Findings from the
2013 CGS International Graduate Admissions Survey

Phase III: Final Offers of Admission and Enrollment

Jeffrey R. Allum
Director, Research and Policy Analysis
Council of Graduate Schools

November 2013

Council of Graduate Schools
One Dupont Circle NW, Suite 230 • Washington, DC 20036
(202) 223-3791 • www.cgsnet.org

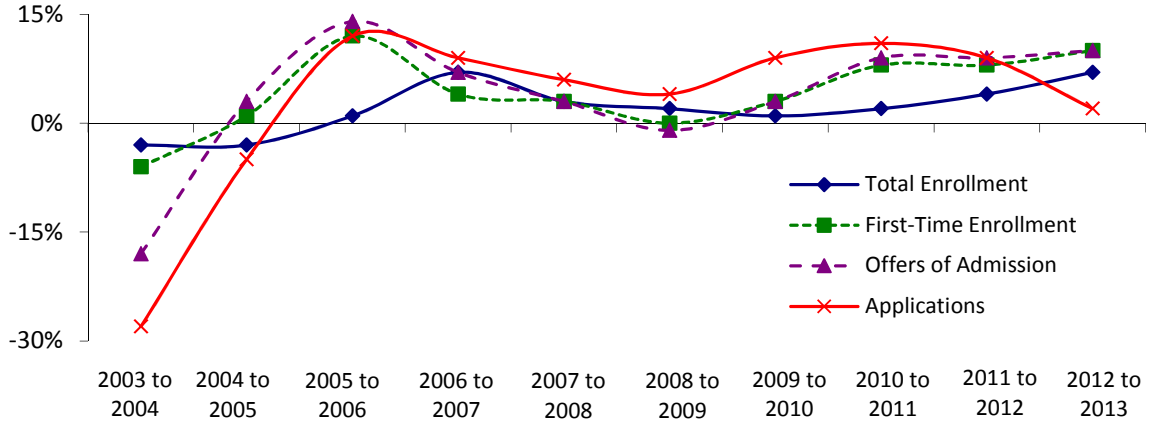
Overview

Since 2004, the Council of Graduate Schools (CGS) has conducted a multi-year empirical examination of international graduate application, admission, and enrollment trends. This analysis responds to member institutions' interest in ongoing changes in the enrollment of students from abroad seeking master's and doctoral degrees from U.S. colleges and universities. International students comprise 15% of all graduate students in the U.S.[1]

The core of this examination is a three-phase survey of CGS member institutions. The *CGS International Graduate Admissions Survey* collects an initial snapshot of applications to U.S. graduate schools from prospective international students (*Phase I*, conducted in February of each year), final applications and an initial picture of admissions offers to prospective international students (*Phase II*, June), and final offers of admission and first-time and total international graduate student enrollment (*Phase III*, October).[2]

Data from the 2013 *Phase III* survey reveal continued growth in offers of admission and enrollment (see Figure 1). Between 2012 and 2013, offers of admission to prospective international graduate students increased 10%, first-time international graduate enrollment increased 10%, and total international graduate enrollment increased 7%.

Figure 1.
Year-to-Year Percent Change in International Student Participation in U.S. Graduate Education, 2003 to 2004 through 2012 to 2013



Sources: CGS International Graduate Admissions Survey, Phases II and III, 2004 to 2013

[1] Gonzales, L.M., Allum, J.R., & Sowell, R.S. (2013). *Graduate Enrollment and Degrees: 2002 to 2012*. Washington, DC: Council of Graduate Schools.

[2] See www.cgsnet.org for reports from previous *CGS International Graduate Admissions Surveys*.

The first section of this report describes the methodology used to collect the data and calculate changes in offers of admission and enrollment from 2012 to 2013. The second section presents the survey results on offers of admission to prospective international students and compares the one-year changes to those in prior years. Section three presents data on first-time international graduate enrollment and compares the one-year changes to those in prior years. Section four examines total international graduate enrollment, and section five offers a summary and conclusion.

I. Survey Methodology and Response Rate

The survey population for the *2013 CGS International Graduate Admissions Survey, Phase III: Final Offers of Admission and Enrollment* consisted of all 513 U.S. colleges and universities that were members of CGS as of September 2013. CGS also has member institutions in Canada and global affiliates, but these institutions are not included in the survey population for the *CGS International Graduate Admissions Survey*. The survey questionnaire was e-mailed to the graduate dean (or equivalent) at each member institution on September 10, 2013, and responses were collected electronically through October 17, 2013.

The survey asked institutions to report the final number of offers of admission granted to prospective international graduate students for fall 2012 and fall 2013, the number of new (first-time) international graduate students in fall 2012 and fall 2013, and the total number of international graduate students in fall 2012 and fall 2013.[3] In the survey, an international student is defined as a person who is not a citizen, national, or permanent resident of the United States and is in this country on a student visa, or on a temporary basis, and does not have the legal right to remain indefinitely. For some campuses, the *Phase III* survey was administered before final enrollment numbers were known, and these institutions provided preliminary figures as of the same date each year. The taxonomy is presented in the Appendix.

Institutions were also asked to provide admissions and enrollment data for international students who originate from seven key sending countries (Brazil, Canada, China, India, Mexico, South Korea, and Taiwan) and three regions (Africa, Europe, and the Middle East). China, India, and South Korea are the top three countries of origin for international graduate students in the United States, accounting for about one-half of all non-U.S. citizens on temporary visas attending U.S. graduate schools.[4] Thus, examining student flows from these three countries in

[3] In addition to the data collected on international students, institutions were asked to provide the number of U.S. citizen and permanent resident first-time enrollees in fall 2012 and fall 2013. These data will be analyzed separately and reported in the December 2013 issue of CGS' *GradEdge*.

[4] Allum, J.R. (2012). *Findings from the 2012 CGS International Graduate Admissions Survey, Phase III: Final Offers of Admission and Enrollment*. Washington, DC: Council of Graduate Schools; Farrugia, C.A., Bhandari, R., & Chow, P. (2013). *Open Doors 2012: Report on International Educational Exchange*. New York, NY: Institute of International Education.

particular provides a good indicator of overall trends in offers of admission to and enrollment in U.S. graduate programs. Data regarding students from Brazil, Canada, Mexico, and Taiwan, as well as regions of Africa, Europe, and the Middle East were included beginning in 2012 because of the desire of CGS membership to know more about students from these countries and regions. It should be noted that beginning in 2012, students from Cyprus and Turkey were included in Europe. Prior to 2012, students from these countries were included in the Middle East, and year-to-year comparisons by region should be made with this in mind. Institutions were also asked to provide offers of admission and enrollment data for students in eight broad fields of study: arts and humanities, business, education, engineering, life sciences, physical and earth sciences,[5] social sciences and psychology, and 'other' fields.

Responses were coded according to the 2010 Carnegie basic classification. Specifically, responding institutions classified as RU/VH: Research Universities (very high research activity), RU/H: Research Universities (high research activity), or DRU: Doctoral/Research Universities were grouped as doctoral institutions. Responding institutions classified as Master's/L: Master's Colleges and Universities (larger programs), Master's/M: Master's Colleges and Universities (medium programs), or Master's/S: Master's Colleges and Universities (smaller programs) were grouped as master's-focused institutions. Responding institutions classified as specialized or baccalaureate institutions were excluded from this analysis.

Survey respondents were also coded according to one of for geographic regions: Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin); Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont); South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, Virginia, and West Virginia); and West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming).

A total of 285 institutions responded to the survey, for a response rate of 56%. Response rates among certain types of institutions were even higher: nine of the ten institutions that award the largest numbers of master's and doctoral degrees to international students, 22 of the 25 largest (88%), 44 of the 50 largest (88%), and 76 of the 100 largest (76%) responded to the survey.[6] The high response rates from these institutions are important because the 100 largest institutions confer about 56% of all graduate degrees awarded annually to international students in the United States. Overall, the 285 institutions responding to the *Phase III* survey conferred 67,846 or 66% of the approximately 103,000 graduate degrees awarded to

[5] The broad field of physical and earth sciences includes mathematics and computer sciences.

[6] These rankings are based on the number of graduate degrees awarded in academic year 2010/11, the most recent data available, as derived from the Integrated Postsecondary Education Data System (IPEDS) data files.

international students in the United States in 2010/11, suggesting that the survey results generally depict the participation of international students in U.S. graduate education.

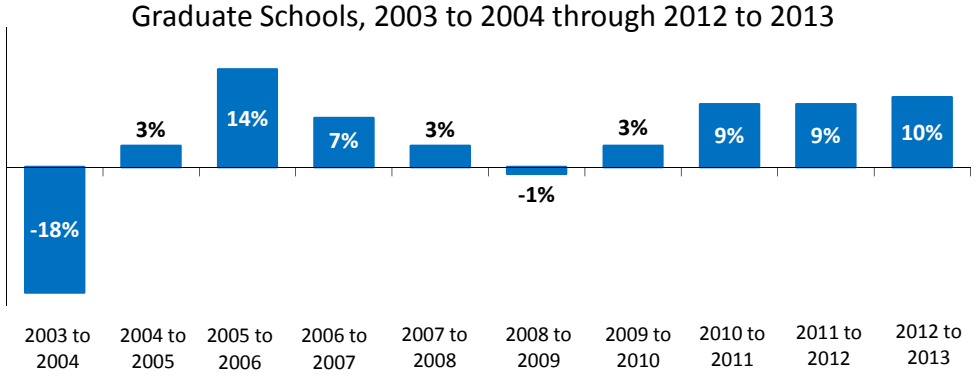
Institutions responding to the *Phase III* survey provided data for fall 2013 on a total of 184,777 offers of admission to prospective international graduate students, 71,418 international first-time enrollees, and 220,317 total international graduate students. In a few cases, institutions were unable to provide data for both 2012 and 2013 for either the totals or one of the subcategories. In those instances, these respondents were excluded from the appropriate analyses. Data were not imputed for non-responding institutions.

II. Offers of Admission to Prospective International Graduate Students

Total Number of Offers of Admission

For prospective international students, offers of admission to U.S. graduate schools increased 10% between 2012 and 2013. This increase in offers of admission follows a 9% increase in the previous two years, 2011 and 2012 (see Figure 2). The final 10% increase in international offers of admission from this *Phase III* survey is consistent with the initial 9% increase in international offers of admission reported in the *Phase II* survey report, released in August 2013.

Figure 2.
Year-to-Year Percent Change in Offers of Admission to Prospective International Students from U.S. Graduate Schools, 2003 to 2004 through 2012 to 2013



Sources: CGS International Graduate Admissions Survey, Phase III, 2004 to 2013

Offers of Admission by Country/Region of Origin

The *Phase III* survey results reveal substantial increases in offers of admission to prospective graduate students from India, Brazil, and the Middle East (see Table 1). Offers of admission to

prospective graduate students from India increased 30% in 2013. This is especially notable due to the fact that prospective graduate students from India, based upon respondents to this survey, constitute 27% of all offers of admission to U.S. graduate schools. Offers of admission to prospective graduate students from Brazil increased 23% in 2013, although it is important to note that prospective students from Brazil are smaller in number than prospective students from India. Offers of admission to prospective graduate students from the Middle East increased 13% in 2013, following a 17% increase in 2012 and a 16% gain in 2011.

Table 1. Change in International Offers of Admission, 2009 to 2010 through 2012 to 2013

	Final Number of Offers of Admission, 2009 to 2010	Final Number of Offers of Admission, 2010 to 2011	Final Number of Offers of Admission, 2011 to 2012	**Final Number of Offers of Admission, 2012 to 2013**
International Total	3%	9%	9%	**10%**
Country of Origin				
Brazil	--	--	6%	**23%**
Canada	--	--	9%	**0%**
China	15%	21%	20%	**5%**
India	-5%	2%	0%	**30%**
Mexico	--	--	6%	**2%**
South Korea	-7%	-2%	0%	**-11%**
Taiwan	--	--	-4%	**-2%**
Region of Origin				
Africa	--	--	10%	**7%**
Europe	--	--	2%	**-1%**
Middle East	10%	16%	17%	**13%**
Field of Study				
Arts & Humanities	2%	5%	6%	**8%**
Business	3%	11%	21%	**6%**
Education	-5%	7%	12%	**-1%**
Engineering	2%	8%	9%	**16%**
Life Sciences	-5%	7%	0%	**-4%**
Physical & Earth Sciences *	8%	11%	7%	**11%**
Social Sciences & Psychology	4%	2%	8%	**3%**
Other Fields	5%	13%	11%	**8%**

* Physical and earth sciences includes mathematics and computer sciences.

Note: Not all responding institutions provided data by country of origin and/or field of study.

Sources: CGS International Graduate Admissions Survey, Phase III, 2010 to 2013

Offers of admission to prospective graduate students from China increased 5% in 2013, which ends seven consecutive years of double-digit growth in offers of admission from China. This is notable because, based upon respondents to this survey, Chinese nationals constitute 39% of all offers of admission to U.S. graduate schools. Offers of admission to prospective graduate students from South Korea and Taiwan declined 11% and 2% respectively in 2013.

Offers of Admission by Field of Study

The majority (58%) of all international graduate students at U.S. institutions are enrolled in one of three broad fields: engineering, physical & earth sciences (which includes mathematics and computer science), and business,[7] and the *Phase III* survey reveals that international offers of admission increased in all three of these broad fields of study, 16%, 11%, and 6% respectively. Increases also occurred in arts and humanities (8%), 'other' fields (8%), and social sciences and psychology (3%). International offers of admission decreased in life sciences (-4%) and education (-1%).

Offers of Admission by Institutional Control and Carnegie Classification

International offers of admission increased at both public and private, not-for-profit institutions in 2013. At public institutions, international offers of admission increased 12% in 2013 following a 7% gain in 2012. At private, not-for-profit institutions, international offers of admission increased 7% in 2013 following a 14% gain in 2012 (see Table 2). Of the 269 institutions that provided total offers of admission data for both 2012 and 2013 in this year's Phase III survey, 192 were public institutions, 75 were private, not-for profit institutions, and two were private, for-profit institutions. Data for the private, for-profit respondent are included in the totals in Table 2, but are not broken out separately.

By Carnegie classification, offers of admission to prospective international graduate students increased 10% overall at doctoral institutions in 2013, a one percentage point increase from the 9% increase in 2012. International offers of admission increased 12% at public doctoral institutions in 2013 and 7% at private, not-for-profit doctoral institutions. At master's-focused institutions, international offers of admission increased 19% in 2013 following a 6% increase in 2012 (see Table 2). International offers of admission increased 27% at public master's-focused institutions in 2013 and 4% at private, not-for-profit master's focused institutions. The data for master's-focused institutions should be interpreted cautiously since they reflect a relatively small number of international offers of admission. In the 2013 *Phase III* survey, just 6% of all offers of admission to prospective international graduate students were from master's-focused institutions.

[7] Gonzales, L.M., Allum, J.R., & Sowell, R.S. (2013). *Graduate Enrollment and Degrees: 2002 to 2012*. Washington, DC: Council of Graduate Schools.

Table 2. Change in International Offers of Admission by Institutional Control and Carnegie Classificati and 2012 to 2013

	2011 to 2012		**2012 to 2013**	
	No. of Respon-dents	Final Change in Offers of Admission	**No. of Respon-dents**	**Final Change in Offers of Admission**
Total (All Institutions) *	253	9%	**269**	**10%**
Public	189	7%	**192**	**12%**
Private, not-for-profit	63	14%	**75**	**7%**
Doctoral Institutions *	172	9%	**187**	**10%**
Public	129	7%	**136**	**12%**
Private, not-for-profit	42	14%	**49**	**7%**
Master's-Focused Institutions	62	6%	**58**	**19%**
Public	47	-6%	**42**	**27%**
Private, not-for-profit	15	22%	**16**	**4%**

* For 2011 to 2012, one private, for-profit institution is included in the total but is not broken out separately by institutional control. For 2012 to 2013, two private, for-profit institutions are included in the total but not broken out separately by institutional control.
Notes: All results are based on the institutions providing total offers of admission data for *both* years being compared (2011 and 2012 and/or 2012 and 2013).
Sources: CGS International Graduate Admissions Survey, Phase III, 2012 and 2013

Offers of Admission by Geographic Region

Offers of admission by U.S. graduate schools to prospective international students increased in all four major regions of the United States in 2013. International offers of admission increased 15% in the West, 13% in the Midwest, 9% in the South, and 8% in the Northeast. Of the 270 institutions that provided total offers of admission data for both 2012 and 2013 in this year's *Phase III* survey, 93 institutions are located in the South, 70 in the Midwest, 54 in the Northeast, and 53 in the West.

Offers *of Admission by Number of Graduate Degrees Awarded to International Students*

The overall changes in the numbers of offers of admission to prospective international students potentially mask substantial differences between institutions with smaller and larger numbers of international students. Table 3 displays the changes in international offers of admission from 2012 to 2013 for the responding colleges and universities awarding the 10 largest, 25 largest, 50 largest, and 100 largest numbers of master's and doctoral degrees to international students. In addition, data are presented for all responding institutions outside the largest 100. The rankings are based on data collected by the U.S. Department of Education IPEDS data file.

In 2013, increases in the number of offers of admission to prospective international graduate students was smaller at institutions awarding larger numbers of graduate degrees to international students than institutions awarding smaller numbers of graduate degrees to international students. This is a reversal from 2012, in which the number of offers of admission to prospective international graduate students was *larger* at institutions awarding larger numbers of graduate degrees to international students than institutions awarding smaller numbers of graduate degrees to international students. International offers of admission increased 9% on average at the responding institutions that are among the 100 largest institutions in terms of graduate degrees awarded to international students, and 14% on average at the institutions outside the largest 100. Among this year's *Phase III* survey respondents, the institutions that are among the 100 largest accounted for 73% of all offers of admission reported, with the remaining 27% of all offers of admission coming from the institutions outside the largest 100.

Data on offers of admission to prospective graduate students from India drive the overall trend, with a smaller increase at the 100 largest institutions than at the institutions outside the largest 100, 24% on average and 46% on average respectively. Data collected for two regions of origin, Africa and the Middle East, follow a similar trend, in which increases in offers of admission at the 100 largest institutions are smaller than increases at institutions outside the largest 100. For example, offers of admission to prospective students from Africa increased 5% on average among the 100 largest institutions, and 10% on average among institutions outside the 100 largest institutions.

There were some differences in patterns of offers of admission by field of study. For instance, the single largest difference in offers of admission was in the field of engineering, where offers of admission increased 30% on average at institutions outside the largest 100 and increased 12% on average at the largest 100 institutions. In physical science, offers of admission increased 9% on average at the 100 largest institutions and increased 19% on average at the institutions outside the largest 100. In life sciences, offers of admission decreased 5% on average at the largest 100 institutions and decreased 2% on average at institutions outside the largest 100.

Table 3. Change in International Offers of Admission by Number of Graduate Degrees Awarded to International Students, 2012 to 2013

	10 Largest Institutions	25 Largest Institutions	50 Largest Institutions	100 Largest Institutions	All Other Institutions
International Total	4%	7%	9%	9%	14%
Country of Origin					
Brazil	12%	10%	18%	22%	24%
Canada	-12%	-8%	-4%	-2%	7%
China	-2%	7%	8%	6%	1%
India	8%	17%	22%	24%	46%
Mexico	20%	8%	5%	2%	2%
South Korea	-21%	-17%	-13%	-11%	-12%
Taiwan	3%	2%	4%	1%	-13%
Region of Origin					
Africa	1%	-2%	0%	5%	10%
Europe	0%	-3%	-1%	-1%	0%
Middle East	0%	-1%	0%	6%	21%
Field of Study					
Arts & Humanities	4%	7%	9%	8%	9%
Business	-9%	8%	8%	7%	6%
Education	8%	3%	3%	-1%	0%
Engineering	2%	7%	10%	12%	30%
Life Sciences	-4%	-8%	-6%	-5%	-2%
Physical & Earth Sciences *	-2%	4%	6%	9%	19%
Social Sciences & Psychology	0%	-3%	6%	5%	-2%
Other Fields	-3%	6%	10%	7%	8%

* Physical and earth sciences includes mathematics and computer sciences.
Notes: Rankings are based on data collected by the U.S. Department of Education. Not all responding institutions provided data by country of origin and/or field of study.

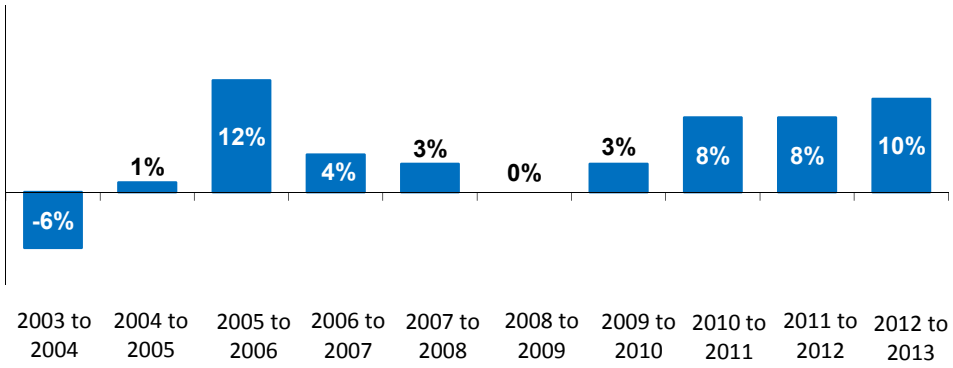
Source: CGS International Graduate Admissions Survey, Phase III, 2013

III. International First-Time Graduate Enrollment

Total First-Time Graduate Enrollment

First-time graduate enrollment is typically the best indicator of future trends in graduate enrollment. The *Phase III* survey results show that first-time enrollment of international students in U.S. graduate schools increased 10% between 2012 and 2013, slightly higher than the 8% gain in the two preceding years (see Figure 3).

Figure 3.
Year-to-Year Percent Change in First-Time Enrollment of International Students in U.S. Graduate Schools, 2003 to 2004 through 2012 to 2013



Sources: CGS International Graduate Admissions Survey, Phase III, 2004 to 2013

First-Time Graduate Enrollment by Country/Region of Origin

By country of origin, the largest increases in first-time graduate enrollment were from students from India and Brazil. First-time enrollment of students from India increased 40% in 2013 (see Table 4). This increase was substantially larger than the 1% increase in 2012 and the 2% increase in 2011. First-time enrollment of students from Brazil increased 17% in 2013, following a 14% increase in 2012. First-time enrollments also increased among students from Canada (3%), which was slightly lower than the 4% increase in 2012.

First-time graduate enrollment among students from China increased 5%, substantially smaller than the 22% increase in 2012, and the 21% increase in 2011. This marks the end of seven consecutive years of double-digit growth in first-time graduate enrollment of students from China. This is particularly notable due to the fact that, according to respondents to this survey, Chinese students constitute 34% of all international graduate students.

First-time graduate enrollment of students from South Korea declined 12% in 2013, marking six consecutive years of declines or no change in first-time enrollment among students from that country. First-time enrollment of students from Taiwan (-8%) and Mexico (-2%) also declined.

Table 4. Change in International First-Time Graduate Enrollment, 2009 to 2010 through 2012 to 2013

	First-Time Graduate Enrollment, 2009 to 2010	First-Time Graduate Enrollment, 2010 to 2011	First-Time Graduate Enrollment, 2011 to 2012	**First-Time Graduate Enrollment, 2012 to 2013**
International Total	3%	8%	8%	**10%**
Country of Origin				
Brazil	--	--	14%	**17%**
Canada	--	--	4%	**3%**
China	20%	21%	22%	**5%**
India	-3%	2%	1%	**40%**
Mexico	--	--	5%	**-2%**
South Korea	-3%	0%	-2%	**-12%**
Taiwan	--	--	-2%	**-8%**
Region of Origin				
Africa	--	--	4%	**5%**
Europe	--	--	1%	**3%**
Middle East	7%	14%	18%	**10%**
Field of Study				
Arts & Humanities	5%	5%	5%	**9%**
Business	2%	9%	15%	**6%**
Education	-7%	12%	8%	**3%**
Engineering	3%	6%	12%	**17%**
Life Sciences	0%	1%	1%	**-3%**
Physical & Earth Sciences *	9%	12%	4%	**18%**
Social Sciences & Psychology	4%	2%	9%	**1%**
Other Fields	5%	8%	8%	**7%**

* Physical and earth sciences includes mathematics and computer sciences.

Note: Not all responding institutions provided data by country of origin and/or field of study.

Sources: CGS International Graduate Admissions Survey, Phase III, 2010 to 2013

Changes in first-time graduate enrollment of students from the Middle East were the largest of the three regions, at 10%. First-time enrollment of students from the Middle East has been growing in recent years, from 7% in 2010, to 14% in 2011, and 18% in 2012. Increases in first-time enrollment by students from Africa and Europe were smaller in 2013, at 5% and 3% respectively. The impact of these gains is offset some by the fact that they constitute moderate

to small numbers of all first-time enrollments. According to survey respondents, students from Europe constitute 7% of all first-time enrollments among international students in 2013, while students from Africa constitute 3%, and students from the Middle East constitute 6%.

First-Time Graduate Enrollment by Field of Study

International first-time graduate enrollment increased in all but one broad field in 2013 (see Table 4). The largest gains were in physical and earth sciences (18%) and engineering (17%). This is particularly significant due to the fact that, according to respondents to this survey, nearly one-half (47%) of all international first-time enrollments were in these two fields. There were also increases in first-time enrollment in arts and humanities (9%), 'other' fields (7%), business (6%), education (3%), and social sciences and psychology (1%). There was a 3% decrease in first-time enrollment among international students in the field of life sciences.

First-Time Graduate Enrollment by Institutional Control and Carnegie Classification

International first-time graduate enrollment increased at both public institutions and private, not-for-profit institutions in 2013 (see Table 5). At public institutions, international first-time graduate enrollment increased 11% in 2013 following an 8% gain in 2012, while at private, not-for-profit institutions international first-time graduate enrollment increased 8% in 2013 following a 9% gain in 2012.

By Carnegie classification, international first-time graduate enrollment increased 9% in 2013 at doctoral institutions following a 9% gain in 2012, and increased 41% at master's-focused institutions in 2013 (see Table 5). By Carnegie classification and institutional control, international first-time graduate enrollment increased 10% at public doctoral institutions and 8% at private, not-for-profit doctoral institutions. At master's-focused institutions, international first-time graduate enrollment increased 50% at public institutions and 20% at the master's-focused private, not-for-profit institutions. Data for master's-focused institutions should be interpreted cautiously given the small number of these institutions responding to the survey and due to the fact that a small number of first-time international graduate students are enrolled at these institutions.

Table 5. Change in International First-Time Graduate Enrollment by Institutional Control and Carnegie Classification, 2011 to 2012 and 2012 to 2013

	2011 to 2012		**2012 to 2013**	
	No. of Respon-dents	% Change in First-Time Enrollment	**No. of Respon-dents**	**% Change in First-Time Enrollment**
Total (All Institutions) *	257	8%	**273**	**10%**
Public	189	8%	**195**	**11%**
Private, not-for-profit	67	9%	**76**	**8%**
Doctoral Institutions *	174	9%	**186**	**9%**
Public	129	9%	**135**	**10%**
Private, not-for-profit	44	9%	**49**	**8%**
Master's-Focused Institutions	63	-3%	**62**	**41%**
Public	47	-9%	**46**	**50%**
Private, not-for-profit	16	9%	**16**	**20%**

* For 2011 to 2012, one private, for-profit institution is included in the total but is not broken out separately by institutional control. For 2012 to 2013, two private, for-profit institutions are included in the total but not broken out separately by institutional control.
Notes: All results are based on the institutions providing total offers of admission data for *both* years being compared (2011 and 2012 and/or 2012 and 2013).
Sources: CGS International Graduate Admissions Survey, Phase III, 2012 and 2013

First-Time Graduate Enrollment by Geographic Region

International first-time graduate enrollment increased in all four major regions of the United States in 2013. International first-time graduate enrollment increased 17% in the West, 12% in the Midwest, 9% in the Northeast, and 7% in the South. Of the 274 institutions that provided international first-time graduate enrollment data for both 2012 and 2013 in this year's Phase III survey, 95 institutions are located in the South, 71 in the Midwest, and 54 each in the Northeast and West.

First-Time Graduate Enrollment by Number of Graduate Degrees Awarded to International Students

Institutions awarding larger numbers of graduate degrees to international students were less likely to experience increases in international first-time graduate enrollment in 2013 than institutions awarding smaller numbers of graduate degrees to international students (see Table 6). This is a reversal from 2012, in which first-time enrollment among international graduate students was *larger* at institutions awarding larger numbers of graduate degrees to

international students than institutions awarding smaller numbers of graduate degrees to international students. International first-time graduate enrollment increased 9% on average at the responding institutions that are among the 100 largest in terms of graduate degrees awarded to international students, compared with a 14% average increase at the institutions outside the largest 100. Among this year's *Phase III* survey respondents, the institutions that are among the 100 largest accounted for 74% of all international first-time graduate enrollment in 2013, with the remaining 26% of international first-time graduate enrollment at the institutions outside the largest 100.

Table 6. Change in International First-Time Graduate Enrollment by Number of Graduate Degrees Awarded to International Students, 2012 to 2013

	10 Largest Institutions	25 Largest Institutions	50 Largest Institutions	100 Largest Institutions	All Other Institutions
International Total	1%	6%	7%	9%	14%
Country of Origin					
Brazil	3%	1%	15%	18%	16%
Canada	-8%	-4%	0%	0%	10%
China	0%	8%	7%	6%	2%
India	13%	18%	24%	30%	73%
Mexico	21%	7%	7%	4%	-15%
South Korea	-23%	-21%	-16%	-12%	-10%
Taiwan	-15%	-7%	-5%	-8%	-10%
Region of Origin					
Africa	17%	5%	8%	5%	6%
Europe	14%	8%	7%	5%	-1%
Middle East	6%	6%	10%	11%	10%
Field of Study					
Arts & Humanities	6%	10%	6%	7%	10%
Business	-4%	8%	6%	7%	4%
Education	12%	25%	12%	9%	-7%
Engineering	2%	6%	11%	12%	37%
Life Sciences	-7%	-10%	-5%	-4%	-3%
Physical & Earth Sciences *	9%	12%	9%	15%	26%
Social Sciences & Psychology	-8%	-5%	2%	1%	-2%
Other Fields	-2%	4%	7%	5%	11%

* Physical and earth sciences includes mathematics and computer sciences.
Notes: Rankings are based on data collected by the U.S. Department of Education. Not all responding institutions provided data by country of origin and/or field of study.
Source: CGS International Graduate Admissions Survey, Phase III, 2013

Data on first-time graduate enrollment of students from India drive the overall trend in terms of first-time enrollment, with smaller increases on average at the 100 largest institutions (30%) than at the institutions outside the largest 100 (73%). Similarly, first-time enrollment at the largest 100 institutions among students from Africa increased 5% on average compared to a 6% average increase in first-time enrollment to institutions outside of the largest 100.

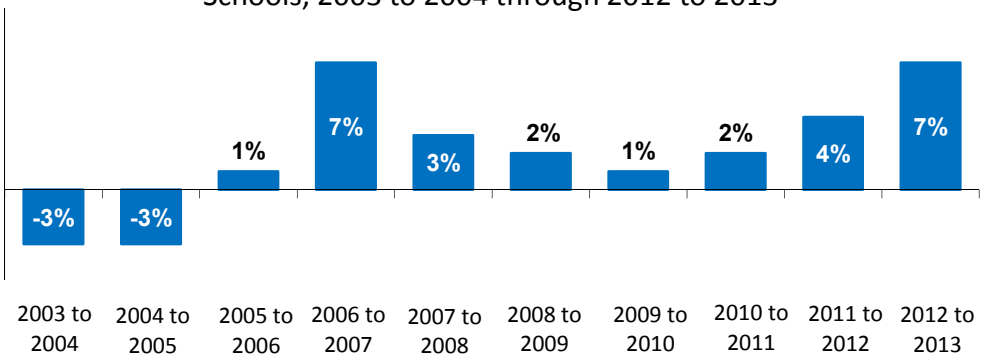
In four of eight broad fields (arts and humanities, engineering, physical and earth sciences, and 'other' fields) first-time graduate enrollment increased by a smaller amount at the 100 largest institutions than at institutions outside the largest 100. For example, international first-time graduate enrollment in engineering 12% on average at the 100 largest institutions compared with 37% on average at the institutions outside the largest 100.

IV. International Total Graduate Enrollment

Total Graduate Enrollment

The *Phase III* survey results show that total graduate enrollment of international students in U.S. graduate schools increased 7% between 2012 and 2013 following increases of 4% in 2012 and 2% in 2011 (see Figure 4). This year's increase is the eighth consecutive year of growth in total graduate enrollment among international students.

Figure 4.
Year-to-Year Percent Change in Total Enrollment of International Students in U.S. Graduate Schools, 2003 to 2004 through 2012 to 2013



Sources: CGS International Graduate Admissions Survey, Phase III, 2004 to 2013

Total Graduate Enrollment by Country/Region of Origin

The *Phase III* survey results reveal that total graduate enrollment of students from India increased 14% in 2013 (see Table 7). This is the first increase in total graduate enrollment among students from India since 2008. Total graduate enrollment of students from China increased 11% in 2013, following a 16% increase in 2012, a 15% increase in 2011, and a 13% increase in 2010. Total graduate enrollment increased in 2013 among students from Brazil (9%) and Mexico (6%) as well.

Table 7. Change in International Total Graduate Enrollment, 2009 to 2010 through 2012 to 2013

	Total Graduate Enrollment, 2009 to 2010	Total Graduate Enrollment, 2010 to 2011	Total Graduate Enrollment, 2011 to 2012	**Total Graduate Enrollment, 2012 to 2013**
International Total	1%	2%	4%	**7%**
Country of Origin				
Brazil	--	--	4%	**9%**
Canada	--	--	3%	**-1%**
China	13%	15%	16%	**11%**
India	-6%	-6%	-3%	**14%**
Mexico	--	--	11%	**6%**
South Korea	-6%	-5%	-3%	**-6%**
Taiwan	--	--	-4%	**-7%**
Region of Origin				
Africa	--	--	3%	**0%**
Europe	--	--	1%	**1%**
Middle East	11%	11%	21%	**15%**
Field of Study				
Arts & Humanities	0%	1%	2%	**5%**
Business	0%	6%	9%	**9%**
Education	0%	-1%	5%	**2%**
Engineering	3%	2%	6%	**10%**
Life Sciences	1%	0%	1%	**1%**
Physical & Earth Sciences *	4%	2%	4%	**11%**
Social Sciences & Psychology	3%	0%	5%	**3%**
Other Fields	4%	3%	6%	**2%**

* Physical and earth sciences includes mathematics and computer sciences.

Note: Not all responding institutions provided data by country of origin and/or field of study.

Sources: CGS International Graduate Admissions Survey, Phase III, 2010 to 2013

Total enrollment among graduate students from Taiwan decreased 7%, and decreased 6% among students from South Korea. This marks the sixth consecutive year in which total graduate enrollment among students from South Korea has declined. Total enrollment also declined 1% among students from Canada.

By region, total graduate enrollment of students from the Middle East increased 15% in 2013, marking the fifth consecutive year of double-digit increases in total enrollment among students from that region. Total graduate enrollment of students from Europe increased 1% and was unchanged among students from Africa in 2013.

Total Graduate Enrollment by Field of Study

In 2013, international total graduate enrollment increased in all broad fields (see Table 7). The largest increase in international total graduate enrollment occurred in physical and earth sciences, with an 11% gain, followed by an increase of 10% in engineering, and a 9% increase in business. Growth also occurred in arts and humanities (5%), social sciences and psychology (3%), education (2%), 'other' fields (2%), and life sciences (1%).

Total Graduate Enrollment by Institutional Control and Carnegie Classification

International total graduate enrollment increased at both public and private, not-for-profit institutions in 2013 (see Table 8). At public institutions, international total graduate enrollment increased 7% in 2013 following a 3% rise in 2012. At private, not-for-profit institutions, international total graduate enrollment rose 7% in 2013, the same increase as in 2012.

By Carnegie classification, international total graduate enrollment increased 6% at doctoral institutions in 2013, and 14% at master's-focused institutions (see Table 8). The 6% gain at doctoral institutions in 2013 follows a 4% gain in 2012, while the 14% increase at master's-focused institutions in 2013 follows a 2% decline in 2013. By Carnegie classification and institutional control, international total graduate enrollment increased 6% at public doctoral institutions and 7% at private, not-for-profit doctoral institutions. At master's-focused institutions, international total graduate enrollment increased 18% at public institutions, and increased 4% at private, not-for-profit institutions. Data for master's-focused institutions should be interpreted cautiously, however, given the small number of these institutions responding to the survey and to the small number of international graduate students at these institutions.

Table 8. Change in International Total Graduate Enrollment by Institutional Control and Carnegie Classification, 2011 to 2012 and 2012 to 2013

	2011 to 2012		**2012 to 2013**	
	No. of Respon-dents	% Change in Total Enrollment	**No. of Respon-dents**	**% Change in Total Enrollment**
Total (All Institutions) *	257	4%	**275**	**7%**
Public	189	3%	**196**	**7%**
Private, not-for-profit	67	7%	**77**	**7%**
Doctoral Institutions *	173	4%	**187**	**6%**
Public	129	3%	**136**	**6%**
Private, not-for-profit	43	7%	**49**	**7%**
Master's-Focused Institutions	64	-2%	**63**	**14%**
Public	47	-3%	**46**	**18%**
Private, not-for-profit	17	1%	**17**	**4%**

* For 2011 to 2012, one private, for-profit institution is included in the total but is not broken out separately by institutional control. For 2012 to 2013, two private, for-profit institutions are included in the total but not broken out separately by institutional control.
Notes: All results are based on the institutions providing total offers of admission data for both years being compared (2011 and 2012 and/or 2012 and 2013).

Sources: CGS International Graduate Admissions Survey, Phase III, 2012 and 2013

Total Graduate Enrollment by Geographic Region

International total graduate enrollment increased in three of the four major regions of the United States in 2013. International total graduate enrollment increased 9% in the West, 7% in both the Northeast and the Midwest, and 5% in the South. Of the 276 institutions that provided international total graduate enrollment data for both 2012 and 2013 in this year's *Phase III* survey, 95 institutions are located in South, 71 in the Midwest, and 55 in each the Northeast and West.

Total Graduate Enrollment by Number of Graduate Degrees Awarded to International Students

The largest 100 institutions, in terms of the number of graduate degrees awarded to international students, experienced the same level of increase in total graduate enrollment as institutions outside the largest 100 (7% on average) in 2013 (see Table 9). Among this year's *Phase III* survey respondents, the institutions that are among the 100 largest accounted for 72% of all international graduate enrollment in 2013, with the remaining 28% of international graduate enrollment at the institutions outside the largest 100.

Table 9. Change in International Total Graduate Enrollment by Number of Graduate Degrees Awarded to International Students, 2012 to 2013

	10 Largest Institutions	25 Largest Institutions	50 Largest Institutions	100 Largest Institutions	All Other Institutions
International Total	4%	6%	7%	7%	7%
Country of Origin					
Brazil	5%	7%	13%	12%	0%
Canada	-3%	0%	0%	1%	-5%
China	10%	13%	13%	12%	7%
India	4%	10%	11%	13%	19%
Mexico	17%	19%	14%	12%	-5%
South Korea	-9%	-9%	-7%	-6%	-6%
Taiwan	-6%	-5%	-4%	-5%	-13%
Region of Origin					
Africa	-3%	-2%	1%	0%	2%
Europe	-4%	-1%	0%	0%	2%
Middle East	8%	5%	11%	12%	18%
Field of Study					
Arts & Humanities	5%	3%	3%	3%	7%
Business	-2%	10%	10%	10%	6%
Education	11%	2%	2%	1%	1%
Engineering	5%	7%	8%	9%	14%
Life Sciences	0%	-1%	-1%	0%	2%
Physical & Earth Sciences *	19%	13%	11%	11%	11%
Social Sciences & Psychology	2%	2%	3%	2%	4%
Other Fields	-10%	0%	3%	1%	5%

* Physical and earth sciences includes mathematics and computer sciences.

Notes: Rankings are based on data collected by the U.S. Department of Education.

Source: CGS International Graduate Admissions Survey, Phase III, 2013

While the increase in total graduate enrollment of students from China was smaller at the institutions outside the largest 100, the gain in this category was 7% on average. For students from the Middle East, total graduate enrollment increased 18% on average at the institutions outside the largest 100, compared with a 12% average gain at the 100 largest institutions. For students from India, total graduate enrollment increased 13% on average at the 100 largest institutions, and 19% on average at institutions outside the largest 100. For students from South Korea, there was a 6% decreased in total enrollment among the 100 largest institutions as well as institutions outside the largest 100.

There was variation in international total graduate enrollment by the number of graduate degrees awarded to international students by field of study. Business was the only field in which the increase in total enrollment was larger at the 100 largest institutions (10% on average) than at the institutions outside the largest 100 (6% on average). In education, the growth at the 100 largest institutions (1% on average) was the same as growth at all other institutions (1% on average). In physical and earth sciences, the growth at the 100 largest institutions (11% on average) was the same as growth at all other institutions (11% on average).

V. Summary and Conclusions

Summary

The results of the *2013 CGS International Graduate Admissions Survey, Phase III: Final Offers of Admission and Enrollment* revealed that 184,777 offers of admission were made to prospective international graduate students in 2013. Offers of admission to U.S. graduate schools increased 10% between 2012 and 2013. Offers of admission to prospective graduate students from India increased 30%, while offers of admission to prospective graduate students from China grew 5%. This ends seven consecutive years of double-digit growth in offers of admission for prospective graduate students from China, which is especially significant because, based upon respondents to this survey, Chinese nationals constitute 39% of all offers of admission to U.S. graduate schools. Offers of admission to students from the Middle East continue to increase, while offers of admission to students from South Korea and Taiwan continue to decline.

Survey respondents reported a total of 71,418 international first-time enrollees in 2013. The *Phase III* survey results show that first-time enrollment of international students in U.S. graduate schools increased 10% between 2012 and 2013. First-time enrollments among students from China increased 5%, which, like offers of admission from China, marks the end of seven consecutive years of double-digit growth in first-time graduate enrollment of students from that country. In contrast, first-time enrollment among students from India increased 40% in 2013. Although comparatively small in numbers, it is notable that first-time enrollment among students from Brazil rose 17%. By field of study, the largest gains were in physical and earth sciences (18%) and engineering (17%). Increases were also seen in the field of business (6%), which, along with physical and earth sciences and engineering, tends to draw large numbers of international students.

Finally, respondents to the *2013 CGS International Graduate Admissions Survey, Phase III: Final Offers of Admission and Enrollment* reported that 220,317 international graduate students were enrolled in graduate programs in 2013. Total graduate enrollment of international students in U.S. graduate schools increased 7% in 2013 following increases of 4% in 2012 and 2% in 2011. Whereas total graduate enrollment of students from China rose 11% in 2013, this was smaller

than the previous three years. Total graduate enrollment of students from India increased 14% after four years of declines in total enrollment. Total graduate enrollment of students from Taiwan and South Korea declined 7% and 6% respectively. By field, the largest increase in international total graduate enrollment occurred in physical and earth sciences, an 11% gain, followed by a 10% increase in engineering, and a 9% increase in business.

Conclusions

Results of the *2013 CGS International Graduate Admissions Survey, Phase III: Final Offers of Admission and Enrollment* show continued growth in offers of admission, first-time enrollment, and total enrollment among international graduate students at U.S. institutions. The nature of the trend is changing in at least three ways, including the fact that increases in international graduate student offers of admission and enrollment persist in the face of decreases in applications from international students. As reported in the *2013 CGS International Graduate Admissions Survey, Phase II: Final Applications and Initial Offers of Admission* report, applications for admission increased 2% in 2013, the lowest increase in seven years.

Second, international graduate students continue to apply to and enroll in fields that have been traditionally popular among this population. More than one-half (58%) of all international graduate students at U.S. institutions are enrolled in one of three broad fields (business, engineering, and physical and earth sciences). Offers of admission increased 16% in engineering, 11% in physical and earth sciences, and 6% in business in 2013. First-time enrollment increased 18% in physical and earth sciences, 17% in engineering, and 6% in business in 2013. Of note, however, increases in offers of admissions and first-time enrollment in business were smaller than increases in the preceding two years.

Finally, data generated by the *2013 CGS International Graduate Admissions Survey, Phase III: Final Offers of Admission and Enrollment* reveals a change in patterns among students from China and India. In past *CGS International Graduate Admissions* surveys, changes in offers of admission to and enrollment of students from India tended to fluctuate between increases and decreases in relatively small increments. In 2013, however, offers of admission to prospective students from India increased 30%, and first-time enrollment of students from that country increased 40%. By comparison, increases in offers of admission to and enrollment of students from China were routinely large. This most recent survey, however, marks the end of seven-year run of double-digit increases in offers of admissions to and first-time enrollment of students from that country. Offers of admission to prospective students from China increased 5% in 2013, and first-time enrollment of students from China increased by the same amount.

Principal Researcher and Author: Jeffrey R. Allum, Director, Research and Policy Analysis
Research Assistant: Jeannette Remington, Program Manager

Appendix
CGS International Graduate Admissions Survey Taxonomy

ARTS & HUMANITIES
- Arts – History, Theory & Criticism
- Arts – Performance & Studio
- English Language & Literature
- Foreign Languages & Literatures
- History
- Philosophy
- Arts & Humanities, Other

BUSINESS
- Accounting
- Banking and Finance
- Business Administration & Management
- Business, Other

EDUCATION
- Education Administration
- Curriculum and Instruction
- Early Childhood Education
- Elementary Education
- Educational Assessment, Evaluation and Research
- Higher Education
- Secondary Education
- Special Education
- Student Counseling & Personnel Services
- Education, Other

ENGINEERING
- Chemical Engineering
- Civil Engineering
- Computer, Electrical & Electronics Engineering
- Industrial Engineering
- Materials Engineering
- Mechanical Engineering
- Engineering, Other

LIFE SCIENCES
- Agriculture, Natural Resources & Conservation
- Biological & Biomedical Sciences
- Health & Medical Sciences

PHYSICAL & EARTH SCIENCES
- Chemistry
- Computer & Information Sciences
- Earth, Atmospheric & Marine Sciences
- Mathematical Sciences
- Physics & Astronomy
- Physical Sciences, Other

SOCIAL SCIENCES & PSYCHOLOGY
- Anthropology
- Archaeology
- Economics
- Political Science
- Psychology
- Sociology
- Social Sciences, Other

OTHER FIELDS
- Architecture & Environmental Design
- Communications & Journalism
- Family & Consumer Sciences
- Library & Archival Studies
- Public Administration
- Religion & Theology
- Social Work
- Other Fields