

International Graduate Applications and Enrollment



Fall 2016



International Graduate Applications And Enrollment: Fall 2016

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Executive Summary

International graduate *application* growth rates have slowed down, but the rate of growth for first-time international graduate *enrollment* remained the same.

- Between Fall 2015 and Fall 2016 admission cycles, the application counts from prospective international graduate students to U.S. institutions grew by 1%, a slower rate as compared to the last reporting cycle.
- Between the same period, first-time enrollment of international graduate students at U.S. institutions grew by 5%, holding the same rate of growth as seen between Fall 2014 and Fall 2015.

India, Saudi Arabia, and Europe show some notable changes in total applications and first-time enrollment.

- International graduate applications and first-time graduate enrollment of Indian students at U.S. institutions declined by -1% and -7%, respectively, continuing the recent trend of declining growth rates.
- International graduate applications and first-time enrollment from Saudi Arabian students have dropped by -20% and -13%, respectively, and the whole Middle East & North Africa region saw similar declines.
- While application counts of prospective European graduate students to U.S. institutions remained the same, first-time enrollment of European graduate students at U.S. institutions rose by 8%, ending a trend of declining enrollment growth rates.

Other key statistics.

- Master's and certificate programs constituted 68% of total international graduate applications and 78% of first-time international graduate enrollment in Fall 2016.
- China and India remain the top senders of international graduate applications (38% and 30%, respectively) and first-time international graduate enrollment (36% and 27%, respectively).
- Engineering (30% and 26%, respectively), Mathematics & Computer Sciences (21% and 20%, respectively), and Business (17% and 20%, respectively) are among the leading fields of study for international graduate students both in total applications and first-time enrollment in Fall 2016.

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Introduction

The Council of Graduate Schools (CGS) has conducted the International Graduate Admissions Survey since 2004. In response to the graduate education community's interest in ongoing changes in the application and enrollment of students from abroad seeking U.S. master's and doctoral degrees, this survey collects data on total application counts and offers of admission, as well as first-time and total enrollment of international graduate students.

The 2016 survey was administered between September 26 and October 31, 2016. The survey instrument was sent to 741 institutions of higher education: 477 were CGS members as of January 2016; and 264 were not CGS members but were members of the Conference of Southern Graduate Schools (CSGS), the Midwestern Association of Graduate Schools (MAGS), the Northeastern Association of Graduate Schools (NAGS), or the Western Association of Graduate Schools (WAGS). Institutions were asked to report the numbers of total applications and offers of admission to master's, certificate, and doctoral programs from prospective international students for Fall 2016 admission cycles, as well as first-time and total international graduate student enrollment in Fall 2016. A total of 395 institutions, or 53%, responded to the survey.

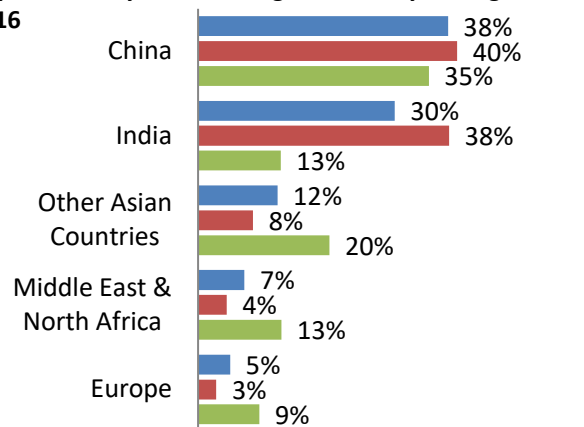
Overview of International Graduate Students in the U.S.

U.S. graduate institutions that participated in the 2016 CGS International Graduate Admissions Survey received nearly 1.8 million applications for admission to graduate programs for studies beginning in Fall 2016. Of those, 838,627 applications, or 47%, were submitted by prospective international students. Although nearly one-half of graduate applications originated from international students, proportionally fewer offers of admission were made to them. Of the nearly 680,000 offers of

admission made by institutions that participated in this survey for the Fall 2016 admission cycle, 239,828, or about 35%, were made to international students.

The admission yield for international graduate students was lower than for that of U.S. citizen/permanent resident graduate students. Participating institutions enrolled more than 375,000 graduate students for the first-time in Fall 2016. Of these 92,503, or 25%, were international students. Twenty-two percent of first-time international graduate students enrolled in doctoral programs, compared to 17% of U.S. citizen/permanent resident first-time graduate students that started in doctoral programs. Similarly, a proportionally larger share of the total international graduate enrollment was for doctoral students. Four out of ten (40%) international graduate students at responding institutions were pursuing a doctoral degree. In contrast, only about one-quarter (26%) of all graduate students, including U.S. citizens and permanent residents, were pursuing a doctoral degree. Across participating institutions, over one million master's and doctoral students were enrolled, and 24% of them (283,496 students) were international students.

Figure 1. Distribution of Total International Graduate Applications by Selected Region/Country of Origin, Fall 2016



Data Source: Council of Graduate Schools, *International Graduate Applications and Enrollment, Fall 2016, Appendix Table A.1*

Total Applications and Offers of Admission, Fall 2016 Admission Cycle

Total Applications

Prospective Chinese and Indian students accounted for 68% of the total international graduate applications received by institutions responding to the 2016 CGS International Graduate Admissions Survey. Graduate applications submitted by Indian nationals for all graduate programs accounted for 30% of the total. In contrast to last year, Chinese nationals (40%) edged their Indian counterparts (38%) by a small margin in terms of the number of applications for master's and certificate programs in Fall 2016. Prospective Chinese graduate students sent more than one-third of international doctoral applications (35%) during the Fall 2016 admission cycle, exceeding the number of applications from Indian nationals by more than twenty percentage points. Iranian nationals accounted for 8% of international applications for doctoral programs, nearly as many doctoral applications as from the entire region of Europe and tied with South Korea (see Figure 1).

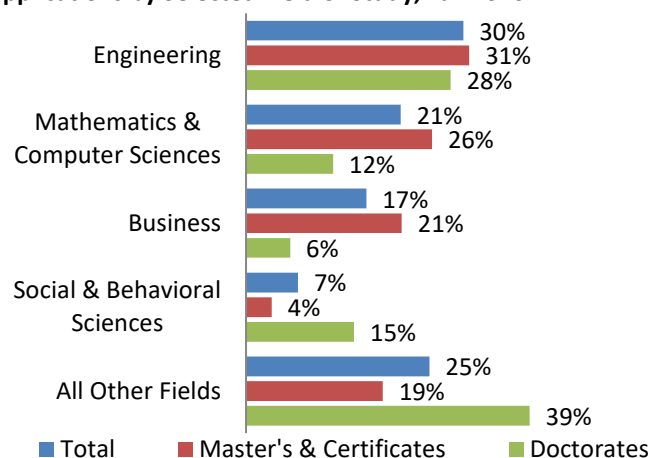
By fields of study, engineering continued to receive the most applications from international students for both master's and certificate programs (31%) and doctoral programs (28%). At the master's and certificate level, mathematics and computer sciences (26%) and business (21%) followed engineering. However, the pattern for international doctoral applications was somewhat different, where social & behavioral sciences (15%), physical & earth sciences (13%), mathematics & computer sciences (12%), and biological & agricultural sciences (11%), followed (see Figure 2) engineering.

For those applicants whose degree levels were known, a little over two-thirds (68%) submitted applications for master's and certificate programs, and 32% submitted applications for

doctoral degree programs. The vast majority of graduate applications from Indian nationals (86%) was for master's and certificate programs. In contrast, more than two-thirds (69%) of applications from the Republic of Korea (South Korea) and 62% of applications from European nationals were for doctoral programs. In the Middle East & North Africa region, two-thirds of applications (68%) from Saudi Arabian nationals were for master's and certificate programs, while four out of five (80%) applications from Iranian nationals were for doctoral programs. Only 42% of applications from the Middle East & North Africa region (including Iran and Saudi Arabia) were for master's and certificates programs, suggesting that prospective students from other countries in the region apply to U.S. doctoral programs in large numbers (see [Appendix Table A.1](#)).

By fields of study, business (88%), mathematics & computer sciences (82%), public administration & services (81%), and engineering (70%) had large majorities of applications directed toward master's and certificate programs. In contrast, applications for basic science fields, such as physical & earth sciences (84%), biological & agricultural sciences (67%), and social & behavioral sciences (66%)

Figure 2. Distribution of Total International Graduate Applications by Selected Field of Study, Fall 2016



Data Source: Council of Graduate Schools, *International Graduate Applications and Enrollment, Fall 2016, Appendix Table A.1*

were more likely to be for doctoral programs (see [Appendix Table A.2](#)).

Offers of Admission

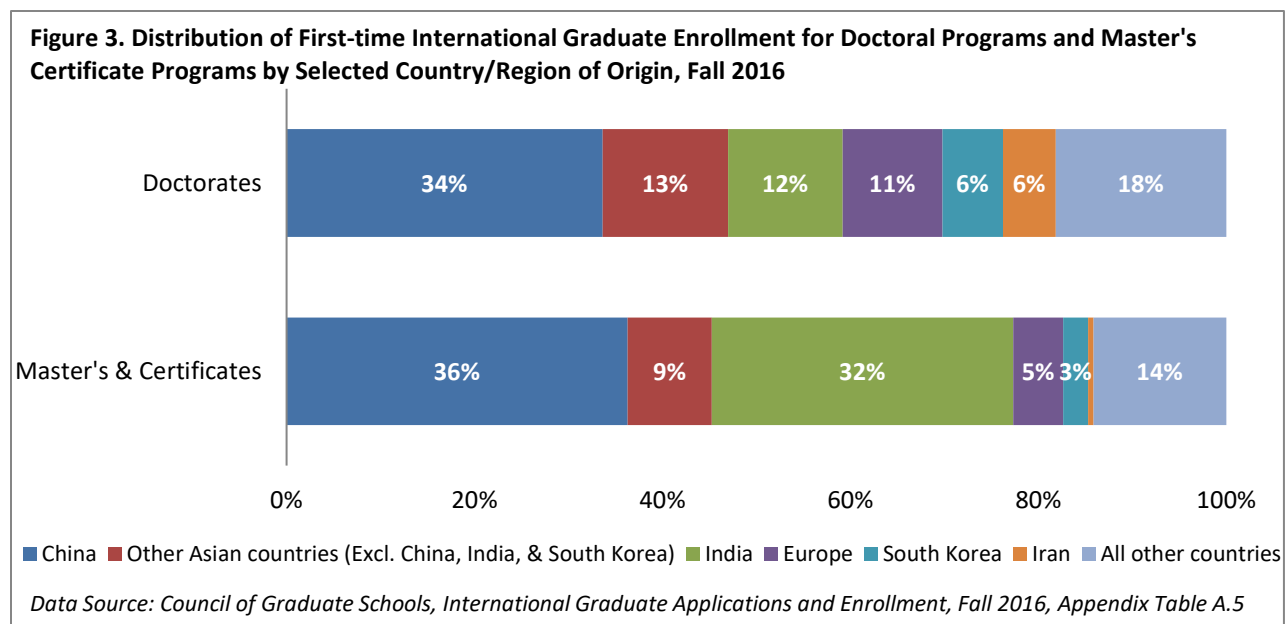
Master’s and certificate students accounted for eighty-two percent of all offers of admission made to prospective international graduate students during the Fall 2016 admission cycle at participating institutions. Total *applications* submitted by this group comprised 68% of total applications, suggesting that suggests application acceptance rates are lower for doctoral programs for than master’s and certificate programs. For example, 62% of graduate applications from European nationals were made in doctoral programs, but only 38% of offers of admission were for doctoral programs. Similarly, more than two-thirds (69%) of graduate applications from South Korean nationals were for doctoral programs, but only 43% of admission offers were for doctoral programs. Full distributions of offers of admission by region/selected countries of origin and by fields of study are included in appendix tables (see [Appendix Table A.3](#) and [Appendix Table A.4](#)).

First-time and Total International Graduate Enrollment, Fall 2016

First-time Enrollment

Of the over 92,500 first-time international graduate students, approximately eight out of ten (77%) were from Asia, including Chinese nationals (36%) and Indian nationals (27%). The shares of Chinese national and Indian national students have dropped by three percentage points and four percentage points compared to Fall 2015 figures. Still, students from these countries constituted the large majority of all first-time international graduate students. In particular, the representation of Asian international students is robust in master’s and certificate programs, accounting for 80% of all first-time students with China and India respectively claiming 36% and 32% of the shares. Similar to application counts and offers of admission, Chinese graduate students lead their counterparts from other regions and countries by a large margin. China’s share of first-time doctoral students (34%) equals that of India (12%), the regions of Middle East & North Africa, (11%) and Europe (11%) combined (see Figure 3).

Regarding the degree objectives of international graduate students, first-time Indian graduate



students were predominantly (90%) in master’s and certificate programs. Similarly, almost three-fourths (74%) of first-time Saudi Arabian graduate students in Fall 2016 were in master’s and certificate programs. This was in contrast to the whole Middle East & North Africa region (including Saudi Arabia), where 45% of first-time graduate students were in doctoral programs. In particular, Saudi Arabia’s figure was a stark contrast to degree objectives of Iranian nationals, nearly three-fourths (74%) of whom were first-time graduate enrollees in doctoral programs.

Not surprisingly, business (95%), public administration & services (86%), and mathematics & computer sciences (86%) fields had high concentrations of first-time international students in master’s and certificate programs in Fall 2016. In contrast, doctoral first-time students accounted for 80% of enrollees in physical & earth sciences and 53% in biological & agricultural sciences (see Figure 4). This pattern in fields of study largely mirrors that found for all first-time graduate students, including U.S. citizens & permanent residents, in Fall 2015 (Okahana, Feaster, & Allum, 2016).

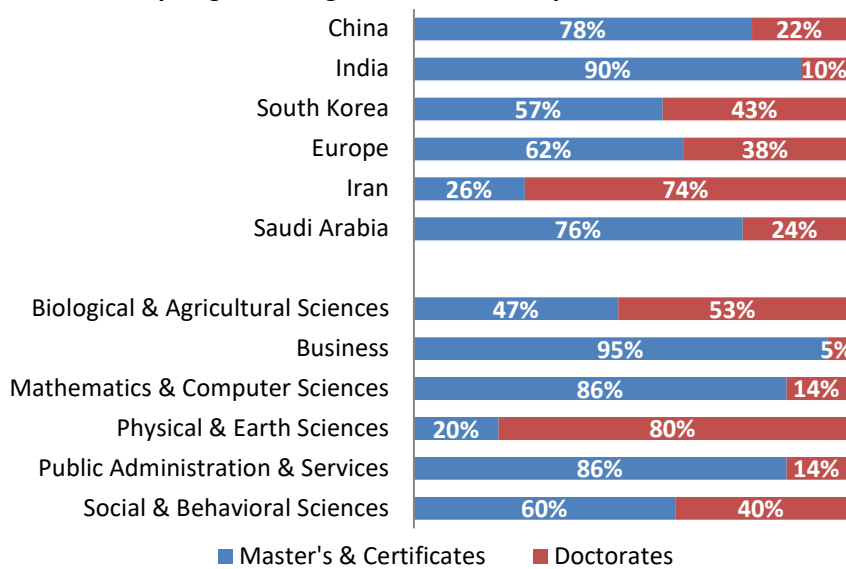
While nearly three-quarters of first-time master’s and certificate students were in engineering (25%), business (25%), or mathematics & computer sciences (22%) fields, doctoral students were spread across a more diverse range of disciplines. Engineering (29%) continues to lead all other fields in terms of first-time doctoral enrollment; however, four fields: physical & earth sciences (13%), mathematics & computer sciences (12%), biological & agricultural sciences (11%), and social & behavioral sciences (11%) also have sizeable numbers of first-time doctoral students (see Figure 5).

Total Enrollment

While Chinese nationals constituted the largest share (32%) of international graduate students overall, Indian graduate students continued to comprise the largest share (38%) of international master’s and certificate students, (see [Appendix Table A.7](#)). Engineering fields lead other fields of study by a substantial margin with respect to total enrollment, just as they did with respect to application counts, offers of admission, and first-time enrollment. Approximately three out of ten

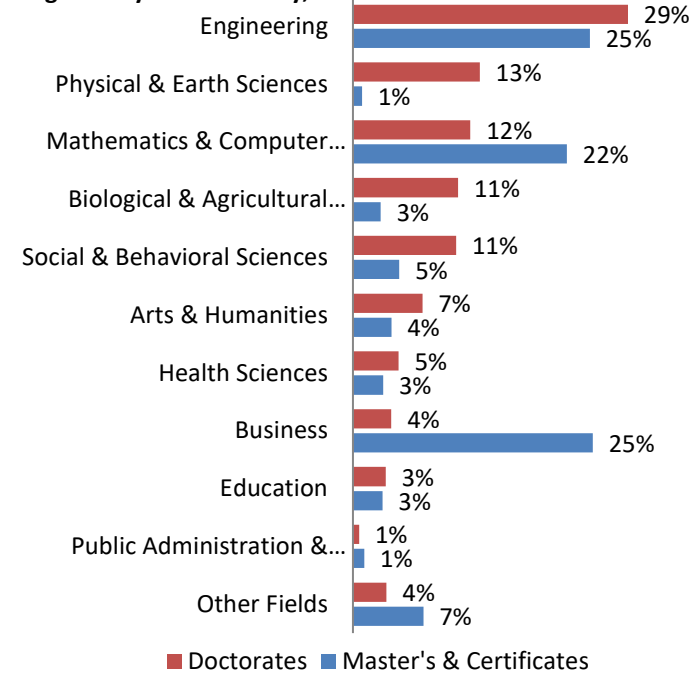
international graduate students—both master’s and certificate students (29%) and doctoral students (32%)—enrolled in an engineering field (see [Appendix Table A.8](#)).

Figure 4. Degree Objectives of First-time International Graduate Students by Selected Country/Region of Origin and Field of Study, Fall 2016



Data Source: Council of Graduate Schools, *International Graduate Applications and Enrollment, Fall 2016*, Appendix Tables A.5 & A.6

Figure 5. Distribution of First-time International Graduate Enrollment for Doctoral Programs and Master's & Certificate Programs by Field of Study, Fall 2016



Data Source: Council of Graduate Schools, International Graduate Applications and Enrollment, Fall 2016, Appendix Table A.6

cycles. In contrast, graduate applications from Indian students declined by -1%. Saudi Arabia had healthy growth in its graduate application counts between the Fall 2014 and Fall 2015 admission cycles but reported a significant decline in the application numbers, falling by -20% between Fall 2015 and Fall 2016.

By field of study, business fields (8%) have grown substantially, while engineering fields reported a decline of -3% (see [Appendix Table B.1](#) and [Appendix Table B.2](#)).

First-time Enrollment

Compared to Fall 2015, first-time international graduate enrollment in Fall 2016 increased by 5%. This rate of growth is on par with the prior cycle, which was the slowest growth rate in recent Fall terms.

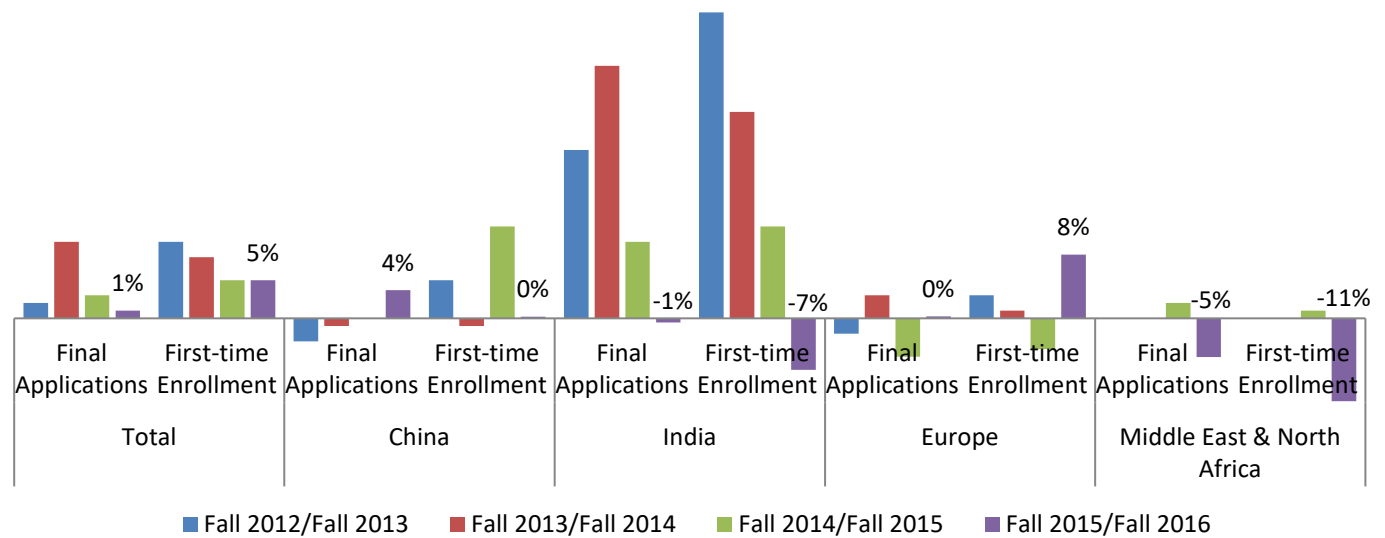
Changes in Total Applications and First-time Enrollment between Fall 2015 and Fall 2016

Total Applications

The growth rate of total international graduate applications between Fall 2015 and Fall 2016 admission cycles was slower than that of the previous year. The number of total international graduate applications increased by 1% between Fall 2015 and Fall 2016, compared to a 3% growth reported in the previous admission cycle. Applications from Brazilian prospective graduate students continued to decline (-11%). In addition, applications from Middle Eastern & North African prospective graduate students (-5%) and South Korean prospective graduate students (-5%) declined substantially. The number of applications from prospective Chinese graduate students rose by 4%, their first increase in application counts since the 19% increase between the Fall 2011 and Fall 2012 admission

Two years of significant increases in the first-time graduate enrollment of Indian nationals were followed by a decline of -7% between Fall 2015 and Fall 2016. A similar trend was also observed for first-time international graduate enrollment in engineering, which saw a -3% decline between Fall 2015 and Fall 2016. Also, first-time graduate enrollment for Chinese nationals was consistent with last year. However, notable growths between Fall 2015 and Fall 2016 came from elsewhere. Both Taiwanese (14%) and South Korean (10%) first-time graduate enrollment saw robust growth, despite the slow or declining rate of change in the total applications. In addition, Europe (8%) and Oceania (7%) reported a healthy growth in first-time graduate enrollment, after a decline between Fall 2014 and Fall 2015. Also notably, first-time graduate enrollment of nationals from the Middle East & North Africa dropped by -11% with Saudi Arabian first-time graduate

Figure 6. Changes in Final International Graduate Applications & First-time Enrollment by Selected Country/Region of Origin, Fall 2012 to Fall 2016



Data Source: Council of Graduate Schools, International Graduate Applications and Enrollment, Fall 2016, Appendix Tables B.1 & A.3

enrollment declining by -13% between Fall 2015 and Fall 2016. (see [Appendix Table B.3](#) and [Appendix Table B.4](#)).

Summary and Conclusion

Nearly four hundred U.S. institutions that offer master’s and certificate and doctoral programs participated in the 2016 CGS International Graduate Admissions Survey. These institutions received over 830,000 applications for graduate admissions from international students, which generated nearly 240,000 offers of admission and about 92,500 first-time international graduate enrollments during the Fall 2016 admission cycle. Overall, the 1% rate of growth for international graduate applications and 5% rate of growth for international first-time enrollment were slower than recent admission cycles.

Just two admission cycles ago, international graduate enrollment drove much of the growth in first-time enrollment (Allum & Okahana, 2015), with approximately one-quarter of the incoming class in Fall 2016 from countries other than the

United States. International students are and will continue to be a significant part of U.S. graduate enrollment. However, we may be reaching at a point where we will see fewer surges of overall international graduate enrollment and observe more modest changes overtime.

Beyond this overall trend, there are several notable findings for specific regions and countries of origin that may reflect recent policy changes and developments. Between Fall 2015 and Fall 2016, first-time enrollment for European and Oceanian graduate students surged. This is an area of international graduate enrollment that will be closely monitored in the upcoming survey cycles.

Decline of both total applications and first-time graduate enrollment of nationals from the Middle East and North Africa region between Fall 2015 and Fall 2016 was also notable. Much of the decline is driven by decreases among Saudi Arabian students, likely in response to a recent change in the Kingdom’s scholarship policy. However, the rate of decline of Middle Eastern and North African countries other than Saudi

Arabia was also sizeable, at -10%. Although a one-year change does not constitute a trend, this decline, along with that of applications and first-time enrollment of Indian graduate students between Fall 2015 and Fall 2016, warrants additional attention.

A number of factors influence global academic mobility, such as limited home country higher education capacity, human capital needs, national scholarships, and growing nationalism (Baer, 2016). Politics and economics of both the United States and countries of origin for international graduate students, as well as U.S. immigration and visa policies all impact the competitiveness of U.S. universities in the global graduate education market.

Our long-standing view has been that U.S. master's and doctoral education offers a great value for individual students, and an opportunity for countries to invest in human capital (Okahana & Allum, 2015), as demonstrated by continued demand and participation of international graduate students at U.S. institutions. As a matter of public policy, we cannot afford to lose our standing and competitiveness to attract global talent to our graduate institutions (Council of Graduate Schools, 2016). Some international graduate students stay in the United States and help the United States meet workforce needs. For example, according to the National Science

Foundation (NSF), over seven out of ten doctoral recipients with temporary visas intended to stay in the United States after earning their degrees (NSF, 2016). Public policy should continue to encourage these talented individuals to pursue master's and doctoral degrees in the United States, and pave pathways for them to join and contribute to the U.S. workforce and economy.

Appendix Tables

Appendix Table A.1

Total International Graduate Applications by Region/Country of Origin, Fall 2016 Admission Cycle

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's &		Master's & Certificate	Doctorates
			Certificate	Doctorates		
Total	838,627	838,627	568,391	270,236	68%	32%
Asia	667,389	81%	86%	68%	73%	27%
<i>China</i>	320,486	38%	40%	35%	70%	30%
<i>India</i>	246,951	30%	38%	13%	86%	14%
<i>Japan</i>	4,650	1%	0%	1%	58%	42%
<i>South Korea</i>	31,846	4%	2%	8%	31%	69%
<i>Taiwan</i>	19,979	2%	2%	3%	62%	38%
Europe	39,807	5%	3%	9%	38%	62%
Latin America & Caribbean	25,438	3%	3%	4%	57%	43%
<i>Brazil</i>	5,074	1%	0%	1%	50%	50%
<i>Mexico</i>	5,209	1%	0%	1%	56%	44%
Middle East & North Africa	57,875	7%	4%	13%	42%	58%
<i>Iran</i>	26,484	3%	1%	8%	20%	80%
<i>Saudia Arabia</i>	17,918	2%	2%	2%	68%	32%
North America (Canada only)	11,960	1%	1%	2%	48%	52%
Oceania	2,520	0%	0%	0%	47%	53%
Sub-Saharan Africa	21,388	3%	2%	3%	65%	35%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.2

Total International Graduate Applications by Field of Study, Fall 2016 Admission Cycle

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's &		Master's & Certificate	Doctorates
			Certificate	Doctorates		
Total	838,627	838,627	568,391	270,236	68%	32%
Arts & Humanities	39,515	4%	4%	6%	55%	45%
Biological & Agricultural Sciences	46,488	5%	3%	11%	33%	67%
Business	128,564	17%	21%	6%	88%	12%
Education	18,136	2%	2%	2%	66%	34%
Engineering	259,823	30%	31%	28%	70%	30%
Health Sciences	27,505	3%	2%	3%	61%	39%
Mathematics & Computer Science	181,740	21%	26%	12%	82%	18%
Physical & Earth Sciences	42,379	5%	1%	13%	16%	84%
Public Administration & Services	7,026	1%	1%	0%	81%	19%
Social & Behavioral Sciences	65,353	7%	4%	15%	34%	66%
Other Fields	39,250	5%	6%	2%	85%	15%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.3

Offers of Admission to International Graduate Applicants by Region/Country of Origin, Fall 2016 Admission Cycle

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's & Certificate	Doctorates	Master's & Certificate	Doctorates
Total	239,828	239,828	196,893	42,935	82%	18%
Asia	189,143	81%	85%	65%	86%	14%
<i>China</i>	88,000	36%	36%	34%	83%	17%
<i>India</i>	74,994	34%	39%	12%	94%	6%
<i>Japan</i>	1,625	1%	1%	1%	79%	21%
<i>South Korea</i>	6,436	3%	2%	6%	57%	43%
<i>Taiwan</i>	4,670	2%	2%	2%	80%	20%
Europe	11,710	5%	4%	10%	62%	38%
Latin America & Caribbean	9,516	4%	4%	6%	76%	24%
<i>Brazil</i>	1,520	1%	1%	1%	69%	31%
<i>Mexico</i>	1,926	1%	1%	1%	76%	24%
Middle East & North Africa	13,080	6%	4%	13%	58%	42%
<i>Iran</i>	5,277	2%	1%	8%	36%	64%
<i>Saudia Arabia</i>	4,268	2%	2%	2%	78%	22%
North America (Canada only)	3,614	1%	1%	3%	68%	32%
Oceania	733	0%	0%	1%	67%	33%
Sub-Saharan Africa	6,473	3%	3%	3%	81%	19%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.4

Offers of Admission to International Graduate Applicants by Field of Study, Fall 2016 Admission Cycle

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's & Certificate	Doctorates	Master's & Certificate	Doctorates
Total	239,828	239,828	196,893	42,935	82%	18%
Arts & Humanities	10,224	4%	4%	6%	72%	28%
Biological & Agricultural Sciences	9,103	4%	2%	9%	55%	45%
Business	41,767	18%	22%	3%	97%	3%
Education	7,581	3%	3%	3%	80%	20%
Engineering	74,867	30%	30%	33%	80%	20%
Health Sciences	8,745	3%	3%	3%	78%	22%
Mathematics & Computer Sciences	51,143	21%	23%	14%	88%	12%
Physical & Earth Sciences	8,264	3%	1%	14%	21%	79%
Public Administration & Services	2,997	1%	1%	0%	92%	8%
Social & Behavioral Sciences	16,056	6%	5%	12%	65%	35%
Other Fields	15,604	7%	8%	3%	93%	7%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.5

First-time International Graduate Enrollment by Region/Country of Origin, Fall 2016

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's & Certificate	Doctorates	Master's & Certificate	Doctorates
Total	92,503	92,503	71,819	20,684	78%	22%
Asia	70,234	77%	80%	66%	80%	20%
<i>China</i>	32,748	36%	36%	34%	78%	22%
<i>India</i>	25,458	27%	32%	12%	90%	10%
<i>Japan</i>	704	1%	1%	1%	81%	19%
<i>South Korea</i>	3,088	4%	3%	6%	57%	43%
<i>Taiwan</i>	2,001	2%	2%	2%	77%	23%
Europe	5,855	7%	5%	11%	62%	38%
Latin America & Caribbean	5,038	6%	6%	7%	74%	26%
<i>Brazil</i>	824	1%	1%	1%	68%	32%
<i>Mexico</i>	1,002	1%	1%	1%	73%	27%
Middle East & North Africa	5,043	6%	4%	11%	55%	45%
<i>Iran</i>	1,539	2%	1%	6%	26%	74%
<i>Saudia Arabia</i>	1,848	2%	2%	2%	76%	24%
North America (Canada only)	1,745	2%	2%	3%	69%	31%
Oceania	417	0%	0%	1%	70%	30%
Sub-Saharan Africa	2,482	3%	3%	3%	75%	25%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.6

First-time International Graduate Enrollment by Field of Study, Fall 2016

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's & Certificate	Doctorates	Master's & Certificate	Doctorates
Total	92,503	92,503	71,819	20,684	78%	22%
Arts & Humanities	5,003	5%	4%	7%	65%	35%
Biological & Agricultural Sciences	4,853	5%	3%	11%	47%	53%
Business	18,511	20%	25%	4%	95%	5%
Education	4,061	3%	3%	3%	75%	25%
Engineering	25,475	26%	25%	29%	75%	25%
Health Sciences	4,639	4%	3%	5%	69%	31%
Mathematics & Computer Science	17,990	20%	22%	12%	86%	14%
Physical & Earth Sciences	3,817	4%	1%	13%	20%	80%
Public Administration & Services	1,114	1%	1%	1%	86%	14%
Social & Behavioral Sciences	6,403	6%	5%	11%	60%	40%
Other Fields	5,853	7%	7%	4%	88%	12%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.7

Total International Graduate Enrollment by Region/Country of Origin, Fall 2016

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's & Certificate	Doctorates	Master's & Certificate	
					Certificate	Doctorates
Total	283,496	283,496	171,856	111,640	61%	39%
Asia	199,468	74%	80%	64%	67%	33%
<i>China</i>	90,545	32%	32%	33%	61%	39%
<i>India</i>	71,888	28%	38%	12%	84%	16%
<i>Japan</i>	1,956	1%	1%	1%	63%	37%
<i>South Korea</i>	11,172	4%	2%	7%	37%	63%
<i>Taiwan</i>	6,276	2%	2%	3%	55%	45%
Europe	19,994	7%	5%	11%	41%	59%
Latin America & Caribbean	16,606	6%	6%	7%	57%	43%
<i>Brazil</i>	2,875	1%	1%	1%	46%	54%
<i>Mexico</i>	3,273	1%	1%	1%	58%	42%
Middle East & North Africa	21,999	8%	5%	12%	41%	59%
<i>Iran</i>	7,691	3%	1%	6%	18%	82%
<i>Saudia Arabia</i>	7,210	3%	3%	2%	65%	35%
North America (Canada only)	6,107	2%	2%	3%	51%	49%
Oceania	1,117	0%	0%	1%	46%	54%
Sub-Saharan Africa	7,155	2%	2%	3%	59%	41%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table A.8

Total International Graduate Enrollment by Field of Study, Fall 2016

	Total Counts	% Shares by Region/Country of Origin			% Shares by Degree Objective	
		Total	Master's & Certificate	Doctorates	Master's & Certificate	
					Certificate	Doctorates
Total	283,496	283,496	171,856	111,640	61%	39%
Arts & Humanities	17,009	6%	5%	7%	49%	51%
Biological & Agricultural Sciences	20,103	7%	3%	12%	29%	71%
Business	45,057	14%	21%	3%	91%	9%
Education	16,374	3%	3%	4%	57%	43%
Engineering	83,603	30%	29%	32%	57%	43%
Health Sciences	14,178	3%	3%	4%	56%	44%
Mathematics & Computer Science	51,554	18%	22%	12%	73%	27%
Physical & Earth Sciences	17,787	6%	1%	13%	13%	87%
Public Administration & Services	3,096	1%	1%	1%	76%	24%
Social & Behavioral Sciences	23,840	7%	5%	10%	41%	59%
Other Fields	15,919	5%	7%	3%	75%	25%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table B.1

Changes in Total International Graduate Applications by Region/Country of Origin, Fall 2012 to Fall 2013 Admission Cycles through Fall 2015 to Fall 2016 Admission Cycles

	Fall 2012 to Fall 2013	Fall 2013 to Fall 2014	Fall 2014 to Fall 2015	Fall 2015 to Fall 2016
Total	2%	10%	3%	1%
Asia	--	--	2%	2%
China	-3%	-1%	0%	4%
India	22%	33%	10%	-1%
Japan	--	--	--	--
South Korea	-15%	-5%	4%	-5%
Taiwan	-13%	0%	-1%	1%
Europe	-2%	3%	-5%	0%
Latin America & Caribbean	--	--	-1%	-3%
Brazil	25%	61%	-13%	-11%
Mexico	-8%	1%	9%	2%
Middle East & North Africa	--	--	2%	-5%
Iran	--	--	--	--
Saudi Arabia	--	--	8%	-20%
North America (Canada only)	-5%	1%	3%	-12%
Oceania	--	--	4%	-11%
Sub-Saharan Africa	--	--	7%	-9%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment and Okahana, H. and Allum, J. (2015). International graduate applications and enrollment: Fall 2015. Washington, DC Council of Graduate Schools.

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table B.2

Changes in Total International Graduate Applications by Field of Study, Fall 2012 to Fall 2013 Admission Cycles through Fall 2015 to Fall 2016 Admission Cycles

	Fall 2012 to Fall 2013	Fall 2013 to Fall 2014	Fall 2014 to Fall 2015	Fall 2015 to Fall 2016
Total	2%	10%	3%	1%
Arts & Humanities	1%	5%	1%	2%
Biological & Agricultural Sciences	--	--	2%	-5%
Business	1%	7%	2%	8%
Education	-2%	4%	4%	0%
Engineering	5%	12%	2%	-3%
Health Sciences	--	--	2%	-17%
Mathematics & Computer Science:	--	--	9%	5%
Physical & Earth Sciences	--	--	-1%	6%
Public Administration & Services	--	--	-5%	-7%
Social & Behavioral Sciences	--	--	-4%	-3%
Other Fields	5%	4%	5%	14%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment and Okahana, H. and Allum, J. (2015). International graduate applications and enrollment: Fall 2015. Washington, DC Council of Graduate Schools.

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table B.3

Changes in Total First-time International Graduate Enrollment by Region/Country of Origin, Fall 2012 to Fall 2013 Admission Cycles through Fall 2015 to Fall 2016

	Fall 2012 to Fall 2013	Fall 2013 to Fall 2014	Fall 2014 to Fall 2015	Fall 2015 to Fall 2016
Total	10%	8%	5%	5%
Asia	--	--	7%	8%
<i>China</i>	5%	-1%	12%	0%
<i>India</i>	40%	27%	12%	-7%
<i>Japan</i>	--	--	--	--
<i>South Korea</i>	-12%	-7%	5%	10%
<i>Taiwan</i>	-8%	-8%	2%	14%
Europe	3%	1%	-4%	8%
Latin America & Caribbean	--	--	-6%	5%
<i>Brazil</i>	17%	91%	-30%	-9%
<i>Mexico</i>	-2%	8%	6%	12%
Middle East & North Africa	--	--	1%	-11%
<i>Iran</i>	--	--	--	--
<i>Saudia Arabia</i>	--	--	5%	-13%
North America (Canada only)	3%	-1%	1%	-3%
Oceania	--	--	-9%	7%
Sub-Saharan Africa	--	--	9%	3%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment and Okahana, H. and Allum, J. (2015). International graduate applications and enrollment: Fall 2015. Washington, DC Council of Graduate Schools.

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Appendix Table B.4

Changes in Total First-time International Graduate Enrollment by Field of Study, Fall 2012 to Fall 2013 Admission Cycles through Fall 2015 to Fall 2016

	Fall 2012 to Fall 2013	Fall 2013 to Fall 2014	Fall 2014 to Fall 2015	Fall 2015 to Fall 2016
Total	10%	8%	5%	5%
Arts & Humanities	9%	3%	5%	6%
Biological & Agricultural Sciences	--	--	1%	2%
Business	6%	2%	2%	7%
Education	3%	-1%	0%	7%
Engineering	17%	11%	1%	-3%
Health Sciences	--	--	-5%	-14%
Mathematics & Computer Science:	--	--	11%	4%
Physical & Earth Sciences	--	--	6%	-3%
Public Administration & Services	--	--	4%	7%
Social & Behavioral Sciences	--	--	1%	9%
Other Fields	7%	2%	7%	11%

Data Source: 2016 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment and Okahana, H. and Allum, J. (2015). International graduate applications and enrollment: Fall 2015. Washington, DC Council of Graduate Schools.

NOTE: Not all responding institutions provided valid data for country/region of origin, field of study, or degree objectives.

Notes and Definitions

About the CGS International Graduate Admissions Survey

In 2004, the Council of Graduate Schools (CGS) launched an annual empirical examination of international graduate application, admission, and enrollment trends in response to member institutions' interest in changes in the enrollment of students from abroad seeking master's and doctoral degrees from U.S. colleges and universities. Broadly speaking, the survey is designed to capture information about application counts and offers of admission, as well as first-time and total graduate enrollment of international students for each fall admission cycle. For the purpose of this survey, an international student is defined as a person who was not a citizen, national, or permanent resident of the United States and was in this country on a student visa, or on a temporary basis, and does not have the legal right to remain indefinitely. Undocumented students, individuals with deferred action status, and refugees are not included in this definition of international students.

Beginning in the current admission cycle, Fall 2016, the survey was redesigned to collect data by degree objective (master's and graduate certificate vs. doctorate), and for all seven regions of origin, eight countries of origin, and all eleven broad fields of study. Additionally, beginning this survey cycle, the respondent pool was expanded to include institutions that were not CGS members but were members of the Conference of Southern Graduate Schools (CSGS), the Midwestern Association of Graduate Schools (MAGS), the Northeastern Association of Graduate Schools (NAGS), or the Western Association of Graduate Schools (WAGS). These changes were made to make the results more comprehensive, and to make them consistent with the CGS/GRE Survey of Graduate Enrollment & Degrees.

Data Collection

The 2016 CGS International Graduate Admissions Survey population consisted of 741 U.S. colleges and universities, 477 of which were CGS members as of January 2016, and 264 of which were not CGS members but were members of CSGS, MAGS, NAGS, or WAGS. Institutions were asked to report the number of total applications from and offers of admission to prospective international graduate students, as well as first-time and total international graduate enrollment for Fall 2016. The 2016 survey was administered between September 26 and October 31, 2016. A total of 392 institutions, or 53%, responded to the survey. While the response rate is less than in years past, this is largely due to the fact that the survey population was expanded this year to include CGS regional affiliates (e.g., CSGS, MAGS, NAGS, and WAGS members); and it nevertheless reflects the largest number of institutions responding to this survey since it was launched in 2004. The data collection instrument, along with survey instruction is available on the project website (<http://cgsnet.org/international-graduate-admissions-survey>). Each completed data collection instrument submitted by participating institutions was then exported into four databases: total applications, offers of admission, first-time enrollment, and total enrollment.

Data Analysis Methods

Valid respondents for data analysis

Institutions providing data for the overall total count for international graduate students (i.e., sums of master's and certificate international students and doctoral international students) in respective sections of the survey (i.e., total applications, offers of admission, first-time enrollment, and total enrollment) were included in data analysis. This equated to 390 institutions for total applications with a reported total of 838,627 applications; 384 institutions for offers of admission with a reported total of 239,828 offers of admission; 391 institutions for first-time enrollment with a reported total of 92,503

first-time enrollments; and 387 institutions for total enrollment with a reported total of 283,496 total enrollments.

Appendix Table C.1 Characteristics of Institutions with Valid Responses for the First-time Enrollment

	Total	Public	Private, not-for-profit	Private, for-profit
All Institutions	100% 391	66%	34%	0%
<i>Research Universities (very high research activity)</i>	26% 101	79%	21%	0%
<i>Research Universities (high research activity)</i>	17% 68	44%	53%	3%
<i>Doctoral/Research Universities</i>	8% 32	67%	33%	0%
<i>Master's Colleges and Universities (larger programs)</i>	27% 107	59%	41%	0%
<i>Other Master's Colleges and Universities</i>	10% 39	48%	52%	0%
<i>All Other Institutions</i>	11% 44	64%	36%	0%

Data Source: 2015 CGS International Graduate Admissions Survey: Final Applications, Admissions, and Enrollment

The summary of institutional controls and Carnegie classifications of institutions with valid responses for the first-time enrollment section (N=391) is shown in Table C.1. Overall, two-thirds (66%) of responding institutions were public universities. Over one-third (37%) were master's colleges and universities, while the majority (51%) were research universities.

Additional data exclusion rules were applied for computations of percentage distributions of international students by regions/countries of origin and by fields of study, as well as by degree levels within specific regions/countries of origin or fields of study.

Percentage distributions of international students by regions/countries of origin

For each section of the survey, percentage distributions of master's degree & certificate students, doctoral students, and all students by regions/countries of origin were reported. The computations were based on the disaggregated data reported in regions/countries of origin sections of the data collection instrument, and only those institutions that reported complete data for the respective section were included in the computation. The sum of all six regions and Canada in this section served as the denominator, or 100%. Only institutions with the reported total counts in master's & certificates and doctorates columns matched with calculated totals of all six regions and Canada respectively were included in this calculation. Due to missing values, these sums may be smaller than the total counts reported as the totals of valid respondents noted earlier.

Percentage distributions of international students by fields of study

For each section of the survey, percentage distributions of master's degree & certificate students, doctoral students, and all students by fields of study were reported. The computations were based on the disaggregated data reported in the fields of study section of the data collection instrument, and only those institutions that reported complete data for the respective section were included in the

computation. The sum of all 11 fields of study in this section served as the denominator, or 100%. Only institutions with the reported total counts in master's & certificates and doctorates columns matched with calculated totals of all eleven fields of study respectively were included in this calculation. Due to missing values, these sums may be smaller than the total counts reported as the totals of valid respondents noted earlier.

Percentage distributions of international students by degree-levels within particular regions/countries of origin

Percentage distributions of international students by degree-levels (i.e., master's and certificate students v. doctoral students) were computed for each region/country of origin. Calculated sums for master's and certificate students and doctoral students for each category (e.g., Asia, India, etc.) served as the denominator, or 100%. Due to missing values, these sums may be smaller than the total counts reported as the totals of valid respondents noted earlier.

Percentage distributions of international students by degree-levels within particular fields of study

Percentage distributions of international students by degree-levels (i.e., master's and certificate students v. doctoral students) were computed for each field of study. Calculated sums for master's and certificate students and doctoral students for each category (e.g., business, engineering, etc.) served as the denominator, or 100%. Due to missing values, these sums may be smaller than the total counts reported as the totals of valid respondents noted earlier.

Changes between Fall 2015 and Fall 2016

Changes between Fall 2015 and Fall 2016 are expressed as percentage differences, and only those institutions that reported valid data for both admission cycles were included in the computation. Fall 2015 data was drawn from the CGS International Graduate Admissions Survey, Fall 2015.

Definitions

Countries and Regions of Origin

The survey collected data on eight countries of origin, including: Brazil, Canada, China, India, Mexico, Saudi Arabia, Republic of Korea (South Korea), and Taiwan. These eight countries were selected because they represent the top countries of origin for international graduate students in the United States, or for other geopolitical reasons. The survey also collected data from all seven regions of the world: Asia, Europe, Latin America & Caribbean, Middle East & North Africa, North America (for the purpose of this study, North America includes only Canada), Oceania, and Sub-Saharan Africa. Specific definitions are listed below:

Asia includes: Afghanistan, Bangladesh, Bhutan, Brunei, Burma (Myanmar), Cambodia, China, East Timor, Hong Kong, India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Laos, Macau, Malaysia, Maldives, Mongolia, Nepal, Pakistan, People's Democratic Republic of Korea (North Korea), Philippines, Republic of Korea (South Korea), Singapore, Sri Lanka, Taiwan, Tajikistan, Thailand, Turkmenistan, Uzbekistan, and Vietnam.

For the purpose of this survey, China refers to the People's Republic of China and excludes Hong Kong, Macau, Taiwan, etc.

Europe includes: Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia,

Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and Vatican City (Holy See).

Latin America & Caribbean includes: Anguilla, Antigua and Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, British Virgin Islands, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Curacao, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Sint Maarten, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad & Tobago, Turks and Caicos Islands, Uruguay, and Venezuela.

Middle East & North Africa includes: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestinian Territories, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, and Yemen.

Oceania includes: Australia, Cook Islands, Fiji, French Polynesia, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Wallis & Futuna.

Sub-Saharan Africa includes: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Cote d'Ivoire (Ivory Coast), Democratic Republic of Congo (Kinshasa, Republic of Congo), Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo (Brazzaville), Rwanda, Saint Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

Carnegie Classification

Institutions were coded according to their 2010 Carnegie basic classification. In the analysis of applications by Carnegie classification, the 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. The 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 institutions. Responding institutions classified as specialized or baccalaureate institutions were excluded from many analyses due to the small number of applications reported by these institutions.

Taxonomy

The survey collected data for all 11 broad fields of study, including: arts & humanities, biological & agricultural sciences, business, education, engineering, health sciences, mathematics & computer sciences, physical & earth sciences, public administration & services, social & behavioral sciences, and other fields. These are the same fields of study as used by the CGS/GRE Survey of Graduate Enrollment & Degrees. The detailed taxonomy is available on the project website (<http://cgsnet.org/international-graduate-admissions-survey>).

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Disclaimer

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