Nonimmigrants Residing in the United States: Fiscal Year 2016

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This report presents estimates of the size and characteristics of the population of nonimmigrants residing in the United States in fiscal year 2016.^{1,2} Nonimmigrants are foreign nationals admitted into the United States for specific, temporary purposes. Examples of such temporary purposes include tourism, work, study, participation in an exchange program, representing a foreign government or international organization, and accompanying a principal nonimmigrant as an immediate family member or, in some cases, as a member of the principal nonimmigrant's staff. This report focuses exclusively on nonimmigrants admitted for purposes associated with residence, such as work and study, and excludes nonimmigrants admitted for non-residential purposes, such as tourism.³

The estimates presented here are derived from U.S. Department of Homeland Security (DHS) administrative records of nonimmigrant arrivals and departures. Data are not available to measure the resident nonimmigrant population directly, so this report uses a statistical model of nonimmigrant visit lengths and applies the model to the population of nonimmigrants entering since 2007 to estimate the current population. Details about the data and a description of the estimation method are available in the Appendices.

RESULTS

SUMMARY

About 2.3 million nonimmigrant workers, students, exchange visitors, and diplomats and other representatives resided in the United States in 2016 (see Table 1), up from about 2.0 million in 2015.4 Although the total number of nonimmigrant residents increased by only about 15 percent, the number increased by nearly 30 percent among Asians. More than 60 percent of temporary residents in 2016 were citizens of Asian countries (mostly India and China), and about 15 percent each were from Europe and North America (mostly Mexico

and Canada). 5 Nearly 50 percent were temporary workers, nearly 40 percent were students, 11 percent were exchange visitors, and the remaining four percent were diplomats and other representatives. 6 More than 55 percent were male, about 30 percent were ages 18 to 24, and about 50 percent were ages 25-44.

Region and Country of Citizenship

About 60 percent of the resident nonimmigrants were citizens of Asian countries (see Figure 1), led by India (25 percent) and China (15 percent). Other than being the top two sending countries, the patterns were different for India and China (see Figure 2). Seventy-five percent of Indian nationals were admitted as temporary workers, making up about 40 percent of the temporary worker total, whereas about 75 percent of Chinese nationals were admitted as students, comprising 30 percent of the student total. China also accounted for 15 percent of the exchange visitor total, compared to India's four percent.

The next leading countries were Mexico, Canada, South Korea, Japan, and Saudi Arabia. Mexico trended similarly to India, with 85 percent admitted as temporary workers and only about 10 percent as students. Canada and Japan also favored temporary workers, but to a lesser extent, with about 65 to 70 percent workers and about 20 to 25 percent students, respectively. South Korea and Saudi Arabia were more like China, favoring students. More



¹ Hereafter, "year" will refer to the fiscal year unless otherwise specified. Fiscal year 2016 ran from October 1, 2015, to September 30, 2016.

² This report responds to a Government Accountability Office recommendation regarding temporary residents (GGD-98-164, p. 37, Table 4.1, Row C).

³ A list of specific nonimmigrant classes of admission associated with residence and grouped by general visit purposes is provided in the Appendix.

⁴ See previous editions of this report at https://www.dhs.gov/ immigration-statistics.

⁵ Here and throughout, percentages presented in the text follow standard rounding practices for readability: please refer to tables for more precise estimates.

⁶ Each category should be read to include accompanying family members and staff.

Table 1.

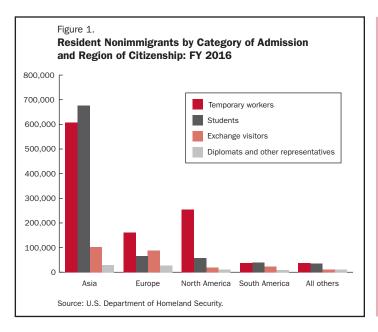
Resident Nonimmigrant Population Estimates: FY 2016 by Category of Admission and Region and Top 10 Countries of Citizenship

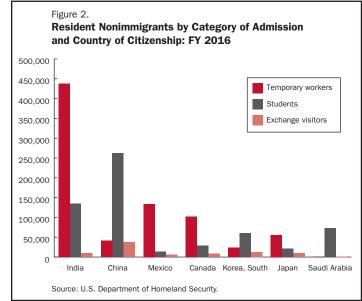
Region and country	Total		Temporary workers		Students		Exchange visitors		Diplomats and other representatives	
of citizenship	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
REGION										
Total	2,300,000	100%	1,100,000	100%	870,000	100%	240,000	100%	90,000	100%
Asia	1,410,000	61%	610,000	55%	680,000	77%	100,000	42%	30,000	33%
Europe	340,000	15%	160,000	15%	70,000	8%	90,000	36%	30,000	31%
North America	340,000	15%	250,000	23%	60,000	7%	20,000	8%	10,000	12%
South America	110,000	5%	40,000	3%	40,000	4%	20,000	10%	10,000	10%
Other or Unknown.	90,000	4%	40,000	3%	30,000	4%	10,000	4%	10,000	14%
COUNTRY										
Total	2,300,000	100%	1,100,000	100%	870,000	100%	240,000	100%	90,000	100%
India	580,000	25%	440,000	40%	140,000	15%	10,000	4%	-	_
China	340,000	15%	40,000	4%	260,000	30%	40,000	15%	-	_
Mexico	160,000	7%	130,000	12%	10,000	2%	10,000	2%	-	-
Canada	140,000	6%	100,000	9%	30,000	3%	10,000	3%	-	_
Korea, South	100,000	4%	20,000	2%	60,000	7%	10,000	5%	-	_
Japan	90,000	4%	60,000	5%	20,000	2%	10,000	4%	-	_
Saudi Arabia	80,000	3%	_	_	70,000	8%	_	_	-	_
United Kingdom	60,000	3%	40,000	4%	10,000	1%	10,000	3%	-	-
Germany	50,000	2%	20,000	2%	10,000	1%	20,000	7%	_	-
France	50,000	2%	20,000	2%	10,000	1%	10,000	4%	-	-
All others	650,000	28%	220,000	20%	250,000	29%	130,000	51%	50,000	62%

Base number or percent rounds to zero.

Note: Detail may not sum to total due to rounding; percentages are column percentages; percentages and totals were calculated prior to rounding.

Source: U.S. Department of Homeland Security.





than 60 percent of South Korean nationals were students and almost 25 percent were temporary workers. Saudi Arabia was an extreme with more than 90 percent students and making up eight percent of the student total despite comprising only three percent of the overall total.

State of Destination

California was the leading destination state overall (410,000 persons, nearly 20 percent of the total) and the leading state for temporary workers, students, and exchange visitors (15 to 20 percent of the total numbers) (see Table 2). The next leading states for temporary workers were Texas and New York, each of which accounted for about 10 percent of the total. The next leading states for students were New York and Massachusetts, with 13 percent and seven percent of the total, respectively. New York and Massachusetts were also the next leading states for exchange visitors. Nearly 25 percent of diplomats and other representatives of

foreign governments and international organizations went to New York and nearly 20 percent went to Washington, D.C.⁸

Most of the top ten destination states had higher concentrations of workers than students (see Figure 3). The concentrations were especially rich in Texas and New Jersey, with 60 to 70 percent workers compared to about 45 percent nationally. The largest percentage increase in temporary workers among the top 10 states was Florida, which increased nearly 25 percent from 60,000 in 2015 to 75,000 in 2016. Massachusetts and Pennsylvania were exceptions to this trend, with students comprising 50 to 55 percent of resident nonimmigrants in those two states, as compared to slightly less than 40 percent of the resident nonimmigrant population overall.

Table 2.

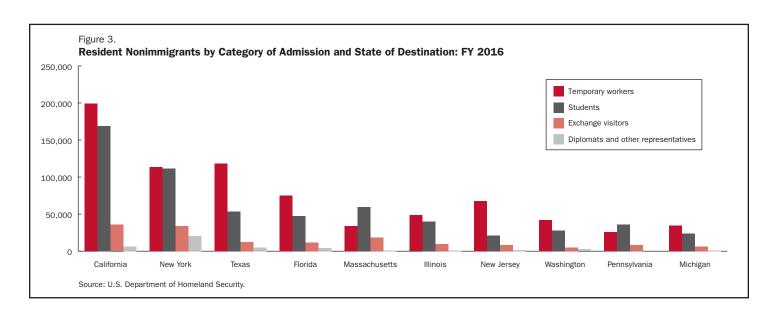
Resident Nonimmigrant Population Estimates: FY 2016 by Category of Admission and State of Destination

	Total		Temporary workers		Students		Exchange visitors		Diplomats and other representatives	
State of destination	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	2,300,000	100%	1,100,000	100%	870,000	100%	240,000	100%	90,000	100%
California	410,000	18%	200,000	18%	170,000	19%	40,000	15%	10,000	7%
New York	280,000	12%	110,000	10%	110,000	13%	30,000	14%	20,000	23%
Texas	190,000	8%	120,000	11%	50,000	6%	10,000	5%	_	_
Florida	140,000	6%	80,000	7%	50,000	5%	10,000	5%	_	_
Massachusetts	110,000	5%	30,000	3%	60,000	7%	20,000	8%	_	_
Illinois	100,000	4%	50,000	4%	40,000	5%	10,000	4%	_	_
New Jersey	100,000	4%	70,000	6%	20,000	2%	10,000	3%	_	_
Washington	80,000	3%	40,000	4%	30,000	3%	10,000	2%	_	_
Pennsylvania	70,000	3%	30,000	2%	40,000	4%	10,000	3%	_	_
Michigan	70,000	3%	30,000	3%	20,000	3%	10,000	3%	_	_
All others	760,000	33%	340,000	31%	280,000	32%	90,000	39%	40,000	51%

Base number or percent rounds to zero.

Note: Detail may not sum to total due to rounding; percentages are column percentages; percentages and totals were calculated prior to rounding.

Source: U.S. Department of Homeland Security.



3

 $^{^{\}scriptscriptstyle 7}$ Many exchange visitors study in the United States as part of their exchange programs.

⁸ Another 20 percent of diplomats listed Virginia and Maryland as their destination states; altogether, nearly 40 percent of diplomats and other representatives may have gone to Washington, D.C., or the immediate surrounding area.

⁹ The temporary worker population increased by nearly 25 percent along the entire southern half of the East Coast, from Florida through North Carolina.

Age and Sex

About 80 percent of all resident nonimmigrants were ages 18 to 44 and more than 55 percent were male (see Table 3). Temporary workers tended to be slightly older than average, with nearly 70 percent ages 25 to 44 (see Figure 4). Students were younger, with 60 percent ages 18 to 24 and 85 percent ages 18 to 34. Exchange visitors, many of whom are also students, resembled the student population with slightly more than 75 percent ages 18 to 34. Diplomats tended to be older, with 25 percent ages 45 to 54 and nearly 15 percent ages 55 or older. The proportions were generally similar for males and females for each category of admission, though female diplomats and other representatives trended younger than the males. Slightly more than 60 percent of temporary workers and diplomats were male, about 55 percent of students were male, and slightly more than 50 percent of exchange visitors were female.

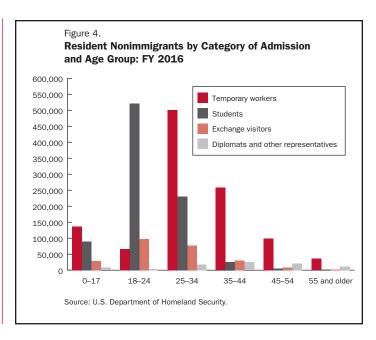


Table 3.

Resident Nonimmigrant Population Estimates by Category of Admission, Age, and Sex: FY 2016

	Total		Temporary workers		Students		Exchange visitors		Diplomats and other representatives	
Characteristic	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Age group										
Total	2,300,000	100%	1,100,000	100%	870,000	100%	240,000	100%	90,000	100%
0–17	260,000	11%	140,000	12%	90,000	10%	30,000	12%	10,000	9%
18–24	690,000	30%	70,000	6%	520,000	60%	100,000	40%	_	_
25–34	830,000	36%	500,000	46%	230,000	26%	80,000	32%	20,000	21%
35–44	340,000	15%	260,000	23%	20,000	3%	30,000	12%	20,000	28%
45–54	130,000	6%	100,000	9%	10,000	1%	10,000	3%	20,000	24%
55 and older	50,000	2%	40,000	3%	_	_	_	_	10,000	13%
Sex and age group										
Total	2,300,000		1,100,000		870,000		240,000		90,000	
Male	1,320,000	100%	670,000	100%	480,000	100%	110,000	100%	60,000	100%
0–17	130,000	10%	70,000	10%	50,000	10%	10,000	12%	_	_
18–24	380,000	28%	40,000	7%	290,000	60%	40,000	34%	_	_
25–34	460,000	35%	280,000	42%	130,000	27%	40,000	34%	10,000	20%
35–44	220,000	17%	170,000	26%	10,000	3%	20,000	15%	20,000	29%
45–54	90,000	7%	70,000	11%	_	_	_	_	10,000	26%
55 and older	40,000	3%	30,000	4%	_	_	_	_	10,000	14%
Female	980,000	100%	430,000	100%	390,000	100%	130,000	100%	30,000	100%
0–17	130,000	13%	70,000	16%	40,000	11%	20,000	12%	_	_
18–24	310,000	32%	20,000	5%	230,000	59%	60,000	44%	_	_
25–34	370,000	37%	220,000	51%	100,000	26%	40,000	30%	10,000	22%
35–44	120,000	12%	80,000	20%	10,000	3%	10,000	11%	10,000	27%
45–54	40,000	4%	30,000	6%	_	_	_	_	10,000	22%
55 and older	10,000	1%	10,000	2%	_	_	_	_		_

Base number or percent rounds to zero.

Note: Detail may not sum to total due to rounding; percentages are column percentages; percentages and totals were calculated prior to rounding. Source: U.S. Department of Homeland Security.

APPENDIX I—NONIMMIGRANT CLASSES ASSOCIATED WITH RESIDENCE

Table A1.

Resident Nonimmigrant Classes of Admission

Class	Description							
	Temporary workers and families Temporary workers and trainees							
H1B	Workers in specialty occupations							
H1B1	Chile and Singapore Free Trade Agreement aliens							
H1C H2A	Registered nurses participating in the Nursing Relief for Disadvantaged Areas Temporary agricultural workers							
H2B	Temporary non-agricultural workers							
H2R	Returning H2B workers							
НЗ	Trainees and participants in a special educational exchange program							
H4	Spouses and children of H1, H2, or H3							
01	Workers with extraordinary ability or achievement							
02	Workers accompanying and assisting in performance of O1 workers							
03	Spouses and children of 01 and 02							
P1	Internationally recognized athletes or entertainers and their essential support personnel							
P2	Artists or entertainers in reciprocal exchange programs and their essential support personnel							
P3	Artists or entertainers in culturally unique programs and their essential support personnel							
P4	Spouses and children of P1, P2, or P3 Participants in international cultural evaluations programs							
Q1	Participants in international cultural exchange programs Workers in religious vegetions or ecounations.							
R2	Workers in religious vocations or occupations Spouses and children of R1							
TN	North American Free Trade Agreement (NAFTA) professional workers							
TD								
Intracompany								
L1								
L2								
Treaty traders								
E1	Treaty traders and their spouses and children							
E2	Treaty investors and their spouses and children							
E3								
Representativ	es of foreign information media							
11	Representatives of foreign information media and spouses and children							
Students								
F1	Academic students							
F2	Spouses and children of F1							
M1								
M2	Spouses and children of M1							
Exchange visitors								
J1	Exchange visitors							
J2	Spouses and children of J1							
Diplomats and o	ther representatives							
A1	Ambassadors, public ministers, career diplomatic or consular officers and their families							
A2	Other foreign government officials or employees and immediate family							
A3	Attendants, servants, or personal employees of A1 and A2 and immediate family							
G1	Principals of recognized foreign governments and immediate family							
G2	Other representatives of recognized foreign governments and immediate family							
G3	Representatives of nonrecognized or nonmember foreign governments and immediate family							
G4	International organization officers or employees and immediate family							
G5	Attendants, servants, or personal employees of representatives and immediate family							
N1 to N7	North Atlantic Treaty Organization (NATO) officials, immediate family, and dependents							

Source: U.S. Department of Homeland Security.

APPENDIX II—DATA AND METHOD

Data are not available to measure the resident nonimmigrant population directly, so this report develops a statistical model of nonimmigrant visit lengths and applies the model to the population of nonimmigrants entering since 2007 to estimate the current population.

Data

Within the U.S. Department of Homeland Security (DHS), nonimmigrant arrival and departure records are collected and maintained by U.S. Customs and Border Protection (CBP). CBP creates an electronic DHS Form I-94, Nonimmigrant Arrival/Departure Record for each admission of a resident nonimmigrant into the United States as part of the inspection process at a port of entry. 10,11 Corresponding departure forms are created whenever CBP records the departure of a nonimmigrant, but departure records are somewhat incomplete because the United States does not screen travelers at the point of departure. Instead, the vast majority of departure records are derived from commercial air and sea carrier departure manifests. Other sources of nonimmigrant departure records include the submission of a paper version of the I-94 form by the nonimmigrant after departure, border crossing records collected by Canada on entries into Canada from the United States by third-country nationals, and CBP pulse and surge operations to collect information from certain travelers departing through southwest border ports of entry.

Although the vast majority of departures by resident nonimmigrants are recorded by the means described above, the absence of a departure record does not provide clear evidence that a nonimmigrant remains in the United States. In particular, an arrival record without a corresponding departure record also may reflect an unrecorded departure or a recorded departure that could not be matched to its corresponding arrival. The cumulative impact of unrecorded departures and unmatched records over a period of years is too large to allow for a direct measurement of the nonimmigrant population based solely on arrival and departure records.

In addition, no nationally representative surveys exist that are immediately useful for estimating or measuring the resident nonimmigrant population. Although several representative surveys distinguish between native- and foreign-born persons, no large, national surveys distinguish between (temporary) nonimmigrants and (permanent) immigrants.

Because these "first choice" possibilities (direct measurement and survey estimation) are ruled out or not readily available, this report uses a three-step statistical model to estimate the resident nonimmigrant population. The first step is to construct visit length frequency tables by matching departures in 2016 back to their associated arrival data, incorporating arrival records from 2007-2016. Frequency tables were constructed for each class of admission and

¹⁰ Certain nonimmigrants, including most Mexican and Canadian visitors for business or pleasure, arriving at land ports of entry are exempted from the I-94 form; but these B-1/B-2 visitors are not included in the resident nonimmigrant population and are outside the scope of this report.

country of citizenship. Second, these frequency tables were used to construct probability models describing the probability that a non-immigrant would stay for at least a given number of days based on the person's nationality and visa class of admission. For example, based on historical patterns, what is the probability that a Mexican national with an H-2A visa will depart the United States on or before the 100th day of his or her visit? Third, the probability model was deployed for each day of the year and for every nonimmigrant who arrived in the United States since 2007, based on the nonimmigrant's nationality, visa class of admission, and date of admission into the United States. These estimates were added up to produce a total estimated number of days nonimmigrants were present during 2016, and the total was divided by 365 to yield the average population size for the year.

Equation 1.

$$\sum_{x \in \chi} \sum_{d \in D(x)} \frac{P(l \ge d - A(x) \mid f(x), g(x))}{365}$$

Where X is the set of all admissions of resident immigrants in 2007–2016, D(x) is the set of all dates in 2016 that occurred on or after A(x), the admission date for x, L is a random variable representing the length of the nonimmigrant visit in days,and f(x) and g(x) are the country of citizenship and class of admission of x.

Analysis was restricted to resident nonimmigrant classes of admission, i.e., classes characterized by visits lasting two months or longer on average. The two-month duration was chosen in order to be consistent with the residence definitions used in the U.S. Census Bureau's American Community Survey and DHS estimates of the size and characteristics of the unauthorized immigrant population (Baker, forthcoming). Because admission under a residence class does not always indicate residence in the United States, data were further restricted by omitting records for persons exhibiting likely commuter behavior (defined here as arriving in the United States seven or more times per year).

LIMITATIONS

The accuracy and precision of the population estimates depend on how well the visit-length probability models derived from fiscal year 2016 departure cohorts represent the visit-length probabilities for all visits, the choice of classification variables, and the veracity of the assumptions. Some important limitations are covered below.

Assumptions underlying the probability models

The use of visit length frequency tables to construct probability models requires the assumptions that no correlation exists between visit length and the failure to record a departure or the inability to match a departure to a prior arrival. The first assumption is likely unproblematic: an airline's failure to submit a departure manifest for a flight, for example, should not be related to the visit length of the people on board the flight. The second assumption is somewhat flawed, however, as relatively long visits are more likely to have an arrival that occurred prior to the advent of electronic I-94 forms, and matching to user-submitted, handwritten forms is not as accurate as matching to electronic forms that were automatically

¹¹ The creation of the I-94 form was largely automated in 2014; in the event of an admission for which an I-94 form was not created electronically, the nonimmigrant applicant would be required to complete and submit a paper version of the form which would later be transcribed into electronic form at a CBP processing center.

¹² Prior analysis found corresponding departure records for approximately 85 percent of all resident nonimmigrant arrival records over a four-year period; the remaining 15 percent had not departed, departed without record, or departed without generating a matchable record.

 $^{^{\}rm 13}$ See Appendix I for a list of resident nonimmigrant classes of admission.

generated based on travel documents (e.g., a machine-readable pass-port). Nonetheless, changes in the match rate over time should have a minimal impact on the model because about 96 percent of departure records used to build the frequency tables were successfully matched back to their prior arrivals.

Adjustment to LPR status

Departure data were not available for persons who were admitted as nonimmigrants, but who subsequently adjusted to lawful permanent resident status. To the extent that people who adjust status tend to have shorter or longer stays than people who do not adjust status, the estimates may be biased downward or upward. The impact, if any, would likely be concentrated among visa classes and countries with higher adjustment rates. For example, the ratios of adjustments to admissions in fiscal year 2010 were 1 to 5 for H4 dependents, 1 to 9 for H-1B workers, and only 1 to 60 for seasonal workers. Results are presented only for broad categories of admission classes, instead of for individual classes of admission, to smooth over or wash out the potential bias arising from status adjustments within any single class of admission.

Increasing arrival volume

The observed visit-length distributions are based on completed visits with an arrival between October 1, 2006, and September 30, 2016, and a departure recorded between October 1, 2015, and September 30, 2016. Because arrival flow tends to increase slightly each year, departures in the most recent year disproportionately reflect more recent arrivals. Therefore the visit-length distributions, and the resulting population estimates, are likely to be slightly biased downwards.

Stability of visit length across time

The estimation methodology implicitly assumes that the visitlength distribution is constant across time. Although the visit-length distributions are not exactly the same each year, they are relatively stable for the classes of admission and countries of citizenship with the largest contributions to the total.

Missing Characteristics

The age, sex, state, or country fields were missing from some records¹⁴ and were assumed to be missing completely at random. When missing, age, sex, and state were imputed based on the age, sex, and state distributions of nonimmigrants with the same class of admission and country of citizenship. Country was imputed based on the country of citizenship of persons with the same class of admission.

APPENDIX III—OTHER SOURCES OF DATA ON STUDENTS AND EXCHANGE VISITORS

The U.S. Department of Homeland Security (DHS) Immigration and Customs Enforcement (ICE) and the Institute of International Education (IIE) also count or estimate the number of foreign students studying in the United States, but with key differences. ICE counts F-1 (academic) and M-1 (vocational) students listed as "active" in the ICE Student and Exchange Visitor Information System on the date of the query. IIE counts F-1 and J-1 (exchange visitor) enrollments at accredited institutions of higher education

¹⁴ State was missing from about six percent of the records. Country, age, or sex was missing from less than 0.5 percent. or in optional practical training after completing a degree program. These counts of active students or enrollments provide information on program participation, but do not measure or estimate the average number of foreign students living in the United States during the course of the year.

The Student and Exchange Visitor Program, managed by ICE, reported that there were about 1.2 million nonimmigrants "studying in the United States" on student visas and about 200,000 exchange visitors "in the United States" in March of 2016 (ICE, 2016). ICE also reported about 157,000 student and exchange visitor dependents, but did not distinguish between the principal classes for those dependents. As the student numbers reported by ICE are about 40 percent higher than the numbers reported here, it is important to note that the numbers reported by ICE are counts of persons with "active status" at a particular point in time, which is different from counting the number of persons residing within the United States and different from an annual average. For example, students may retain active status while abroad between semesters, may be in the United States for a period of study lasting only a few weeks, or may travel abroad too often to be considered residents. Further, "active status" may not terminate until sometime after the nonimmigrant departs from the United States. Lastly, "active status" for dependents is derived from the status of the principal nonimmigrant, regardless of whether or not the dependents ever travel to the United States.

The numbers reported by IIE¹⁵ are survey estimates of academic enrollments at accredited institutions of higher learning by non-immigrants with academic student (F) or exchange visitor (J) visas.¹⁶ The IIE enrollment counts are expected to exceed DHS student population estimates because an enrolled student may be outside the United States for most or part of the year and because DHS does not include exchange visitors in its student estimates.¹⁷ Further, not all exchange visitors are students, so a clear comparison is not possible. IIE reported about 1.04 million enrollments in the 2015–2016 academic year,¹⁸ compared to a DHS population estimate of 870,000 students and about 1.1 million students and exchange visitors, combined.

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¹⁵ See the IIE Open Doors web publication: https://www.iie.org/Research-and-Insights/Open-Doors.

¹⁶ The IIE estimates also include persons engaged in optional practical training (OPT).

¹⁷ DHS student estimates include some types of students that IIE estimates do not (vocational students and secondary school students), but the numbers are very small in comparison.

 $^{^{\}rm 18}$ Including about 150,000 former students engaged in OPT.