NPSAS and ELS, to support program planning and research, includes questions in the surveys asking respondents to self-identify the most populous subgroups, such as the Chinese, Asian Indians and Filipinos, but not the less populous ones. According to Education, collecting reliable information on Asian American and Pacific Islander students from the small subgroups—such as the Cambodians, Laotians, and Hmong—is difficult because: they tend to attend small postsecondary institutions; all schools don't collect information for Asian American and Pacific Islander subgroups; Education samples only 25 students at each institution; and students don't self-identify their subgroup accurately. As a result, research on Asian

American and Pacific Islanders' educational attainment and income that uses multiple sources of data has incompatible Asian American and Pacific Islander categories among the data sources. The Asian American and Pacific Islander groupings used in our analyses are shown in table 1.

**Table 1: Groupings for Analyses of Asian American and Pacific Islander Populations**

Groupings for our ACS analysis	Groupings for our ELS analysis	Groupings for our NPSAS analysis
(South) Asian Indians	South Asian—Asian Indian, Bangladeshi, Sri Lankan	Asian Indian
South Asians—Pakistani, Bangladeshi, and Sri Lankan		
Chinese	Chinese	Chinese
Japanese	Japanese	Japanese
Korean	Korean	Korean
Filipino	Filipino	Filipino
Vietnamese		Vietnamese
Southeast Asians —Indonesian, Malaysian and Thai	Southeast Asian—Vietnamese, Laotian, Cambodian/Kampuchean, Thai, Burmese	
Indochinese—Cambodian, Laotian and Hmong		
Native Hawaiians and Pacific Islanders—Native Hawaiian, Samoan, Tongan, Polynesian, Guamanian, Chamorro, Micronesian, Melanesian, and other or combined Native Hawaiian and Pacific Islanders	Native Hawaiians and Pacific Islanders	Native Hawaiians and Pacific Islanders
Other Asians—other specified Asian, unspecified Asian and combinations of Asian groups	Other Asian American and Pacific Islander and unspecified Asian American and Pacific Islander <sup>a</sup>	Other Asian American and Pacific Islander and unspecified Asian American and Pacific Islander <sup>a</sup>

Source: GAO analysis of 2005 ACS, 2002 ELS, and 2000 NPSAS data.

<sup>a</sup>For our ELS 2002 and NPSAS 2000 analyses, we created an “Other Asian American Pacific Islander/Unspecified Asian American Pacific Islander” category that we refer to throughout this report as “Other Asian American and Pacific Islander.” For ELS 2002, we developed the category that included the responses of (1) students who identified themselves as Asian but did not specify to which Asian American Pacific Islander subgroup they belonged and (2) students who identified themselves as multiethnic as well as a member of an Asian American Pacific Islander subgroup. In NPSAS 2000, we developed a category that included the responses of (1) students who identified themselves as Asian and selected “Other Asian American Pacific Islander” as their subgroup, (2) students who identified themselves as Asian but did not specify an Asian American Pacific Islander subgroup and (3) students who identified themselves as Thai.

## Federal Aid to Postsecondary Institutions and Individual Students

The Department of Education provides grants directly to postsecondary institutions to help schools improve their capacity to serve low-income and minority students. Asian American and Pacific Islander students may receive assistance under these programs either as participants in institutions that received targeted grants or as individual recipients of

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federal student financial aid. Federal assistance in each of these areas gives special consideration to students from low-income families.

Title III, Institutional Aid, and Title V, Developing Institutions, of the Higher Education Act, as amended, include a number of programs that authorize Education to award grants to postsecondary institutions that serve large proportions of low-income students and have limited financial resources, such as endowment funds. The grants are generally intended to increase postsecondary institutions' self-sufficiency and build institutional capacity by improving academic quality, addressing institutional management issues, and improving student services and outcomes. The Title III and Title V programs have broad goals for strengthening participating postsecondary institutions but also allow them flexibility in developing approaches that will meet their own objectives. As part of the program's application, participating postsecondary institutions submit a plan for achieving growth and self-sufficiency, focused in one or more authorized areas of activity, and if selected, may use the grant to pursue the plan's objectives. While funding is not specifically targeted to institutions that serve Asian American and Pacific Islanders,<sup>5</sup> postsecondary institutions that meet the eligibility requirements of the Title III and Title V programs may use the funding they receive to assist Asian American and Pacific Islander students attending eligible institutions. Authorized uses of grant funds include

- construction, maintenance, or renovation of educational facilities;
- purchase of telecommunications equipment or services;
- support of faculty development;
- development and improvement of academic programs;
- purchase of library books, periodicals and other educational materials;
- tutoring, counseling and other student service programs designed to improve academic success;
- fiscal and administrative management improvement; and
- establishing or improving a development office or endowment fund.

Title III's , part A, Strengthening Institutions program includes grants directed at different types of postsecondary institutions that meet the eligibility criteria specified under the title. These institutions include Tribal Colleges and Alaskan Natives and Native Hawaiian institutions. Title III, part B, funds are directed to historically black colleges and

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<sup>5</sup>However, funds directed to Native Hawaiians are provided under Title III, part A, Alaska Natives and Native Hawaiians.

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universities, and title V funds are directed to institutions that serve Hispanic students.<sup>6</sup>

In addition to strengthening institutions, Education also awards grants under the Student Support Services (SSS) program. One of the original three of a set of Education programs known as TRIO, SSS awards grants to institutions to support educational attainment for first generation, low-income college students, and students with disabilities and in need of academic support. The program aims to increase college retention and graduation rates and to help students make the transition from one level of higher education to the next.

Program services include

- instruction in basic skills;
- tutorial services;
- academic, financial or personal counseling;
- assistance in completing applications for admission and financial aid for enrollment in 4-year institutions and in graduate and professional programs;
- information about career options;
- mentoring;
- special services for students with limited English proficiency; and
- direct financial assistance to current SSS participants.

In addition to institutional funding, Education helps students and families pay for the costs of postsecondary education through federal student aid authorized under Title IV of the Higher Education Act. In the 2004-2005 school year, Education provided approximately \$74 billion in new grant, loan, and work-study programs for undergraduate students, including eligible Asian American and Pacific Islander students.

Education also has responsibilities for administration and oversight of the department's postsecondary institutional support and financial aid programs, including promoting educational quality and usefulness by supporting research, evaluation, and information sharing. Information sharing may involve strategies such as posting information on Education's Web site and identifying and sharing information on best practices.

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<sup>6</sup>See GAO, *Low-Income and Minority Serving Institutions: Department of Education Could Improve Its Monitoring and Assistance*, [GAO-04-961](#) (Washington, D.C.: Sept. 21, 2004).

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## Collectively, Asian American and Pacific Islanders Have Achieved High Levels of Education and Income, but There are Differences among Asian American and Pacific Islander Subgroups

As a group, Asian American and Pacific Islanders have attained high levels of education and income, but differences among Asian American and Pacific Islander subgroups exist. For example, Asian American and Pacific Islanders had the highest educational attainment and income of any other racial and ethnic group. However, when we viewed Asian American and Pacific Islanders as separate subgroups, a different story emerges, with some subgroups having relatively low educational attainment. While available data lend insights into some of the reasons for these differences, data limitations prevented us from completely exploring them.

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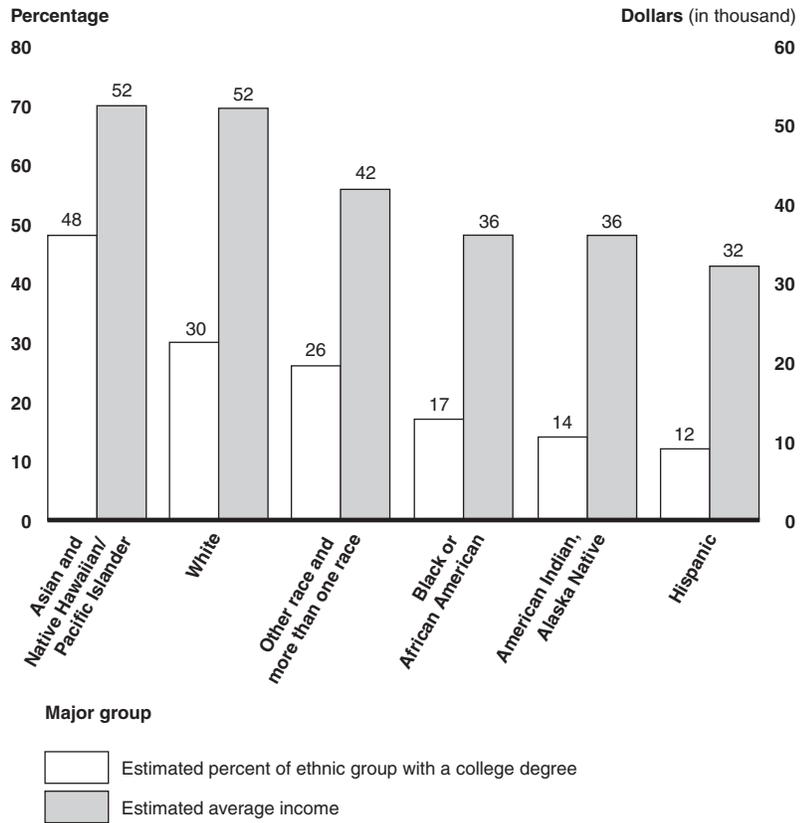
## As a Group, Asian American and Pacific Islanders Have Achieved High Levels of Education and Income

A high percentage of Asian American and Pacific Islanders have a college degree. As shown in figure 3, almost half of Asian American and Pacific Islanders age 25 or older in the United States in 2005 had a 4-year college degree. In comparison, almost one third of whites, 17 percent of African Americans, and 12 percent of Hispanics had degrees. In addition, the average income of employed Asian American and Pacific Islanders, at \$52,392, was the highest of any of the groups.<sup>7</sup> The average income for whites was \$52,097, \$36,025 for African Americans, and \$32,106 for Hispanics.

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<sup>7</sup>Average incomes are calculated for individuals reporting that they were employed.

**Figure 3: Estimated Percentage with at Least a 4-year College Degree and Average Income by Racial and Ethnic Group in 2005**



Source: GAO analysis of ACS data.

Note: Percentage estimates of racial groups have margins of error of 21/2 percent or less. Overall, average income estimates have a margin of error of less than \$2,500.

Across racial groups, average income was highest for people with at least a college degree as shown in table 2, compared to those without a degree. Among the major groups, the difference was highest for Asians and whites where college graduates earned \$35,700 and \$35,200 more than non-college graduates respectively.

**Table 2: Estimated Income by Racial and Ethnic Group and College Degree Attainment in 2005**

Major groups	Average income with at least a college degree	Average income without at least a college degree	Difference in average income with and without at least a college degree
Asian American and Pacific Islander	\$68,549	\$32,887	\$35,662
White	74,760	39,554	35,206
Some other race and more than one race	60,083	33,914	26,168
African American, non-Hispanic	55,271	30,481	24,790
American Indian	56,537	30,860	25,677
Hispanic	\$56,506	\$27,916	\$28,590

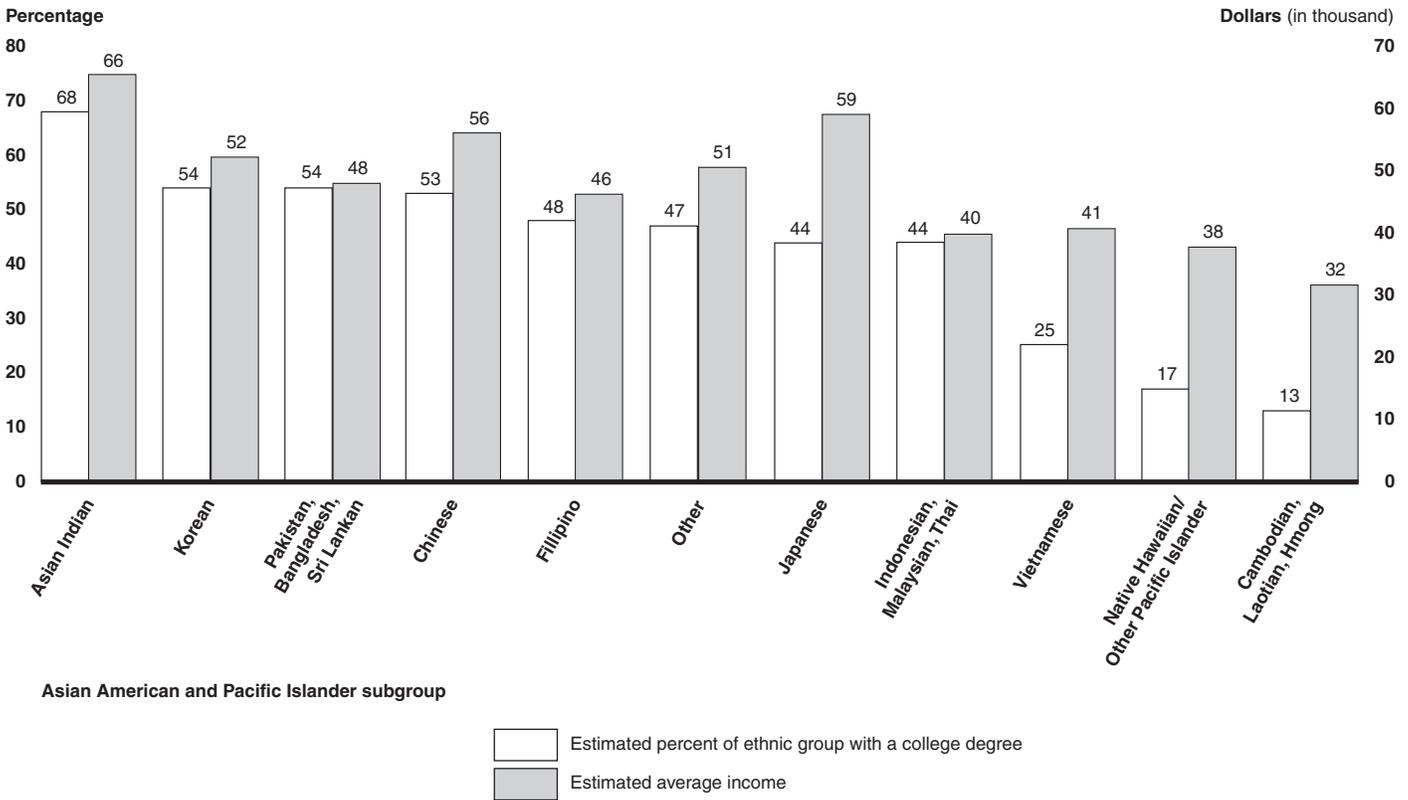
Source: GAO analysis of 2005 ACS data.

Note: Average income estimates by degree status have a margin of error of less than \$2,500, except for estimates for the American Indian subgroup, which has a margin of error of less than \$3,400 and Native Hawaiian and Pacific Islander subgroup estimates, which have a margin of error of less than \$7,500.

### Viewing Asian American and Pacific Islanders as a Group Masks Differences in Educational Attainment and Income among the Subgroups

Viewing Asian American and Pacific Islanders as a group, however, masks major differences in educational attainment and income among their subgroups. As shown in figure 4, a high percentage of Asian Indians (68 percent) and Chinese (53 percent) had at least a college degree. These groups also had much higher percentages of graduate degrees. These two subgroups accounted for 41 percent of the Asian American and Pacific Islander population. In comparison, 25 percent of Vietnamese, 17 percent of Native Hawaiians and Pacific Islanders and 13 percent of other Indochinese—Cambodians, Laotians and Hmong—had a college degree. They are among the smaller Asian American and Pacific Islander subgroups and combined account for 17 percent of Asian Americans and Pacific Islanders. Cambodians, Laotians, and Hmong also had the highest percentage of adult subgroup members who had not completed high school. In addition, the estimated average income of Asian Indians and Chinese at \$65,500 and \$56,000 was relatively high compared to other subgroups. In contrast, average income among employed Asian American and Pacific Islanders was lowest among Native Hawaiians and Pacific Islanders (\$37,718) and other Indochinese (\$31,614).

**Figure 4: Estimated Percentage with at Least a 4-year College Degree and Their Average Income by Asian American and Pacific Islander Subgroup in 2005**



Source: GAO analysis of ACS data.

Notes: Percentage estimates of ethnic groups have margins of error of 4 percent or less.

Overall, average income estimates have a margin of error of less than \$3,000. Exceptions include estimates for the Pakistani, Bangladeshi and Sri Lankan subgroup, which has a margin of error of less than \$3,400 and estimates of the “Other” subgroup, which has a margin of error of less than \$4,300.

Within Asian American and Pacific Islander subgroups estimated average income was again higher for individuals with at least a college degree. As shown in table 3, Asian Indians and Chinese with at least a college degree had the highest estimated average incomes at \$76,630 and \$72,755 respectively. There was also a range in estimated income differences between those with and without at least a college degree. This difference was most pronounced with Asian Indian and Chinese college graduates earning \$42,000 more than their counterparts without college degrees. The

difference in average income between graduates and non graduates was smallest for the other Indochinese at \$17,000. Many factors may explain the differences among subgroups. For example, the proportion with an advanced degree may be an important factor in differences in income. For those with less than a college degree, subgroup differences in age and thus time on the job, along with having an associates degree, may also be important.

**Table 3: Estimated Average Income for Asian American and Pacific Islander Subgroups by Attainment of College Degree in 2005**

Asian American and Pacific Islander subgroup	Average income with at least a college degree	Average income without at least a college degree	Difference in average income with and without at least a college degree
Asian Indian	\$76,630	\$34,585	\$42,046
Chinese	72,755	30,515	42,240
Japanese	71,862	42,654	29,208
Vietnamese	65,782	29,783	36,000
Other Asians	65,547	33,773	31,774
Korean	64,462	35,241	29,221
South Asians	60,987	28,796	32,190
Native Hawaiians and Pacific Islander	58,482	32,705	25,777
Filipino	57,388	34,363	23,025
Southeast Asians	50,227	30,936	19,291
Indochinese	\$45,549	\$28,849	\$16,700

Source: GAO analysis of 2005 ACS data.

Note: Average income estimates by degree status have a margin of error of less than \$5,500, except for estimates for the South Asian, Native Hawaiian and Pacific Islander and Other subgroups which have a margin of error of less than \$7,800.

We looked at other characteristics of the population, such as date of arrival in the U.S. and ability to speak English, to better understand differences in education and income between groups. We found differences in ability to speak English among the Asian American and Pacific Islander subgroups. (See table 4.) Many of these differences may be attributed to whether the subgroup came from a country where English was a second language or whether the group has been in the United States for a long period of time. For example, we found that over 90 percent of Filipino, Asian Indians, and Japanese identified themselves as fluent in English. In comparison, only 70 percent of Koreans, 62 percent of Vietnamese, and 60 percent of the other Indochinese subgroups, whose

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members are more likely to have arrived in the United States more recently, identified themselves as fluent.

**Table 4: Percentage of Asian American and Pacific Islander Subgroups Fluent in English**

<b>Asian American and Pacific Islander subgroup</b>	<b>Total fluent for subgroup (percent)</b>
Native Hawaiian and Pacific Islander	97
Filipino	93
Asian Indian	90
Japanese	90
South Asian	87
Other Asians	85
Southeast Asian	85
Chinese	71
Korean	70
Vietnamese	62
Indochinese	60

Source: GAO analysis of 2005 ACS data.

Note: Overall, percentage estimates of English fluency have margins of error of three percent or less.

Among the Asian American and Pacific Islander subgroups, for the most part those with college degrees were more fluent than those without. Even among those with a degree, however, there was some variation among the groups. (See table 5.) For example, almost all Filipino, Asian Indian, and other South Asians with college degrees (99 to 97 percent) identified themselves as fluent compared to 80 percent of Koreans with a degree. Among those without college degrees, only about one-half of Koreans, other Indochinese, Chinese, and Vietnamese said they were fluent in English.

**Table 5: Percentage of Asian American and Pacific Islander Subgroups with and without College Degree Fluent in English**

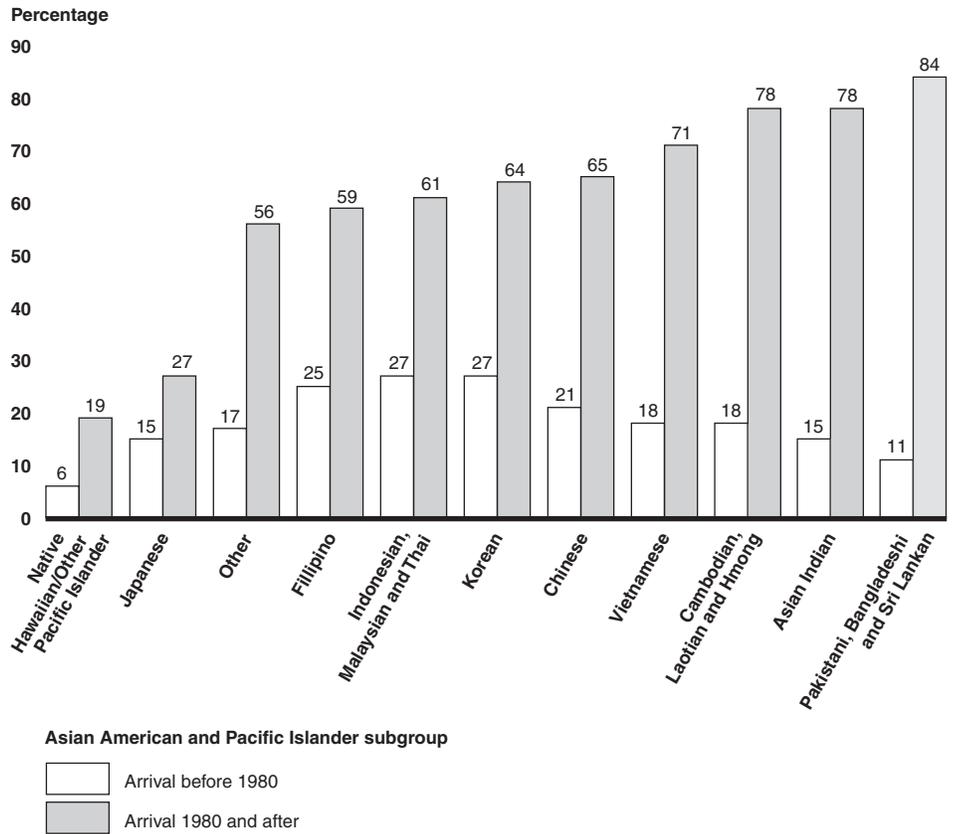
<b>Asian American and Pacific Islander subgroup</b>	<b>Fluent with college degree (Percentage)</b>	<b>Fluent without college degree (Percentage)</b>
Native Hawaiian and Pacific Islanders	99	96
Filipino	98	89
Asian Indian	98	75
South Asians	97	76
Other Asians	96	75
Japanese	93	87
Chinese	92	48
Vietnamese	91	53
Southeast Asians	89	82
Indochinese	88	56
Korean	80	58

Source: GAO analysis of 2005 ACS data.

Note: Percentage estimates of English fluency by degree status have margins of error of four and a half percent or less.

Among foreign born Asian American and Pacific Islander subgroup members age 25 or older in 2005, the majority of the subgroups arrived in the United States after 1980. As shown in figure 5, for example, over three quarters of Cambodian, Laotian and Hmong, and Asian Indians arrived after 1980. Almost 85 percent of South Asians arrived after 1980.

**Figure 5: Percentage of Foreign Born Asian American and Pacific Islander Subgroups Arriving before and after 1980**



Source: GAO analysis of ACS data.

Note: The majority of the Native Hawaiian-Pacific Islanders and Japanese subgroups were native born. Percentage estimates by nativity and arrival status have margins of error of 4 percent or less.

To further analyze factors related to differences in Asian American and Pacific Islander educational attainment, we constructed a multivariate logistic regression model to analyze the relationship between educational attainment and population groups. We used the model to measure the extent to which gender, age, nativity, and date of arrival in the U. S. affected the likelihood of having or not having a college degree. However, we did not include income or the ability to speak English in the model because of data limitations. In addition, the data did not provide information on such things as the parents' income or educational level,

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which a large body of research has shown is a strong predictor of their children's educational attainment.<sup>8</sup> The ACS also did not provide the date or in which country a degree was attained.

The model showed that, while significant, the factors for which we had data do not account for the differences in the likelihood of various groups' having a college degree. We caution that the results of this model do not imply differential treatment of the groups with respect to access to higher education. Since many Asian American and Pacific Islander immigrants arrive in the U.S. with at least a college degree, the experience of Asian American and Pacific Islanders attending high school or college in the U.S. may provide more illumination into possible differences among subgroups. Appendix I provides additional information about our multivariate model and results.

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## Students from Asian American and Pacific Islander Subgroups Differ in the Challenges They Face When Pursuing Postsecondary Education

Data on Asian American and Pacific Islanders while they were in high school and college in the United States show that subgroups face a range of challenges when pursuing and persisting in postsecondary education. Specifically, the data showed that some Asian American and Pacific Islander subgroups are less academically prepared for college, less able to afford college, and have difficulty balancing their education, work, and family responsibilities.

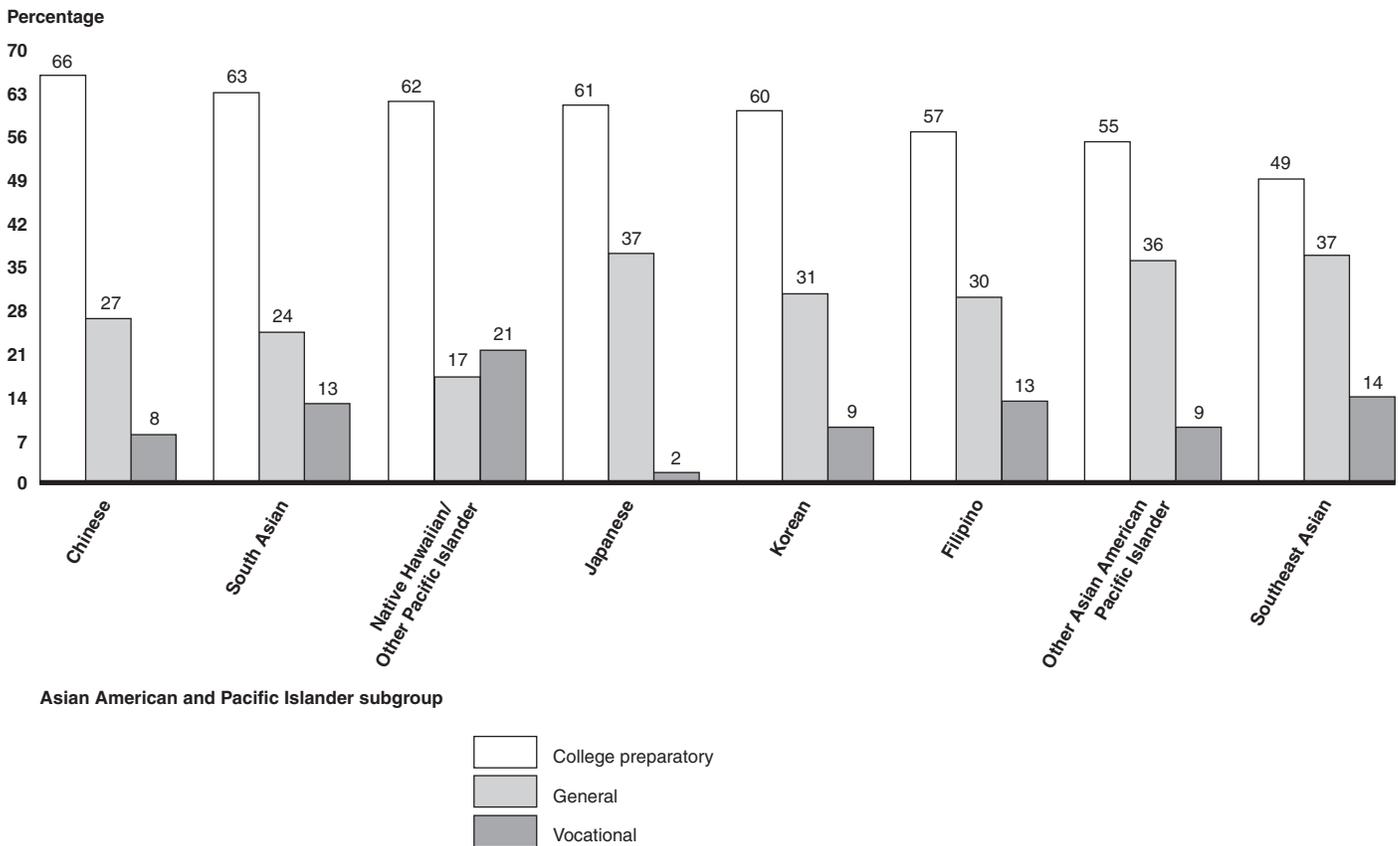
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<sup>8</sup>The research literature on status attainment, beginning in the 1960s with the work of sociologist Otis Dudley Duncan at the University of Michigan, firmly established parents' education as a predictor of socioeconomic status, a measure that includes income, occupation, and educational attainment.

## Levels of Academic Preparedness Differ among Asian American and Pacific Islander Subgroups

Our analysis of ELS data showed that the percentage of high school students in a college preparatory program differed among Asian American and Pacific Islander subgroups. As shown in figure 6, fewer Southeast Asian students than students in other Asian American Pacific Islander subgroups reported being in a college preparatory program.<sup>9</sup>

**Figure 6: High School Academic Program, by Asian American and Pacific Islander Subgroup in 2002**



Source: GAO analysis of ELS data.

<sup>9</sup>All differences reported were statistically significant at the 95 percent confidence level unless otherwise noted. If no difference actually existed in the population, we would only expect to find a difference as large as the one found in the ELS and NPSAS samples less than 5 percent of the time.

The percentage of students taking English as a Second Language (ESL) courses also differed among Asian American and Pacific Islander subgroups, as shown in table 6. Southeast Asian students—Vietnamese, Laotian, Cambodian/Kampuchean, Thai, Burmese—were unique among the subgroups in that they reported the highest percentage of students taking ESL courses and the lowest percentage of students with English as their native language. Part of the reason that Southeast Asian students are unique in this way is that among Asian American and Pacific Islander subgroups, Southeast Asian students have the highest percentage of parents with a high school education or less and the lowest percentage of parents who speak English as their native language. On the other hand, Japanese students, many of whom come from families that have been in the United States for generations, have a higher percentage of native English speakers than Southeast Asian students, many of whom arrived in the United States since 1980 and speak a language other than English in the home. As a result, Southeast Asian students may have less familiarity with the English language and may require additional language support.

**Table 6: Percentage of Students Taking ESL Courses by Asian American and Pacific Islander Subgroup**

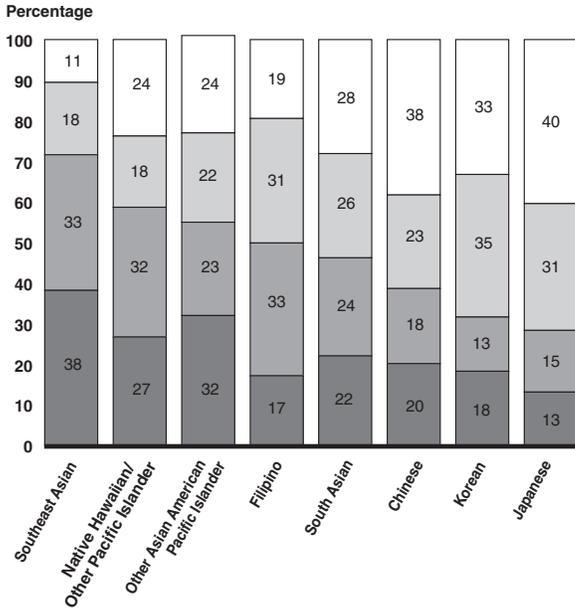
<b>Asian American and Pacific Islander subgroup</b>	<b>Percentage of students who have taken ESL courses</b>	<b>Percentage of students with English as their native language</b>
Southeast Asian	23	13
Native Hawaiian/ Other Pacific Islander	21	74
Korean	19	48
Chinese	16	31
Other Asian American and Pacific Islander	15	70
South Asian	13	34
Filipino	11	59
Japanese	8	71

Source: GAO analysis of ELS 2002 base-year survey data.

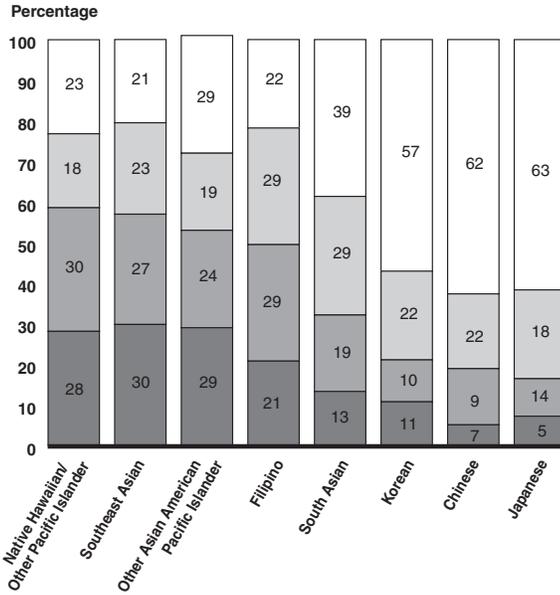
Students' reading and math ability also differed by Asian American and Pacific Islander subgroup, with half or more of the students in each of the Southeast Asian, Native Hawaiian and Pacific Islander, and Other Asian American Pacific Islander subgroups in the lower reading and math quartiles, as shown in figure 7.

**Figure 7: High School Reading and Math Quartiles, by Asian American and Pacific Islander Subgroup**

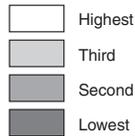
**Reading**



**Math**



Asian American and Pacific Islander subgroup



Source: GAO analysis of ELS data.

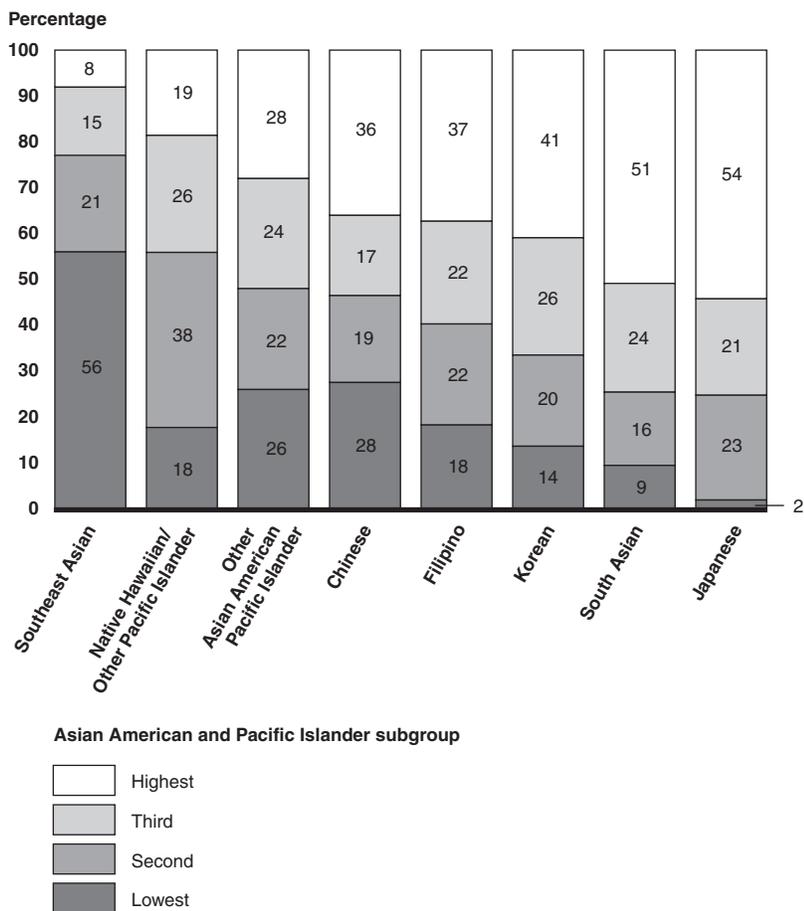
Note: The reading and math quartile rankings were derived from student respondents' scores on cognitive reading and math tests administered as part of the ELS 2002 base-year (reading) and first follow-up (math) surveys. The reading and math tests used questions selected from tests that were part of Education's other assessments, including the National Education Longitudinal Study of 1988, the National Assessment of Educational Progress, and the Program for International Student Assessment.

Some Asian American and Pacific Islander students participating in our discussion groups told us that they had been placed into remedial English and math courses when they first enrolled in college. In addition, some students told us that they felt that their high schools had not prepared them well, saying that they had felt ignored by their teachers, uninformed about their postsecondary options, and unprepared for the changes that accompany the transition from high school to college.

## Some Asian American and Pacific Islander Subgroups Face Challenges Meeting Postsecondary Education Costs

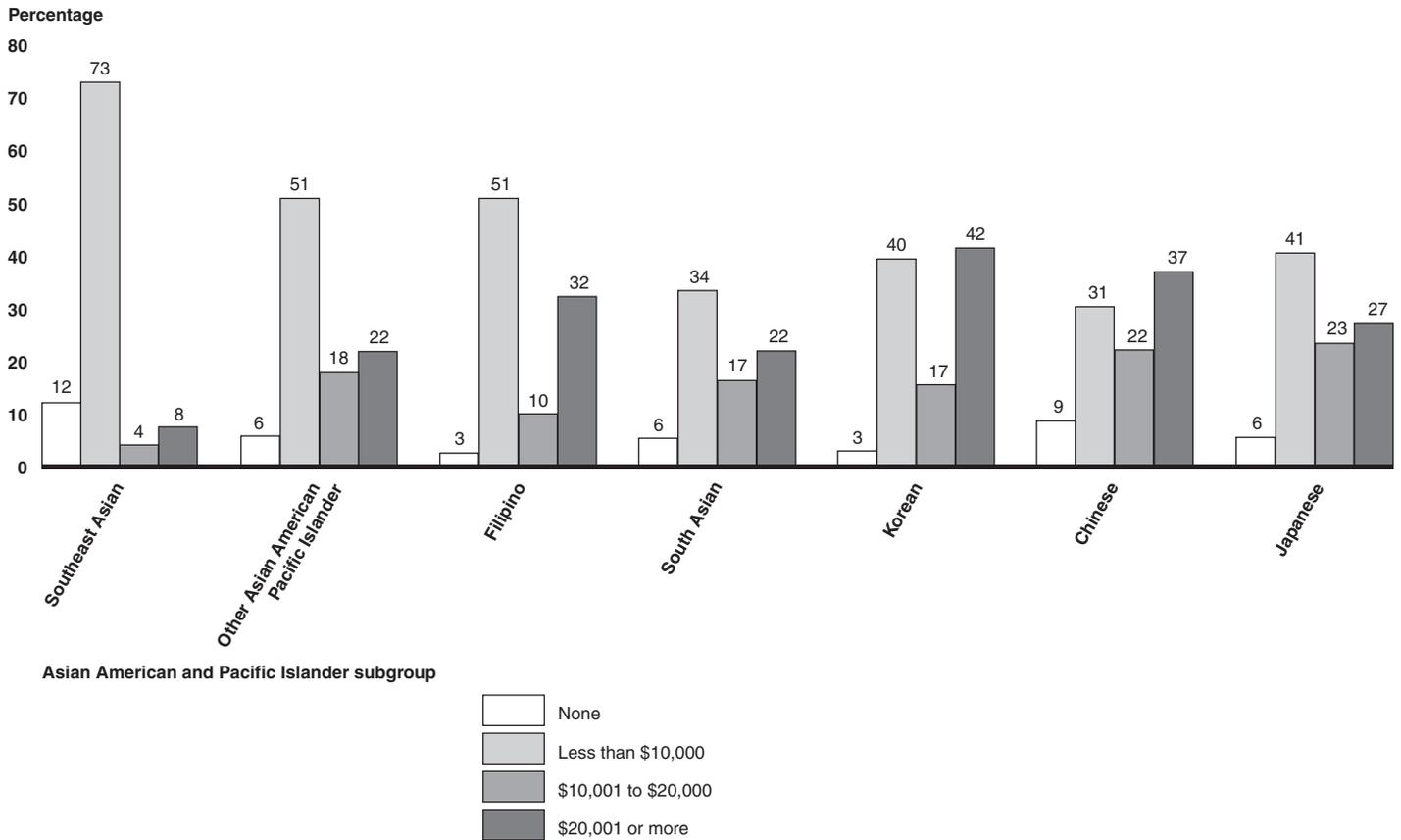
The amount of savings that parents set aside for their children's postsecondary education differed across Asian American and Pacific Islander subgroups. The Southeast Asian and the Other Asian American Pacific Islander subgroups had larger proportions of their population in the lower socioeconomic quartiles, as shown in figure 8, and reported lower savings amounts, as shown in figure 9. Of note, when we compared these two subgroups with African Americans and Hispanics, we found similar rates of savings.

**Figure 8: Socioeconomic Status Quartile of High School Students, by Asian American and Pacific Islander Subgroup in 2004**



Source: GAO analysis of ELS data.

**Figure 9: Percentage of Asian American and Pacific Islander Subgroups Setting Aside Money for Child’s Future Education in**



Source: GAO analysis of ELS data.

2002

Note: This figure does not include findings for Native Hawaiian and other Pacific Islanders due to insufficient sample size around which to build a confidence interval.

Asian American and Pacific Islander subgroups also differed in the extent to which they could afford school without working. Our analysis of NPSAS data showed that larger percentages of undergraduates in some Asian American and Pacific Islander subgroups had parents help in paying their tuition. For example, 33 percent of Japanese undergraduates reported that their parents paid all their tuition. In contrast, 81 percent of Vietnamese undergraduates reported that their parents paid none of their tuition. Subgroups also differed in the extent to which students could afford school without working, ranging from 36 percent of Vietnamese to 68 percent of Chinese undergraduates reporting that they could afford school

without working. Finally, our analysis of NPSAS data showed that subgroups with less savings and who were less able to afford college had larger percentages of students who applied for financial aid to help pay college expenses.

**Some Asian American and Pacific Islander Subgroups Find It Challenging to Balance Their Academic, Work, and Family Obligations**

Our analysis of NPSAS data showed that a greater percentage of undergraduates in some Asian American and Pacific Islander subgroups than in others delay their college education. Nearly one-half of Vietnamese undergraduates reported that they delayed their education and one-third of them delayed their education by 1 year or more, as shown in table 7. Some Asian American and Pacific Islander students participating in our discussion groups told us that they faced challenges balancing their work, family, and academic responsibilities leading some to delay their education.

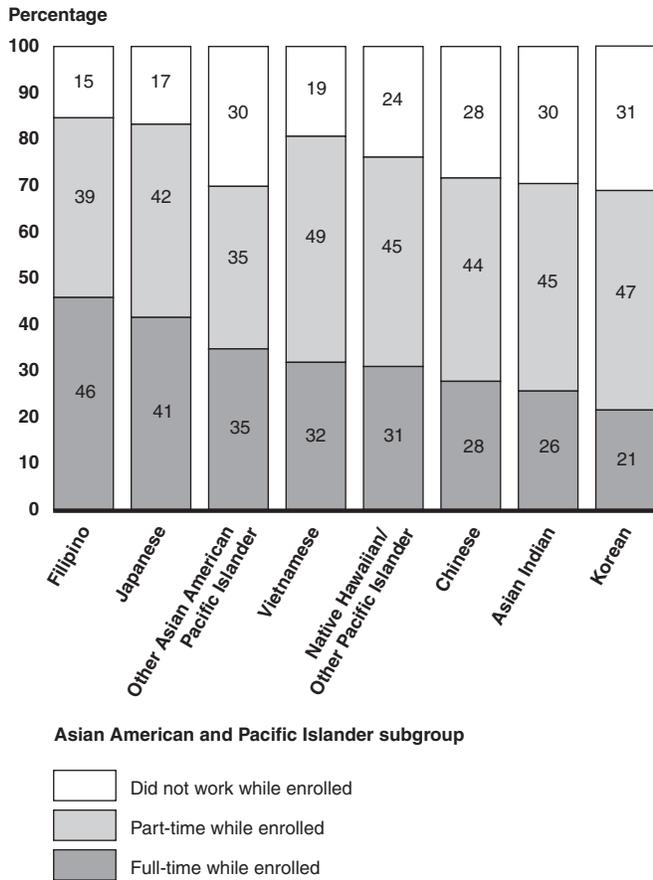
**Table 7: Percentage of Undergraduates Delaying Their Postsecondary Enrollment, by Asian American and Pacific Islander Subgroups in 2000**

Asian American and Pacific Islander subgroup	More than 1 year	1 year	Did not delay
Vietnamese	33	12	54
Other Asian American and Pacific Islander	31	9	60
Filipino	23	12	64
Native Hawaiian/Other Pacific Islander	23	13	63
Chinese	20	8	72
Asian Indian	16	19	66
Korean	12	11	77
Japanese	9	19	71

Source: GAO analysis of NPSAS 2000 undergraduate data.

Our analysis of NPSAS data showed that undergraduates' working while enrolled differed by Asian American and Pacific Islander subgroup, with undergraduates in some Asian American and Pacific Islander subgroups working more hours than others, as shown in figure 10.

**Figure 10: Work among Enrolled Undergraduates, by Asian American and Pacific Islander Subgroups in 2000**



Source: GAO analysis of NPSAS data.

The primary reasons that undergraduates gave for working varied among the Asian American and Pacific Islander subgroups. More than half of undergraduates from all Asian American and Pacific Islander subgroups except Asian Indian and Korean said that they worked primarily to pay tuition, fees, and living expenses. In addition, 43 percent of Korean undergraduates said that they worked primarily to earn spending money, and about 30 percent of Chinese and Asian Indian undergraduates said that they worked primarily to gain job experience.

Asian American and Pacific Islander students participating in our discussion groups provided several reasons why they worked, including the need to pay for school; the need to pay such bills as rent, insurance,

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and food; and the desire to have their own spending money for entertainment. Others said that they worked to relieve their family's financial burden, to gain financial independence from their parents, or to fulfill their obligation as the eldest child by financially supporting the family.

Several discussion group participants also said that they supported their families in other ways, including living at home to share expenses, providing transportation, tutoring, translating, reading mail, writing letters, paying bills, answering calls, and doing household chores. Large percentages of some Asian American and Pacific Islander subgroups lived at home or attended schools within driving distance of home. Our analysis of NPSAS data showed that 42 percent of Vietnamese undergraduates lived at home while enrolled—the highest percentage among Asian American and Pacific Islander subgroups. It also showed that a greater percentage of Vietnamese undergraduates (96 percent) attended institutions in their home states compared to 85 percent of Chinese and Koreans, and 80 percent of Japanese undergraduates. Finally, 59 percent of Native Hawaiian and Pacific Islander undergraduates, and 58 percent of Vietnamese undergraduates attended institutions within 10 miles of home.

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## **Institutions Used Both Federal Aid and Their Own Funding and Resources to Address the Needs of Asian American and Pacific Islander Students**

The colleges we visited used federal aid and institutional resources to address the needs of Asian American and Pacific Islander students. Using these resources, colleges funded a range of services, including services to enhance students' academic performance and scholarships. Additionally, students also received federal financial aid to help them pay for college.

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**Institutions Used Federal Aid Targeted to Institutions That Serve Minority, Low-income, and First-Generation College Students to Assist Asian American and Pacific Islander Students**

The institutions we visited—all of which serve large Asian American and Pacific Islander populations—used federal funding that is awarded to schools for serving low-income, disabled, minority, and first-generation college students to respond to the needs of Asian American and Pacific Islander students. As shown in table 8, colleges that meet the eligibility criteria for funding had available a range of funding from federal sources. A prior GAO report contains additional information on the types of services that institutions provide with Title III and V grants.<sup>10</sup> For example, one college we visited received a Title III Strengthening Institutions grant because the college served a significant portion of low-income students and had below average expenditures for institutions that offer similar instruction, two key eligibility criteria for the grant. In addition, some of the colleges we visited that serve low-income students, first-generation college students, and disabled students, received TRIO Student Support Services (SSS) grants. In addition, some colleges also received funding under federal programs for Native Hawaiian students.

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<sup>10</sup>GAO, *Low-Income and Minority Serving Institutions: Department of Education Could Improve Its Monitoring and Assistance*, [GAO-04-961](#) (Washington, D.C.: Sept. 21, 2004).

**Table 8: Description of Federal Institutional Grant Programs Used at Visited Institutions**

Dollars in millions

Program name	Program objective	Eligibility criteria	Fiscal year 2006 funding <sup>a</sup>
Title III, part A, Strengthening Institutions	Improve academic quality, address institutional management issues, and improve student services and outcomes	<ul style="list-style-type: none"> <li>An institution's average educational and general expenditures are low compared to institutions that offer similar instruction<sup>b</sup></li> <li>At least 50 percent of its students receive need-based federal financial assistance or a substantial percentage of students receive Pell Grants compared with those in other institutions<sup>b</sup></li> <li>Is legally authorized to provide a bachelor's degree program or is a junior or community college</li> <li>Is accredited by a nationally recognized accrediting agency</li> </ul>	\$80
Title III, part A, Alaska Native and Native Hawaiian	Improve academic quality, address institutional management issues, and improve student services and outcomes	Institution must meet the eligibility requirements for the Strengthening Institutions program and have an enrollment of undergraduate students that is at least 10 percent Native Hawaiian students	2 <sup>c,d</sup>
TRIO Student Support Services	Provide opportunities for academic development, assist students with basic college requirements, and serve to motivate students toward the successful completion of their postsecondary education.	An institution must assure in its application that at least two thirds of the students served with the grant will be low-income individuals who are first-generation college students or individuals with disabilities. The remaining students served will be low-income individuals, first-generation college students, or individuals with disabilities. In addition, at least one third of the individuals with disabilities will be low-income individuals. An institution must also show that students participating in the grant program will be offered sufficient financial assistance to meet their full financial need.	271
Native Hawaiian Education	Develop innovative education programs to assist native Hawaiians and to supplement and expand programs and authorities in the area of education	Organizations must be a Native Hawaiian educational organization, Native Hawaiian community-based organization, or a public or private nonprofit organization, agency, or institution with experience in developing or operating Native Hawaiian programs or programs of instruction in the Native Hawaiian language.	34
Native Hawaiian Career and Technical Educational Grant	Provide assistance to plan and administer programs or portions of programs that provide vocational training and related activities to native Hawaiians	Community-based organizations primarily serving and representing Native Hawaiians. A community-based organization means a public or private nonprofit organization that provides career and technical education, or related services, to individuals in the Native Hawaiian community.	\$3

Source: GAO analysis of program documentation from Education.

<sup>a</sup>This represents full funding to all grant recipients in fiscal year 2006. Figures are rounded.

<sup>b</sup>These criteria may be waived.

<sup>c</sup>This figure represents grants awarded to institutions with at least 10 percent Native Hawaiian students.

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<sup>4</sup>Education has proposed discontinuing funding for Title III, Part A, Alaska Native/Native Hawaiian Institutions in its fiscal year 2008 budget proposal. According to Education, the types of activities supported by this program may be carried out under the Title III Strengthening Institutions program. Institutions whose projects would be discontinued would be eligible to seek funds under the Strengthening Institutions program.

The schools we visited funded a range of services with the federal institutional grants they received, and more schools received funding under the TRIO SSS grants than other grants. (See table 9). For example, Century College in Minnesota, San Francisco State University, and City College of San Francisco all received a TRIO SSS grant. Century College provides tutoring and counseling services with its grant and supplements Pell Grants to help students struggling to meet college costs. The TRIO SSS director at Century College said that each of the Pell Grants awarded to 30 students is supplemented with \$414 each year. He also said that 90 percent of the students in the TRIO SSS program are Hmong. San Francisco State University uses its TRIO SSS grant to fund a program that provides eligible students, many of whom are Asian American, with academic advising, tutoring, counseling and workshops. City College of San Francisco uses its TRIO SSS to fund the Writing Success Project which provides writing instruction, group tutoring, academic counseling, and a variety of workshops. City College of San Francisco also uses a Title III Strengthening Institutions grant to fund an instruction lab. Through the lab, students receive instruction in English, math, and ESL. A university official said that about 80 percent of the students who are served by the lab are Asian. Kapi'olani Community College in Honolulu uses a portion of its Title III Alaska Native and Native Hawaiian grant to provide freshman Native Hawaiians with mentoring and peer tutoring. It also provides its broader student body with remedial courses. It also used the grant to help fund courses on Hawaiian and Pacific Islander cultures and history and provide academic services to students including peer mentoring and academic advising, tutoring, and help applying for financial aid.

**Table 9: Federal Institutional Grant Programs Used by Institutions Visited On-site**

Program	Century College in Minn.	City College of San Francisco in Calif.	Concordia University in Minn.	De Anza College in Calif.	Kapi'olani Community College in Ha.	Leeward Community College in Ha.	San Francisco State University in Calif.	University of Hawaii-Manoa in Ha.
Title III, part A, Strengthening Institutions		X						
Title III, part A, Alaska Native and Native Hawaiian					X			
TRIO Student Support Services	X	X			X		X	X
Native Hawaiian Education Grant								X
Native Hawaiian Career and Technical Educational Grant					X	X <sup>a</sup>		

Source: GAO analysis of on-site interviews and related documentation.

<sup>a</sup>Information on Leeward Community College's use of Native Hawaiian Career and Technical Educational Grant was not available at the time of our site visit.

Federal grants targeted to Native Hawaiians also supported a range of services. The University of Hawaii at Manoa runs three programs for Native Hawaiian students using its Native Hawaiian Education Grant. Under one program, the university helps prepare 25 Native Hawaiian students for college, by providing, among other things, a 6-week-remedial-writing course. This program also funds up to 50 tuition scholarships each year for Native Hawaiian students. Another program provides tuition stipends to 30 Native Hawaiian students who are enrolled or interested in Science, Technology, Engineering, and Math (STEM)-related degrees. These students receive academic guidance and counseling and exposure to professionals in their fields of study. Lastly, the Native Hawaiian Science and Engineering Mentorship Program provides summer internships for 30 freshmen engineering students. Kapiolani provides Native Hawaiian students in certificate or associates programs with computer access, peer mentoring, academic advising, career counseling,

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leadership training, and internships through a Native Hawaiian Career and Technical Educational Program grant.<sup>11</sup>

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### Colleges Use Their Own Resources to Provide Asian American and Pacific Islander Students with Tuition Assistance or Academic Services

Officials at some of the institutions we visited reported that institutional resources supported a diversity of approaches including, outreach to high school students as well as scholarships and academic services for Asian American and Pacific Islander college students. For example, officials at Concordia University located in Minnesota and at Leeward Community College in Hawaii both reported that they make presentations to recruit high school students to their institutions and inform them about federal student aid. The schools also offer to help students and parents complete the Free Application for Federal Student Aid (FAFSA), which is often a stumbling block for some students in the student financial aid application process. An official at Concordia University said one staff member who conducts outreach to high school students is Hmong, a factor that helps recruiting because he is aware of Hmong cultural norms and is able to share information in the Hmong language. The official also said that this staff member is vital to the retention of Hmong students at Concordia University because his role extends beyond admissions into general counseling. Century College also has a Hmong staff member who successfully recruited Hmong students to the college from area high schools.

Officials at some of the schools we visited said that these programs and strategies reached underserved populations while they were still in high school and equipped students enrolled in postsecondary education with the tools and resources needed to persist in earning their certificate or degree. In past reports, GAO also has found that providing low-income and minority students with tutoring, mentoring, and instruction in various subjects, including math and writing, beginning in high school, improved the students' educational attainment. The officials we interviewed also said that they wanted to know about the diversity of strategies other institutions were using to assist Asian American and Pacific Islanders. For example, one community college official had taken the initiative to collaborate with colleagues at her institution and other community

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<sup>11</sup>This grant was awarded to ALU LIKE, Inc. which is a nonprofit organization for Native Hawaiians based in Honolulu. Kapi'olani Community College is a subgrantee. An official said non-Native Hawaiian students who request these services (except for internship placements) may be served as long as they do not displace Hawaiian students who take priority.

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colleges to develop strategies for improving the retention rates of minority students, including Asian American and Pacific Islanders. In another state, state college and university officials meet each year to share information about best practices they use to assess and assist students, including Asian American and Pacific Islander students.

The University of Hawaii at Manoa offers in-state tuition rates to students who come from Pacific Islands that do not have postsecondary public institutions that offer bachelor's degrees.<sup>12</sup> The funding assists Pacific Island students who are severely underrepresented on campus. Similarly, Concordia University in Minnesota has a scholarship that targets Hmong students, who we were told comprise the majority of Asian American and Pacific Islander students on campus and tend to come from low-income families. An official said the scholarship fund is about \$1,000, and it is typically awarded to one or two students annually. His office is trying to find ways to provide Hmong and other needy students with additional assistance. University of Hawaii at Manoa provides Native Hawaiian students with advising, tutoring, and assistance applying for financial aid through the Office of Student Affairs. The services were established in 1988 to respond to challenges the university faced in recruiting and retaining Native Hawaiian students. The university also provides institutional resources to help fund similar services for students of Filipino ancestry and other underrepresented ethnicities including Pacific Islanders, Southeast Asians, and African Americans through the Office of Multicultural Student Services.

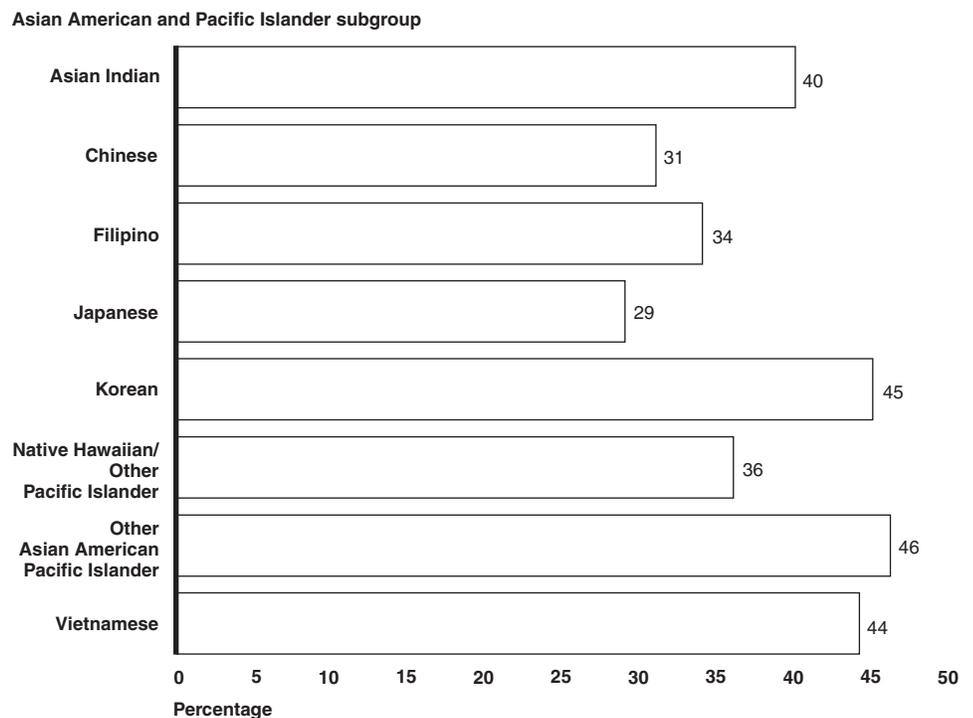
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<sup>12</sup>This includes residents of American Samoa, Commonwealth of the Northern Marianas, Cook Islands, Federated States of Micronesia, Futuna, Kiribati, Nauru, New Caledonia, Niue, Republic of Belau, Republic of the Marshall Islands, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis.

## Eligible Asian American and Pacific Islander Students Also Received Federal Student Aid

Federal student financial aid is available to eligible Asian American and Pacific Islander students, and according to the NPSAS 2000, many of them received financial aid. See appendix II for the types of federal student aid. According to the 2000 NPSAS, the percent of Asian American and Pacific Islander students who reported applying for and receiving any federal aid varied by subgroup. Twenty-nine percent of Japanese students, a subgroup with a high average income, applied for and received federal aid, compared to 46 percent of students identified as other Asian American and Pacific Islander in the NPSAS data.<sup>13</sup> A significant percent of Korean students, 45 percent, also reported applying for and receiving any federal aid. (See fig. 11).

**Figure 11: Percentage of Asian American and Pacific Islander Students Who Applied for and Received Any Federal Aid in 2000**



Source: GAO analysis of NPSAS data.

<sup>13</sup>As noted above, the amount of federal aid a student receives depends partly on the cost of attendance, except for Unsubsidized Stafford loans. However, NPSAS data does not include information on the cost of attendance. As a result, we could not determine how cost differences affected which subgroups received federal aid.

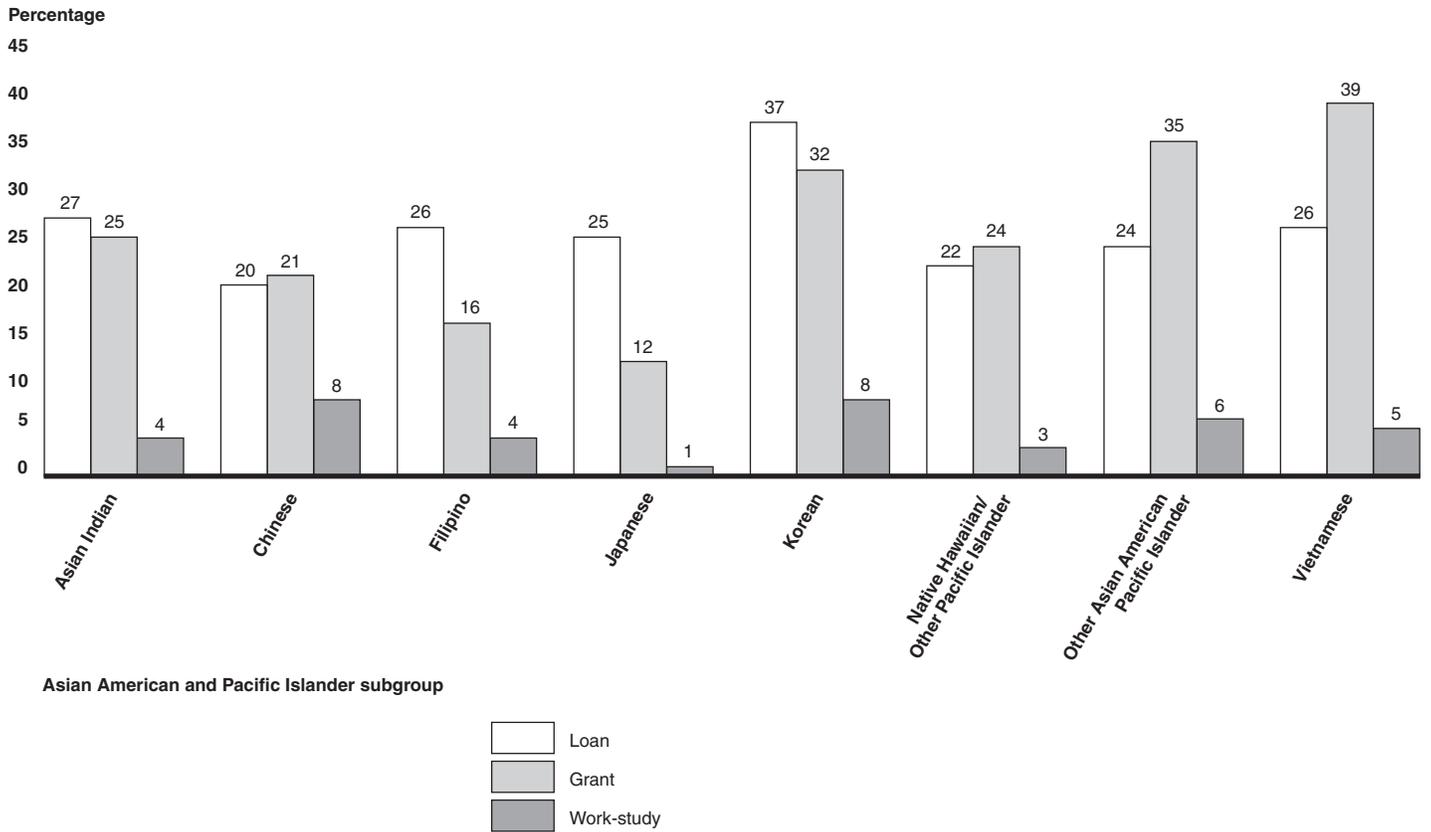
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A small percentage of Japanese students, 12 percent, applied for and received grants. By contrast, nearly 35 percent of the other Asian American and Pacific Islander students in the NPSAS data and 39 percent of Vietnamese students reported applying for and receiving grants. The percent of students who reported applying for and receiving a federal loan<sup>14</sup> was 20 percent or more across all subgroups. Over a quarter of Filipino, Indian, and Vietnamese students and over a third of Korean students said they had applied for and received federal student loans. The percent of students that reported applying for and receiving federal work-study was 8 percent or below across all subgroups. Just over 1 percent of Japanese students applied for and received work-study grants. By contrast, close to 8 percent of Korean students reported applying for and receiving work-study grants. Few Japanese students may have received federal grants and work-study because they come from a subgroup with high average incomes and both types of aid have family income limits. (See fig. 12.)

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<sup>14</sup>These data include students who applied for and received Perkins and/or Stafford federal loans and/or PLUS loans and/or federal loans through the Public Health Service in 1999 to 2000.

**Figure 12: Percentage of Asian American and Pacific Islander Students Who Applied for and Received a Federal Loan, Grant, or Work Study in 2000**



Source: GAO analysis of NPSAS data.

## Conclusions

Because Asian American and Pacific Islanders are a rapidly growing population, an increasing number of postsecondary institutions may find a higher percentage of Asian American and Pacific Islander students represented in their student bodies. While Asian American and Pacific Islanders, as a group, have high levels of education and income, members of some subgroups are more likely to face challenges, especially with English as a second language and math, in pursuing and persisting in postsecondary education. The schools such students attend will need to identify strategies and services to support these students. The institutions that we visited had a range of programs, activities, and efforts in place to reach out to underserved Asian American and Pacific Islander students in high school and support them academically when they enroll in

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postsecondary institutions. Moreover, GAO's prior work has confirmed that providing supports to both to low-income and minority students and the institutions that serve them improves educational attainment. GAO has also acknowledged the value of information sharing as an effective method for disseminating information more broadly on diverse practices aimed at improving educational attainment. Postsecondary institutions with a new influx of Asian American and Pacific Islander students needing assistance could learn from the experience of those we visited. However, currently, no effective mechanism exists for sharing these approaches among institutions that serve Asian American and Pacific Islander students.

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## Recommendation

To assist postsecondary institutions that serve Asian American and Pacific Islander students, particularly students from low-income families, we recommend that the Secretary of Education facilitate the sharing of information among institutions about strategies that foster low-income postsecondary student recruitment, retention, and graduation and also sharing of information about strategies to reach out to Asian American and Pacific Islanders beginning in high school. There are various ways that Education could facilitate sharing information. For example, Education might develop a link on the department's Web site that postsecondary institutional officials could use to share information about their student assistance activities or develop a compendium of best practices for assisting Asian American and Pacific Islander students.

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## Agency Comments

We provided a draft of the report to the Department of Education for review and comment. Education generally agreed with our recommendation concerning sharing information among postsecondary institutions about strategies for assisting Asian American and Pacific Islander students. Education pointed out two types of efforts that are in place. The first effort is information about minority-serving institutions' successful practices that the Office of Postsecondary Education makes available to the public and all grantees on its program "Success Stories" Web page. However, Education provided us with examples of Hispanic-serving institutions' successes from this Web page, not of strategies for assisting Asian American and Pacific Islander students. Education also said that minority-serving institutions make a project abstract for each grantee available on the institutions' own Web pages. Education agreed to examine options for facilitating information sharing by encouraging more grantees to report successful practices on their Web pages. However, we believe that Education is uniquely positioned to serve as a broker for

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information sharing, using its own Web site to facilitate the exchange of information about successful strategies related to Asian American and Pacific Islander students.

Education also interpreted our recommendation to suggest that increased efforts be made in the area of outreach to Asian American and Pacific Islanders students while in high school. While the postsecondary officials we interviewed and our own prior work confirm that outreach to students beginning in high school improves educational attainment, the intent of our recommendation was sharing information about outreach strategies to Asian American and Pacific Islander students. In response, we have made some minor revisions in wording to clarify the recommendation.

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We are sending copies of this report to the Secretary of Education, relevant congressional committees, and other interested parties. We also will make copies available to others upon request. In addition, the report will be made available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7215 or [scottg@gao.gov](mailto:scottg@gao.gov). Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix IV.



George A. Scott  
Director, Education, Workforce, and  
Income Security Issues

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# Appendix I: Scope and Methodology

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This appendix discusses in detail our methodology for determining whether differences exist in Asian American and Pacific Islander subgroups' educational attainment and income and the resources available to address any challenges they may face in pursuing and completing postsecondary education. The study was framed around three questions: (1) What are Asian American and Pacific Islander subgroups' educational attainment and household income levels? (2) What challenges, if any, Asian American and Pacific Islander students face in pursuing and completing their postsecondary education? (3) What federal and institutional resources institutions with large Asian American and Pacific Islander student enrollment use to address the particular needs of these students?

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## Procedures for Determining Asian American and Pacific Islander Subgroups' Educational Attainment and Household Income Levels

To determine the educational and other demographic characteristics of the Asian American and Pacific Islander population and subgroups, we analyzed data from the 2005 American Community Survey Public Use Microdata Sample (ACS PUMS) file.

### Data Collection

The ACS survey data were the most recent existing data source available containing complete information on Asian and Native Hawaiian and Pacific Islander subgroups. The ACS is an annual household survey conducted by the Census Bureau that obtains estimates of the demographic and social characteristic of the US population, including racial and ethnic groups, income, educational attainment, age, and others. The ACS annually surveys a sample of 3 million households and currently provides estimates for population areas of at least 65,000. To ensure that most ACS respondents in our analyses would have had enough time to complete their postsecondary education, we limited our analysis to adults in the sample 25 years of age or older.

We used the SUDAAN software package for statistical analyses to produce the weighted estimates, standard errors, and tests of significance. Estimates calculated from the ACS data are weighted based on each individual's weight in the sample. Standard errors for estimates for Asian American and Pacific Islander subgroups were calculated using the 80 balanced repeated replicate weights with a Fay's adjustment of  $k=0.5$  supplied by Census in the 2005 ACS PUMS data. Standard errors for estimates for the entire population were calculated using Taylor series

variance estimation. The precision of estimates based on the ACS data is identified as the 95 percent confidence level margin of error (MOE) and is footnoted in tables and figures where estimates are presented.

To assess the reliability of the ACS, we reviewed the technical documentation for these data files, including the coding and definition of variables of interest, the procedures for handling missing data, coding checks, and imputation procedures for missing data. We also interviewed Census Bureau staff about selected variables—such as race, ethnicity and English fluency—used in our analysis. We considered the response rate, allocation rate—the rate at which responses are imputed for unanswered questions—and size of confidence intervals. Because the ACS had a very high response rate, a low allocation rate, and narrow confidence intervals, we found the 2005 ACS data to be sufficiently reliable for our study objectives.

## Data Analysis

We analyzed the ACS data using both descriptive statistical analysis procedures and a multivariate logistic regression model. For our descriptive analyses, we reviewed summary statistics of the individual variables as well as bi-variate and three-way analyses of the broad racial and ethnic groups—American Indian, white, black, Hispanic, Asian-American, and Native Hawaiian or other Pacific Islanders—and the individual Asian American and Pacific Islander subgroups by educational attainment, mean (or average) income, gender, level of English fluency, nativity, and date of arrival in the United States. In addition, we conducted multivariate analysis of the likelihood of graduating from college across racial and ethnic groups and Asian American and Pacific Islander subgroups. The multivariate analysis is discussed in more detail below.

To analyze the individual Asian American and Pacific Islander subgroups in both the descriptive and multivariate analyses, we used the ACS definition of “Asian”, that is, a person who resides in the United States and has origins in any of the original peoples of the Far East, Southeast Asian, or the Indian subcontinent. The ACS definition of Native Hawaiian or Other Pacific Islander is a person who resides in the United States and has origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

To minimize sampling error in Asian American and Pacific Islander subgroup estimates, we combined some of the ACS racial and ethnic categories with limited sample size. Any distinct category with a sample size of at least 1,000 individuals age 25 or older was included as an Asian subgroup for this analysis. Those that had fewer than 1,000 individuals

were combined with other subgroups based on geographic origins. For example, 'other South Asians' included individuals with origins from Pakistan, Bangladesh, and Sri Lanka. Further, there were six ACS categories with origins in Southeast Asia which we combined into two different subgroups based on grouping subpopulations with similar college degree attainment, mean income, and fluency in English. The resulting ACS categories that were used as Asian American and Pacific Islander subgroups in our analyses were

- (South) Asian Indian,
- South Asians (Pakistani, Bangladeshi and Sri Lankan),
- Chinese,
- Japanese,
- Korean,
- Filipino,
- Vietnamese,
- Southeast Asians (Indonesian, Malaysian and Thai),
- Indochinese (Cambodian, Hmong, and Laotian),
- Native Hawaiians and other Pacific Islanders (Native Hawaiian, Samoan, Tongan, Polynesian, Guamanian, Chamorro, Micronesian, Melanesian, and other or combined Native Hawaiian and Pacific Islanders), and
- other Asians (other specified Asian, unspecified Asian, and combinations of Asian groups).

Having found in our descriptive analyses that there were differences in educational attainment among Asians and other racial and ethnic groups and among subgroups of Asians themselves, we were interested in whether these differences were affected, or could be accounted for, by differences in selected factors. To investigate this, we used data from the 2005 American Community Survey, restricted our attention to adults in that sample who were 25 years of age or older, and considered how many of them did and did not graduate from college, an important indicator of educational attainment. We first considered the numbers and percentages of individuals in the broad racial and ethnic categories who had and had not completed college, and then did the same for the individual Asian American and Pacific Islander subgroups. After first obtaining estimates of the bi-variate differences between groups of the likelihood of being a college graduate, we then used multivariate logistic regression models to re-estimate those differences after controlling for gender, age (under 45 versus 45 or over), nativity (native-born versus foreign born), and date of arrival in the United States (before 1980 and in or after 1980). Because date of arrival is pertinent only for foreign-born individuals, nativity and

date of arrival were represented by a single three-category composite variable that contrasted individuals who were 1) native born, 2) foreign born and arrived before 1980, and 3) foreign born and arrived in or after 1980. We chose these variables because, unlike others—linguistic isolation, income, ability to speak English, and so forth—they clearly were causally prior to educational attainment. In addition, the data did not provide information on such things as parents' income or educational level that might have been predictive of the respondent's educational attainment.

Table 10 shows the weighted numbers and percentages of adults who were and were not college graduates, first across broad racial and ethnic categories and then across the Asian American and Pacific Islander subgroups. The top panel of the table shows that, among those identified as a specific race or ethnicity, Asian American and Pacific Islanders had the highest percentage of college graduates (48 percent), followed by whites (30 percent), African Americans (17 percent), American Indian/Alaskan Natives (14 percent), and Hispanics (12 percent). The other non-Hispanics—mostly persons who indicated that they belonged to multiple racial categories—had 26 percent college graduates. The bottom panel shows the marked differences in percentages of college graduates across the Asian American and Pacific Islander subgroups. More than two thirds (68 percent) of Asian Indian adults were college graduates, and the same was true of 54 percent of South Asians in the same region—Sri Lankan, Pakistani, and Bangladeshi—and just over half of all adults among the Koreans (54 percent) and Chinese (53 percent). Slightly less than half of all Filipino adults (48 percent) were college graduates, as were 44 percent of Southeast Asians—Indonesians, Malaysians and Thai—and 44 percent of Japanese adults. The groups that were behind in terms of college graduation rates included Vietnamese adults (25 percent), other Indochinese (17 percent), and Native Hawaiian and Pacific Islanders (13 percent). The other Asians category—which included other specified Asian, unspecified Asian and combinations of Asian groups—had a 47 percent graduation rate.

**Table 10: Estimated Numbers and Percentages of College Graduates and Non Graduates, by (1) Broad Racial/Ethnic Categories and (2) Specific Asian American Subgroups, and Odds and Odds Ratios Derived from Them**

Racial/ethnic group	College graduate		Total	Odds	Odds ratios
	Non-Graduate	Graduate			
White non-Hispanic	93,900,456	40,199,138	134,099,594	0.43	REF
	70.0%	30.0%	100.0%		
Hispanic	19,887,007	2,784,588	22,671,595	0.14	0.33
	87.7	12.3	100.0		
Black non-Hispanic	16,715,992	503,929	20,219,921	0.21	0.49
	82.7	17.3	100.0		
American Indian and Alaska Native non-Hispanic	1,060,964	176,376	1,237,340	0.17	0.39
	85.7	14.3	100.0		
Asian non-Hispanic	4,445,008	4,181,071	8,626,079	0.94	2.20
	51.5	48.5	100.0		
Other non-Hispanic	1,543,436	532,601	2,076,037	0.35	0.81
	74.3	25.7	100.0		
Total	137,552,863	51,377,703	188,930,566	0.37	
	72.8	27.2	100.0		

Asian American and Pacific Islander subgroups	College graduate		Total	Odds	Odds ratios
	Non graduate	Graduate			
Chinese	952,420	1,056,270	2,008,690	1.11	REF
	47.4	52.6	100.0		
Korean	399,283	464,533	86,816	1.16	1.05
	46.2	53.8	100.0		
Japanese	380,346	301,075	681,421	0.79	0.71
	55.8	44.2	100.0		
Vietnamese	685,592	230,885	916,477	0.34	0.30
	74.8	25.2	100.0		
Other Indochinese	266,411	38,674	305,085	0.15	0.13
	87.3	12.7	100.0		
Filipino	814,657	739,667	1,554,324	0.91	0.82
	52.4	47.6	100.0		
Other Southeast Asians	92,802	72,287	165,089	0.78	0.70
	56.2	43.8	100.0		

Asian American and Pacific Islander subgroups	College graduate		Total	Odds	Odds ratios
	Non-Graduate	Graduate			
Asian Indian	495,114	1,058,139	1,553,253	2.14	1.93
	31.9	68.1	100.0		
Other South Asians	76,663	90,051	166,714	1.17	1.06
	46.0	54.0	100.0		
Native Hawaiians and Pacific Islanders	174,757	34,855	209,612	0.20	0.18
	83.4	16.6	100.0		
Other Asians	106,963	94,635	201,598	0.88	0.80
	53.1	46.9	100.0		
<b>Total</b>	<b>4,445,008</b>	<b>4,181,071</b>	<b>8,626,079</b>		
	51.5	48.5	100.0	0.94	

Source: GAO analysis of 2005 ACS data for individuals 25 years of age or older.

An alternative way to estimate the difference between groups is to calculate odds and odds ratios, which are the parameters that underlie the logistic regression models that we used to estimate those differences before and after adjusting for other factors. The odds on being a college graduate for each group, which are shown in the next to last column of table 10, are simply the number of graduates divided by the number of non-graduates or, alternatively, the percentage of graduates divided by 100 minus the percentage of non-graduates. For whites, the odds on being a college graduate are  $40,199,138/93,900,456 = 0.43$ , which can be interpreted as meaning that among whites 0.43 graduate for every 1 who does not (or that 43 graduate for every 100 who do not). For Hispanics, by contrast, the odds of being a college graduate are considerably lower, and equal to  $2,784,588/19,887,007$ , or 0.14. The odds on being a college graduate for the other broad groups, and for the Asian American and Pacific Islander subgroups, can be similarly calculated, and then differences between groups can be calculated by choosing one group as the referent category and calculating how different other groups are by taking the ratios of these odds, or odds ratios (OR). These are shown in the last column of table 10. When we choose whites as the referent category to estimate the differences across the broad racial categories, we find that prior to controlling for other factors Asian American and Pacific Islanders have higher odds than whites of being a college graduate (by a factor of  $0.94/0.43 = 2.20$ ), all other groups have lower odds than whites, by factors ranging from 0.33 (for Hispanics) to 0.81 (for the other non-Hispanic category). Similarly, when we choose the Chinese—the largest group of Asian Americans for whom the odds of being a college graduate are 1.11—

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as the referent category for comparing AAPI subgroups, we find that Asian Indians have markedly higher odds than the Chinese (by a factor of 1.93), and that Koreans (OR = 1.05) and other South Asians from the India region (1.06) have slightly higher odds. All other groups had lower odds of being a graduate than the Chinese and, as the percentages showed previously, the lowest odds ratios were for the Vietnamese (OR = 0.30), other Indochinese from that region (OR = 0.13) and Native Hawaiians and Pacific Islanders (OR = 0.18).

In tables 11 and 12 below, we show how much or little these differences change as a result of controlling for other factors. The first column of numbers in table 11 shows the unadjusted odds ratios reflecting the gross differences in the odds on graduating across the broad racial and ethnic categories and across categories of sex, age, and the nativity-date of arrival composite variable from bi-variate logistic regression models, and the latter columns show the adjusted odds ratios from models which adjust for each of the non-racial and ethnic factors one at a time and then all together. The odds ratios from the bi-variate logistic regression models for race and ethnicity are the same as those calculated directly from the weighted numbers in the top panel of table 10, and all but one of them are significant at the .01 level. As mentioned previously, the bi-variate odds ratios in the first column of table 11 indicate that in general, when other factors are ignored, Asian American and Pacific Islanders are the only minority group that have higher odds (by a factor of 2.20) of being a college graduate than whites. African Americans, Hispanics, and American Indian/Alaskan Natives all have lower odds of being a college graduate than whites, by factors ranging from 0.49 to 0.33. Models 1 thru 3, shown in table 11, re-estimate the differences between groups after controlling for sex, age, and nativity-date of arrival variable one at a time, respectively. Very little change in the estimated difference in the likelihood of being a college graduate between groups is produced by controlling for these factors individually, though controlling for the nativity-date of arrival variable does reduce the odds ratio indicating the difference between Asian American and Pacific Islanders and whites from 2.20 to 1.96. When all of the factors are controlled simultaneously, as in Model 4, the odds on being a college graduate for Asian American and Pacific Islanders remains 1.92 times greater than for whites, and the differences between other minorities and whites are virtually unaltered.

**Table 11: Odds Ratios from Bi-variate and Multivariate Models Estimating the Effects of Race and Ethnicity, Gender, Age and Nativity-Date of Arrival on the Odds on Having a College Degree**

	Bi-variate Odds Ratios	Odds ratios from multivariate models			
		Model (1)	Model (2)	Model (3)	Model (4)
White Non-Hispanic	REF	REF	REF	REF	REF
Hispanic (All Races)	0.33 <sup>a</sup>	0.33 <sup>a</sup>	0.30 <sup>a</sup>	0.30 <sup>a</sup>	0.28 <sup>a</sup>
Black Non-Hispanic	0.49 <sup>a</sup>	0.49 <sup>a</sup>	0.47 <sup>a</sup>	0.48 <sup>a</sup>	0.47 <sup>a</sup>
American Indian Alaskan Native Non-Hispanic	0.39 <sup>a</sup>	0.39 <sup>a</sup>	0.38 <sup>a</sup>	0.39 <sup>a</sup>	0.38 <sup>a</sup>
Asian Non-Hispanic	2.20 <sup>a</sup>	2.20 <sup>a</sup>	2.11 <sup>a</sup>	1.96 <sup>a</sup>	1.92 <sup>a</sup>
Other Non Hispanic	0.81 <sup>a</sup>	0.81 <sup>a</sup>	0.77 <sup>a</sup>	0.79 <sup>a</sup>	0.76 <sup>a</sup>
Male	REF	REF			REF
Female	0.89 <sup>a</sup>	0.88 <sup>a</sup>			0.89 <sup>a</sup>
Under 45	REF		REF		REF
Over 45	0.80 <sup>a</sup>		0.73 <sup>a</sup>		0.73 <sup>a</sup>
Native Born	REF			REF	REF
Foreign born - before 1980	0.91 <sup>a</sup>			1.01	1.11 <sup>a</sup>
Foreign born - after 1980	1.00 <sup>a</sup>			1.20 <sup>a</sup>	1.14 <sup>a</sup>

Source: GAO analysis of 2005 ACS data.

<sup>a</sup>Indicates differences with the referent category that are statistically significant at the 0.01 level.

Notes: "REF" identifies the group chosen as the referent category.

In the first column of numbers, table 12 shows the odds ratios indicating the unadjusted differences in the odds on being a college graduate across Asian American and Pacific Islander subgroups and across gender, age and nativity-date of arrival, from bi-variate logistic regression models, and the latter columns show the adjusted odds ratios from models which adjust for each of the factors one at a time and then all together. Odds ratios from the bi-variate logistic regression models that estimate differences between racial and ethnic groups are the same as those calculated directly from the weighted numbers in the top panel of table 10. All of them are significant at the .01 level, with the exception of the odds ratios indicating the differences between the Koreans, (OR=1.05), other South Asians (OR=1.06) and the Chinese, and the odds ratio indicating the difference between foreign born Asian American and Pacific Islanders who arrived before 1980 (OR = 0.98) and native born Asian American and Pacific Islanders. Here too very little change in the estimated difference in the likelihood of being a college graduate between groups is produced by controlling for these factors simultaneously. That is, all of the odds ratios comparing subgroups of Asian American and Pacific Islanders after the individual controls (in Models 1 through 3) and the full set of controls (in

Model 4) are similar to the unadjusted odds ratios, even though here the effects of gender (OR = 0.74), age (OR = 0.46), and being a foreign born Asian American and Pacific Islander who arrived after 1980 (OR = 0.83) are significant and fairly pronounced. Even after controls, Asian Indians (OR = 1.78) have much higher odds than the Chinese of being a college graduate, while the Vietnamese (OR = 0.28), other Indochinese (OR = 0.11) and Native Hawaiians and Pacific Islanders (OR = 0.15) have much lower odds of being a college graduate than the Chinese.

**Table 12: Odds Ratios from Bi-variate and Multivariate Models Estimating the Effects of Ethnicity, Sex, Age, and Nativity/Arrival Status on the Odds on Having a College Degree for Asian American and Pacific Islander Subgroups**

	Bi-variate Odds Ratios	Odds ratios from multivariate models			
		Model (1)	Model (2)	Model (3)	Model (4)
Chinese	REF	REF	REF	REF	REF
Korean	1.05	1.06	1.03	1.07	1.04
Japanese	0.71 <sup>a</sup>	0.73 <sup>a</sup>	0.76 <sup>a</sup>	0.65 <sup>a</sup>	0.73 <sup>a</sup>
Vietnamese	0.30 <sup>a</sup>	0.30 <sup>a</sup>	0.28 <sup>a</sup>	0.31 <sup>a</sup>	0.28 <sup>a</sup>
Other Indochinese	0.13 <sup>a</sup>	0.13 <sup>a</sup>	0.11 <sup>a</sup>	0.13 <sup>a</sup>	0.11 <sup>a</sup>
Filipino	0.82 <sup>a</sup>	0.83 <sup>a</sup>	0.83 <sup>a</sup>	0.82 <sup>a</sup>	0.82 <sup>a</sup>
Other Southeast Asians	0.70 <sup>a</sup>	0.72 <sup>a</sup>	0.64 <sup>a</sup>	0.71 <sup>a</sup>	0.65 <sup>a</sup>
Indian	1.93 <sup>a</sup>	1.90 <sup>a</sup>	1.77 <sup>a</sup>	1.96 <sup>a</sup>	1.78 <sup>a</sup>
Other south Asians	1.06	1.03	0.98	1.08	0.99
Native Hawaiians and Pacific Islanders	0.18 <sup>a</sup>	0.18 <sup>a</sup>	0.17 <sup>a</sup>	0.16 <sup>a</sup>	0.15 <sup>a</sup>
Other	0.80 <sup>a</sup>	0.79 <sup>a</sup>	0.73 <sup>a</sup>	0.78 <sup>a</sup>	0.72 <sup>a</sup>
Male	REF	REF			REF
Female	0.73 <sup>a</sup>	0.74 <sup>a</sup>			0.74 <sup>a</sup>
Under 45	REF		REF		REF
Over 45	0.49 <sup>a</sup>		0.48 <sup>a</sup>		0.46 <sup>a</sup>
Native Born	REF			REF	REF
Foreign born - before 1980	0.98			0.78 <sup>a</sup>	1.06
Foreign born - after 1980	1.06			0.81 <sup>a</sup>	0.83 <sup>a</sup>

Source: GAO analysis of 2005 ACS data.

<sup>a</sup>Indicates differences with the referent category that are statistically significant at the 0.01 level.

Notes: "REF" identifies the group chosen as the referent category.

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## Procedures for Identifying What Challenges, If Any, Asian American and Pacific Islander Students Face in Pursuing and Completing Their Postsecondary Education

To determine what challenges Asian American and Pacific Islander students face when pursuing postsecondary education, we first conducted an extensive literature search on Asian American and Pacific Islander students' experiences in postsecondary education. We synthesized our findings to identify the challenges and develop a framework for our analyses. We also interviewed representatives from a variety of Asian American and Pacific Islander organizations, including umbrella organizations and groups devoted to a single Asian American and Pacific Islander subgroup, to gain their views on Asian American and Pacific Islander student challenges.

### Data Collection

Existing data: We reviewed publicly available Education databases seeking quantitative data on Asian American and Pacific Islander students' challenges. While many of the databases contained aggregate data on Asians and Native Hawaiians and Pacific Islanders, we found only two data sources—the Education Longitudinal Study (ELS) of 2002 and the National Postsecondary Student Aid Study (NPSAS) of 2000—that contained categories for individual Asian American and Pacific Islander subgroups.

- ELS 2002 follows a nationally representative cohort of students from the time they were high school sophomores through the rest of their high school careers. In 2004, the sample was augmented to make it representative of seniors as well. We selected ELS because it contains a variable “NBASIAN” that provides breakout data on the following Asian American and Pacific Islander subgroups: Chinese, Filipino, Japanese, Korean, South Asian, and Southeast Asian. We used data from the 2004 First Year Follow-up Survey of high school seniors because we assumed that responses made closer to the time period when they attended postsecondary education were more likely to influence their decisions to attend postsecondary education than responses made 2 years earlier. We decided to use variables from the 2002 base year survey if they were not available in the 2004 follow-up.
- NPSAS 2000 is a comprehensive nationwide study designed to determine how students and their families pay for postsecondary education, and to describe some demographic and other characteristics of those enrolled. The study uses data from nationally representative sample surveys of students in postsecondary education institutions, including undergraduate, graduate, and first-professional students. Students attending all types and levels of institutions are represented, including public and private not-for-profit and for-profit institutions, and less-than-2-year institutions, community colleges, and 4-year colleges and universities. Although not the most recent iteration

of the database, we decided to use the NPSAS 1999 to 2000 Undergraduate Survey because unlike the NPSAS 2004 Undergraduate Survey it included a “type of Asian origin” variable that provides breakout data on the following Asian American and Pacific Islander subgroups: Chinese, Filipino, Japanese, Korean, Other Asian American and Pacific Islander, Asian Indian, and Vietnamese.

We reviewed the data dictionaries for each database to select variables that represented the Asian American and Pacific Islander student challenges identified in our literature search. We determined that the data were sufficiently reliable for the purposes of this report.

On-site visit data: To obtain more in-depth information on the challenges that Asian American and Pacific Islander students face, we visited eight colleges and universities in three states—California, Minnesota, and Hawaii—and conducted discussion groups with Asian American and Pacific Islander students. We selected institutions in urban areas with high concentrations of Asian American and Pacific Islander students and diverse Asian American and Pacific Islander subgroups. To locate urban areas with high concentrations of Asian American and Pacific Islander subgroups, we analyzed data from the 2000 U.S. Census. Next, we analyzed data contained in Education’s Integrated Postsecondary Education Data System (IPEDS) 2004 database to identify accredited 2-year and 4-year institutions that reported Asian American and Pacific Islander undergraduate student enrollment of at least 10 percent. From this list, we selected a nonprobability sample of seven public institutions located in the Honolulu, San Francisco, and St. Paul metropolitan areas to visit. Wanting also to obtain the views of Asian American and Pacific Islander students in a private institution, we selected an additional private 4-year institution in Minnesota.

In the course of our on-site visits in January and February 2007, we conducted 14 discussion groups with 84 Asian American and Pacific Islander students. The number of participants in the discussion group ranged from 2 to 11. We relied on administrative officials at the postsecondary institutions to recruit and select participants for our discussion groups.

**Table 13: Composition of the Asian American and Pacific Islander Student Discussion Groups**

State	Postsecondary institution	Asian American and Pacific Islander subgroup	Number of participants
Hawaii <sup>a</sup>	University of Hawaii at Manoa	Samoan	11
		Filipino	11
		Hawaiian	2
	Kapi'olani Community College	Japanese	2
		Pacific Islander	6
Minnesota	Concordia University of St. Paul	Hmong	7
	Century College	Hmong	7
California	DeAnza College	Vietnamese	7
		Cambodian	3
	San Francisco State University	Japanese, Filipino, Asian Indian	3
		Vietnamese, Filipino, Chinese and Taiwanese	8
		Filipino	3
	City College of San Francisco	Vietnamese	7
Chinese		8	

Source: GAO analysis.

<sup>a</sup>We also visited Leeward Community College in Hawaii but did not conduct student discussion groups.

To guide the discussions, we developed a standard set of open-ended questions about the following topics

- decision to attend college,
- college affordability,
- academic preparation,
- institutional climate,
- work, and
- family expectations.

All 14 discussion groups were lead by the same team member to ensure consistency. Small group discussions are designed to gain in-depth information about specific issues that cannot easily be obtained from single or serial interviews. Methodologically, discussion groups are not designed to provide results generalizable to a larger population or provide statistically representative samples or reliable quantitative estimates. Discussion group findings represent the responses only of the students who participated in our 14 groups. In addition, while the composition of the groups was designed to include students from different Asian

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American and Pacific Islander subgroups, the discussion groups were not random samples of Asian American and Pacific Islander students.

## Data Analysis

We conducted descriptive statistical analyses of the ELS and NPSAS data using means and proportions and tested the statistical significance of any differences in proportions that we identified.

During our exit conference with the Department of Education, an Education official expressed concern that the weights in the ELS and NPSAS samples may have affected our estimates. He was concerned that the weights themselves might produce differences in the estimates. He said that an unusual respondent with a large weight could control an estimate that appears to be different from the others. He said that it is possible that the sampling errors for the estimates might not reflect this problem. The official suggested that we calculate the estimates with and without the weights. He believed that the differences we saw in the data might disappear when the unweighted results are compared. He recommended that we use either the balanced repeated replication (BRR) or “jackknife” procedures to calculate the variances for the variables of interest. To respond to these concerns, we calculated the estimates with and without weights, as suggested. The results showed only a few percentage points difference between the weighted and unweighted data on our variables of interest and thus it was not necessary to change the methodology for calculating the confidence intervals. The variance estimation procedure we used—Taylor Series—is a conservative method for calculating the confidence intervals. It was also one of two recommended in the NPSAS 2000 documentation. The ELS 2002 documentation also recommended using a statistical package that could handle complex sample designs and we used SUDAAN. However, to ensure the quality of our results, GAO’s Chief Statistician reviewed the methodology and tabulations from NPSAS prepared for our draft report.

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**Procedures for  
Determining What Federal  
and Institutional  
Resources That  
Institutions with Large  
AAPI Student Enrollment  
Use to Address the  
Particular Needs of These  
Students**

To determine what federal and institutional resources institutions with large Asian American and Pacific Islander student enrollment use to address the particular needs of these students, we visited the same states and postsecondary institutions identified to select student discussion groups, listed in table 13. At each of the eight postsecondary institutions, we interviewed officials responsible for the financial aid, academic support services, and student life support services available to Asian American and Pacific Islander students and collected related documentation. To guide the interviews, we asked a standard set of questions about

- types of assistance provided to Asian American and Pacific Islander students with federal and institutional resources,
- postsecondary institutions' efforts to inform students about the availability of financial aid,
- types of academic support services available to Asian American and Pacific Islander students and students' use of the services, and
- initiatives the institutions had undertaken to foster Asian American and Pacific Islander students' involvement in campus life.

To collect information about the eligibility criteria and objectives of the federal programs used to fund the academic and student support services the postsecondary institutions provided, we also interviewed Education officials about Title III, TRIO, Native Hawaiian Education, and Native Hawaiian Career and Technical Educational Program grants and reviewed program documentation. Lastly, we analyzed NPSAS 2000 data to determine the extent to which Asian American and Pacific Islander students applied for and received federal student aid, including loans, grants, and work-study.

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# Appendix II: Description of Federal Student Aid

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<b>Federal student aid program</b>	<b>Description</b>
Subsidized Stafford loans	Loans made to students enrolled at least half-time in an eligible program of study who have federally defined financial need. The federal government pays the interest costs on the loan while the student is in school.
Pell Grants	Grants to undergraduate students who are enrolled in a degree or certificate program and have federally defined financial need.
Perkins Loans	Low-interest loans to undergraduate and graduate students. Interest does not accrue while the student is enrolled at least half time in an eligible program. Priority is given to students who have exceptional federally defined financial need.
Supplemental Educational Opportunity Grants (SEOG)	Grants for undergraduate students with federally defined financial need. Priority given for this aid is given to Pell Grant recipients.
Work-study	On-or-off-campus jobs in which students who have federally defined need earn at least the current federal minimum wage. The institution or off-campus employer pays a portion of their wages.
Unsubsidized Stafford loans	Non-need-based loans made to students enrolled at least half-time in an eligible program of study. Although the terms and conditions of the loan (i.e., interest rates, etc.) are the same as those for subsidized loans, students are responsible for paying all interest costs on the loan.
Parent Loan for Undergraduate Students (PLUS) loan	Non-need-based loans made to credit worthy parents of dependent undergraduate students enrolled at least half-time in an eligible program of study. Borrowers are responsible for paying all interest on the loan.

Source: [GAO-03-508](#).

# Appendix III: Comments from the Department of Education



UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF POSTSECONDARY EDUCATION

THE ASSISTANT SECRETARY

JUL 18 2007

Mr. George A. Scott  
Director, Education, Workforce,  
and Income Security Issues  
United States Government Accountability Office  
Washington, DC 20548

Dear Mr. Scott:

Thank you for providing the Department of Education (Department) with a draft copy of the U.S. Government Accountability Office's (GAO's) report entitled, "*Higher Education: Information Sharing Could Help Institutions Identify and Address Challenges That Some Asian Americans and Pacific Islander Students Face*" (GAO-07-925). The report examines the difference in educational achievement and income levels between Asian American and Pacific Islander (AAPI) ethnic groups. It also examines the challenges these groups face pursuing and completing postsecondary education, and how institutions with large AAPI student enrollments use their institutional and federal resources to address the needs of AAPI students.

**Recommendation:** *To assist postsecondary institutions that serve Asian American and Pacific Islander students, particularly students from low-income families, we recommend that the Secretary of Education facilitate sharing of information among institutions about strategies that foster low-income postsecondary student recruitment, retention, and graduation and outreach to Asian American and Pacific Islanders while in high school.*

**Response:** In its report, GAO specifically suggests that the Department use the Web as a tool for sharing information among institutions. The Office of Postsecondary Education is already sharing information about minority-serving institutions' successful practices and making this information available to the public and all grantees on program "Success Stories" Web pages. Examples of the successful practices minority-serving institutions have identified may be found at <http://www.ed.gov/programs/dueshsi/practices.html>. Additionally, all of the institutions funded under the Title III and Title V minority-serving institutional programs currently make a project abstract for each grantee available on their Web pages. Some of these abstracts for current grantees include activities related to retention. We will examine options for encouraging more grantees to report successful practices related to recruitment, retention, and graduation and to use these Web pages as resources. We will examine these options and make a decision no later than July 31, 2008.

GAO's recommendation specifically states that increased efforts should be made in the area of outreach to AAPI students while in high school. Please note that although the

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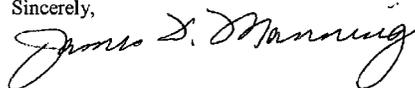
*Our mission is to ensure equal access to education and to promote educational excellence throughout the Nation.*

Page 2—Mr. George A. Scott

minority-serving institutions programs do not specifically target high school students, programs such as TRIO Upward Bound and Talent Search do serve populations of at-risk AAPI students.

I appreciate your examination of this important issue, and note that GAO's report highlighted ample evidence to support that institutions use a variety of grants, including federal aid, and their own resources to address the needs of AAPI students. The Department is committed to serving AAPI students in an effort to increase their educational achievements.

Sincerely,



James F. Manning  
Acting Assistant Secretary  
Office of Postsecondary Education

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# Appendix IV: GAO Contacts and Staff Acknowledgments

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## GAO Contact

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## Acknowledgments

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Sara Edmondson, Analyst-in-charge

Jonathan McMurray, Susan Pachikara, Luann Moy, Carol Bray, Douglas Sloane, Nancy Hess, John Mingus, James Rebbe, and Susannah Compton, also made significant contributions to this report.

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