Assessing the Impact of Frame Changes on Trend Data from the Survey of Graduate Students and Postdoctorates in Science and Engineering

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CONTENTS

EXECUTIVE SUMMARY

This special report examines the impact of changes in the frame of institutions for the Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS) based on frame evaluation research conducted during the past several survey cycles.

The GSS is an annual census of all academic institutions granting research-based master's degrees or doctorates in science, engineering, and selected health (SEH) fields in the United States. In 2010, the National Center for Science and Engineering Statistics (NCSES) at the National Science Foundation (NSF) initiated a comprehensive frame evaluation study for the GSS for the first time since 1979. This study sought to identify and survey any potentially eligible but not previously surveyed institutions.[1] The study initially identified 605 potentially eligible institutions, which were contacted for the GSS Eligibility Screening Survey in 2011.

The 2011 Eligibility Screening Survey identified 165 newly eligible institutions with at least one master's- or doctorate-granting program in science, engineering, or health. After collecting and assessing the quality of the data from the newly eligible institutions, NCSES decided more time was needed to thoroughly verify the degree program eligibility and to improve the data reporting quality from these institutions before including them in the GSS data. Over the next two cycles, 25 of these institutions were determined to be ineligible, leaving 140 eligible institutions at the end of the 2013 GSS cycle.

This analysis examines the impact of expanding the GSS frame to include these 140 new institutions on key GSS counts and trends.[2] In particular, this analysis looks at institutional characteristics and characteristics of graduate students, postdoctoral appointees (postdocs), and other doctorate-holding nonfaculty researchers (NFRs).

In general, this analysis shows that adding these new institutions will have limited impact on overall counts and trends in the GSS. Key findings include:

- The frame expansion is expected to increase SEH graduate enrollment reported in the GSS by approximately 3%.
- Percentage point changes in the distribution of graduate students across most key dimensions collected by the GSS typically should be less than half of a percentage point.
- The impact on postdoc and NFR trends will be smaller than those related to graduate student counts because relatively few postdocs and NFRs are employed by the new institutions.
- New institutions have fewer GSS-eligible SEH units (academic departments, programs, research centers, or health care facilities) than previously eligible institutions.
- Compared with previously eligible institutions, new institutions have larger proportions of computer science and psychology units and fewer in engineering and health.
- Larger proportions of graduate students in new institutions are self-supported, enrolled part time, and are women, minorities, and U.S. citizens or permanent residents than in previously eligible GSS institutions.

INTRODUCTION

The Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS) is an annual census of all U.S. academic institutions granting research-based master's degrees or doctorates in science, engineering, and selected health (SEH) fields. The survey, sponsored by the National Center for Science and Engineering Statistics (NCSES) at the National Science Foundation (NSF) and by the National Institutes of Health, collects the total number of graduate students, postdoctoral appointees (postdocs), and doctorate-level nonfaculty researchers (NFRs) by demographic characteristics, fields of discipline, and sources of financial support. Results are used to assess shifts in graduate enrollment and postdoc appointments, as well as trends in financial support.

In 2010 NCSES conducted a comprehensive frame evaluation for the GSS. The study found 605 potentially eligible postsecondary academic institutions in the United States that were not previously surveyed in the GSS. NCSES in 2011conducted an eligibility screening survey of these institutions and identified 165 offering at least one master's- or doctorate-granting program in SEH. (See appendix A for more information).

After assessing the 2011 data reported by the newly identified institutions, NCSES decided more years of data were needed to verify the degree program eligibility and to work with the new institutions to improve their data reporting. Over the 2012 and 2013 survey cycles, 25 of the 165 newly identified institutions were confirmed as ineligible for the GSS and 140 confirmed as eligible.[3] The data from these institutions will be incorporated into the published GSS data beginning with the 2014 data release. In this special report, these 140 institutions are referred to as the *new frame* institutions, while the previously eligible institutions are designated as *core* institutions.

The eligibility of core institutions was also reviewed as part of this frame or coverage evaluation, and two for-profit core institutions offering mostly practitioner-oriented graduate degrees were determined to be ineligible.[4]

The analyses in this special report are primarily based on the 2013 GSS data, though several analyses use trend data from 1972 to 2013 to show the estimated impact of the survey frame changes on longer-term trends. This report begins with an examination of the differences in institutional and graduate student characteristics by new frame and core institution status, with a focus on the percentage point change in the estimates resulting from the inclusion of the new frame institutions. Additional analyses focus on the clustering of new frame institution students within a few disciplines and how total estimates of graduate students, postdocs, and NFRs will change when new frame institution data are included in the 2014 GSS and beyond. Field-level and demographic differences between graduate students enrolled in eligible SEH units (academic departments, programs, research centers, or health care facilities) at new frame and core institutions are also examined. This is followed by an analysis concerning the removal of the two for-profit institutions from the frame. The final section highlights the overall changes and new composition of the GSS data.

IMPACT OF INCLUDING THE NEW FRAME INSTITUTIONS ON GSS TRENDS

In 2013, the new frame institutions enrolled 20,772 SEH graduate students, representing 3.3% of the 653,782 SEH graduate students in the United States in the core and new frame institutions (table 1). Incorporating the new frame institutions in the 2013 GSS results in marginal increases in the overall counts, and the new trend lines roughly parallel the old trend lines (figures 1 and 2).

TABLE 1. Changes in the estimates of graduate student characteristics, postdocs, and NFRs due to adding new frame institutions: 2013

	Count				Percent distribution			
Characteristics	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All graduate students	20,772	633,010	653,782	3.3	100.0	100.0	100.0	-
Full-time	9,529	468,953	478,482	2.0	45.9	74.1	73.2	-0.9
Part-time	11,243	164,057	175,300	6.9	54.1	25.9	26.8	0.9
Female	11,174	291,380	302,554	3.8	53.8	46.0	46.3	0.2
Male	9,598	341,630	351,228	2.8	46.2	54.0	53.7	-0.2
Total postdocs	1,048	61,942	62,990	1.7	100.0	100.0	100.0	-
Total NFRs	343	22,465	22,808	1.5	100.0	100.0	100.0	-

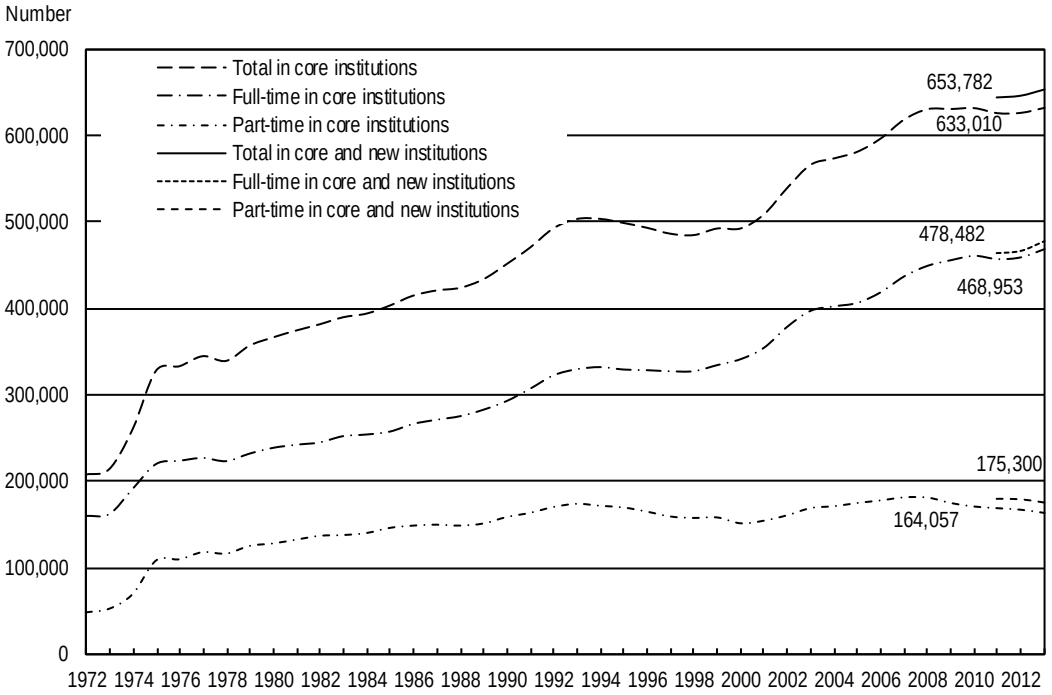
- = no value possible.

NFR = other doctorate-holding nonfaculty researcher; Postdoc = Postdoctoral appointees.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

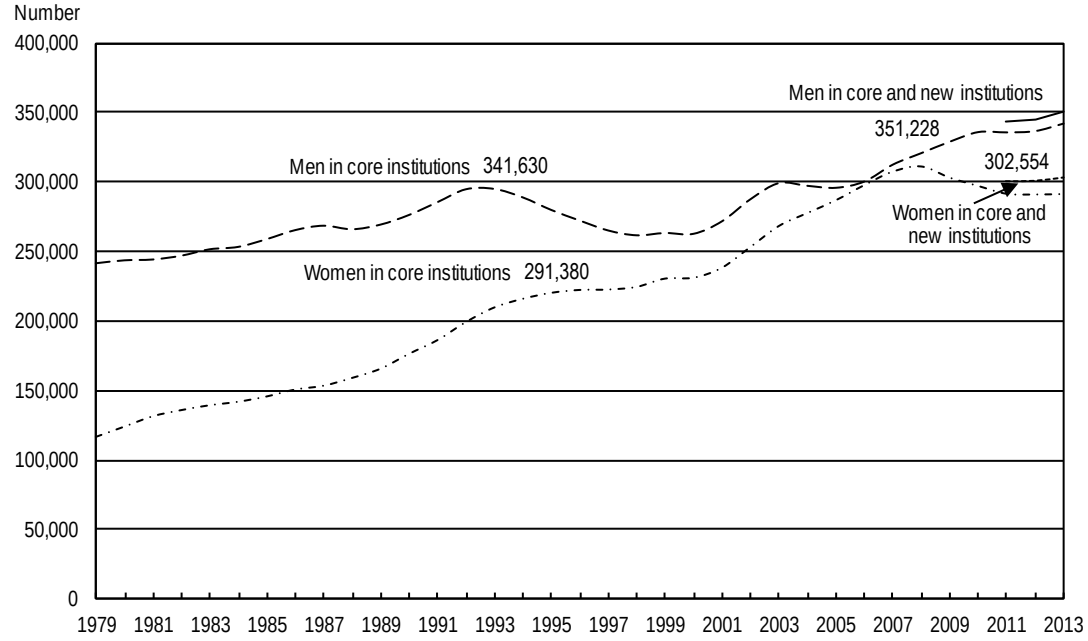
SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

FIGURE 1. Graduate students in science, engineering, and health with and without new frame institutions: 1972–2013



SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

FIGURE 2. Female and male graduate students in science, engineering, and health with and without new frame institutions: 1979–2013



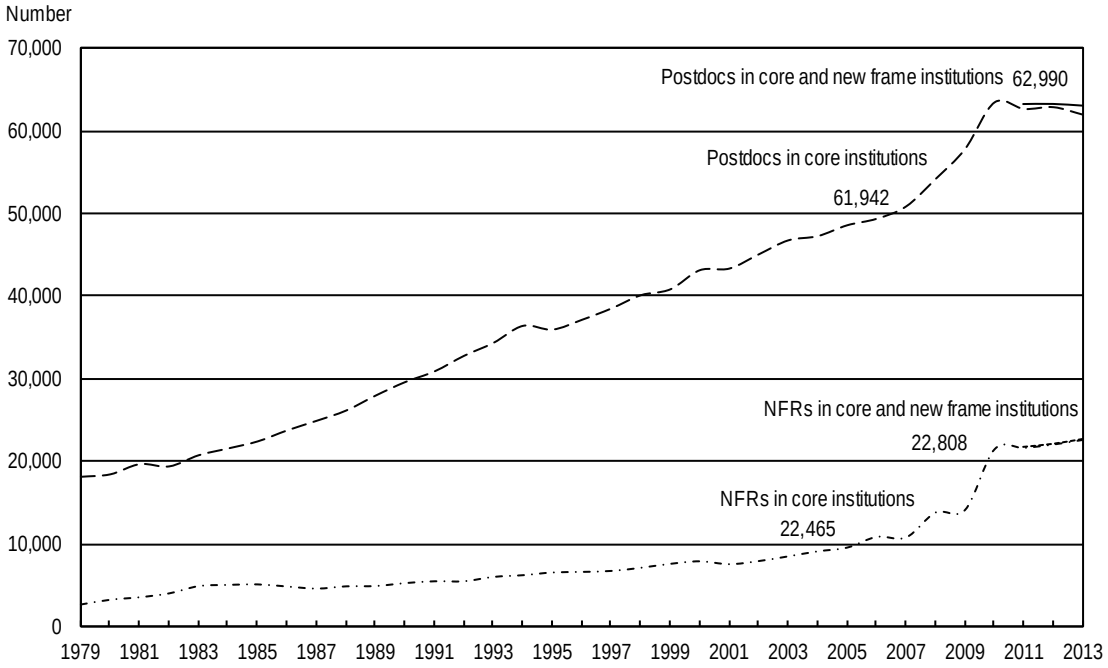
SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

The new frame institutions would add 11,243 part-time graduate students and 9,529 full-time graduate students to the 2013 GSS data (table 1). Including these students increases the total number of part-time students by 6.9% and the total number of full-time students by 2.0%. Including the new frame institutions in the 2013 GSS data results in a 0.9 percentage point increase in the proportion of all graduate students enrolled part time.[5] It also adds 3.8% more women and 2.8% men to the SEH graduate student population over the 2013 data. As with the part- and full-time graduate students, the changes in the trend lines for women and men as a result of adding the new frame institutions to the 2013 GSS data are noticeable but relatively small (figures 1 and 2).

The new frame institutions employ relatively few postdocs and NFRs. Thus the inclusion of new frame institutions in the 2013 GSS data would have almost no change on the trend lines for these categories (figure 3). In 2013, there were 1,048 postdocs in new frame institutions, adding only 1.7% more postdocs over the 61,942 in the core institutions (table 1). NFRs in new frame institutions account for 1.5% of the total 22,808 NFRs reported in 2013. Because the new frame institutions will not have much impact on the GSS postdoc or NFR data, this report focuses mainly on graduate students.

Finally, though the overall impacts are fairly small, core and new frame institutions have some notable differences in their characteristics, as do their respective graduate students, postdocs, and NFRs (figure 4). These distinctions are detailed in the sections that follow.

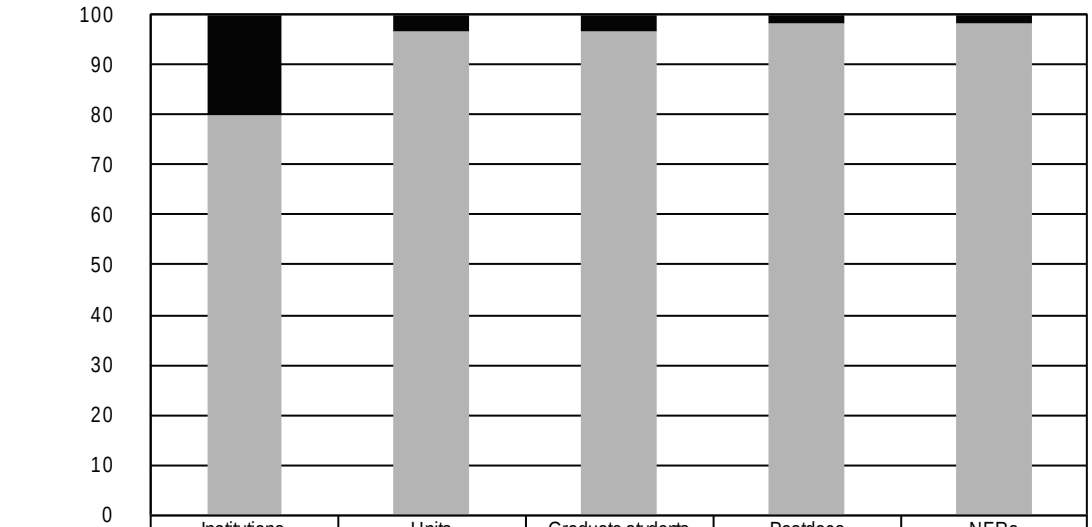
FIGURE 3. Postdocs and NFRs in science, engineering, and health with and without new frame institutions: 1979–2013



NFR = other doctorate-level nonfaculty researcher; Postdoc = Postdoctoral appointees.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

FIGURE 4. Number and percent of institutions, units, graduate students, postdocs and NFRs in core and new frame institutions: 2013



	Institutions	Units	Graduate students	Postdocs	NFRs
New frame	140	424	20,772	1,048	343
Core	563	13,352	633,010	61,942	22,465

NFR = other doctorate-level nonfaculty researcher; Postdoc = Postdoctoral appointees.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

COMPARING CORE AND NEW FRAME INSTITUTIONS

Key differences between core and new frame institutions include institutional control, Carnegie Classification, the number and type of GSS-eligible graduate degree programs offered, and the number of graduate students in those programs. The first step in determining the differences between the new frame and core institutions is to look at institutional characteristics and types of units, shown in table 2.

TABLE 2. Changes in the GSS institution and organizational unit characteristics due to adding newly eligible institutions in the survey frame: 2013

	Count				Percent distribution			
Characteristics	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All institutions	140	563	703	24.9	100.0	100.0	100.0	-
Institutional control								
Public	54	359	413	15.0	38.6	63.8	58.7	-5.0
Private, nonprofit	86	202	288	42.6	61.4	35.9	41.0	5.1
Private, for-profit	0	2	2	0.0	0.0	0.4	0.3	-0.1
Carnegie classification								
Research universities	0	204	204	0.0	0.0	36.2	29.0	-7.2
Other doctoral universities	7	58	65	12.1	5.0	10.3	9.2	-1.1
Master's colleges and universities	89	227	316	39.2	63.6	40.3	45.0	4.7
All others, including unknown	44	74	118	59.5	31.4	13.1	16.8	3.7
Graduate students, postdocs, and NFRs[b]								
Institutions with graduate students	135	558	693	24.2	96.4	99.1	98.6	-0.5
Institutions with postdocs	15	319	334	4.7	10.7	56.7	47.5	-9.2
Institutions with NFRs	14	242	256	5.8	10.0	43.0	36.4	-6.6
Institutions with postdocs and NFRs	18	323	341	5.6	12.9	57.4	48.5	-8.9
Units[b]								
Total units	424	13,352	13,776	3.2	100.0	100.0	100.0	-
Mean units per institution	3	23.7	19.6	-	-	-	-	-
Units with graduate students	397	10,722	11,119	3.7	93.6	80.3	80.7	0.4
Units with postdocs	42	5,907	5,949	0.7	9.9	44.2	43.2	-1.1
Units with NFRs	34	3,741	3,775	0.9	8.0	28.0	27.4	-0.6
Science[c]	346	8,831	9,177	3.9	81.6	66.1	66.6	0.5
Social sciences	73	1,993	2,066	3.7	17.2	14.9	15.0	0.1
Biological sciences	72	2,442	2,514	2.9	17.0	18.3	18.2	0.0
Computer sciences	48	531	579	9.0	11.3	4.0	4.2	0.2
Psychology	48	825	873	5.8	11.3	6.2	6.3	0.2
Agricultural sciences	25	481	506	5.2	5.9	3.6	3.7	0.1
Mathematical sciences	20	511	531	3.9	4.7	3.8	3.9	0.0
Multidisciplinary/interdisciplinary studies	17	338	355	5.0	4.0	2.5	2.6	0.0
Communication	16	247	263	6.5	3.8	1.8	1.9	0.1
Physical sciences	11	728	739	1.5	2.6	5.5	5.4	-0.1
Earth, atmospheric, and oceanic sciences	11	445	456	2.5	2.6	3.3	3.3	0.0
Neuroscience	3	182	185	1.6	0.7	1.4	1.3	0.0
Family and consumer sciences	2	108	110	1.9	0.5	0.8	0.8	0.0
Engineering	27	1,968	1,995	1.4	6.4	14.7	14.5	-0.3
Health	51	2,553	2,604	2.0	12.0	19.1	18.9	-0.2

- = no value possible.

NFR = other doctorate-holding nonfaculty researcher; Postdocs = Postdoctoral appointees.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Categories are not mutually exclusive.

[c] Major science subfields ordered by frequency of units within the new frame institutions.

NOTE: Details may not add to total due to rounding.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

As of 2013, there were 140 new frame institutions, compared to 563 core institutions.[6] Of the new frame institutions, 61.4% were private nonprofit, compared to 38.6% of core institutions. The new frame institutions will lead to a 5.1 percentage point increase in the overall percentage of private nonprofit institutions in the GSS. Whereas 36.2% of core institutions are doctoral research universities, there are no new frame institutions in this category. A majority (63.6%) of new frame institutions are classified as master's-granting colleges and universities, compared to 40.3% of core institutions.

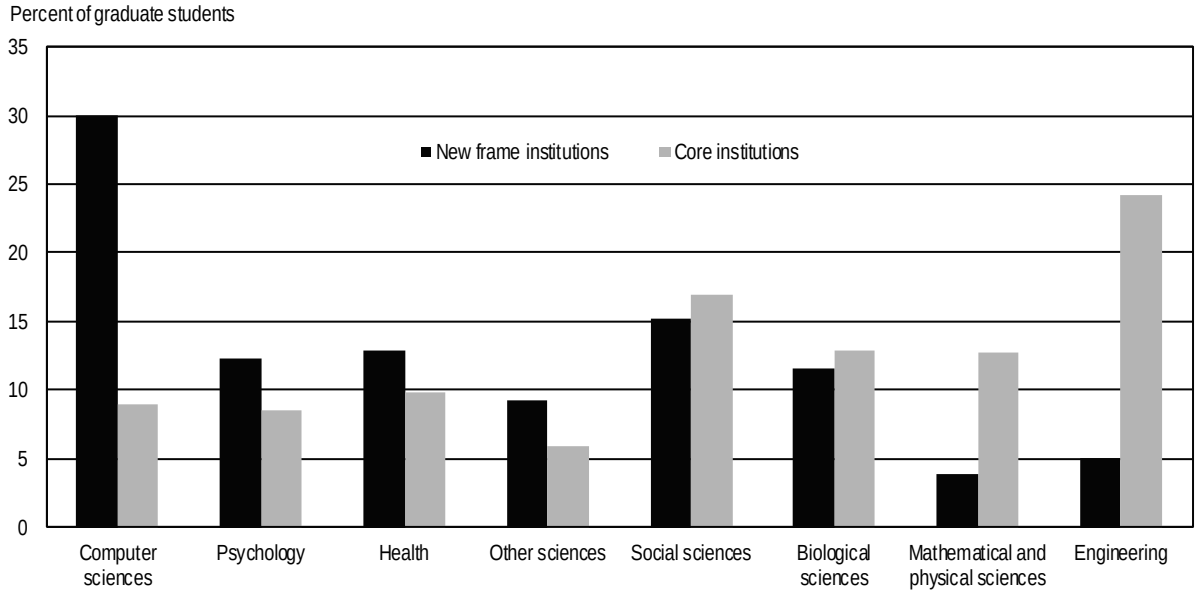
The mean number of eligible units per institution and the type of units reported by institution also vary substantially between core and new frame institutions. New frame institutions typically have only a few eligible SEH units, and only 1 in 10 units in new frame institutions reports having postdocs or NFRs (table 2). In 2013, the average core institution contained 23.7 eligible units, whereas the average new frame institution contained 3.0 eligible units. Almost all (93.6%) units in new frame institutions enrolled graduate students, but only 9.9% employed postdocs and 8.0% employed NFRs. In comparison, 80.3% of core institutions in 2013 reported graduate students, 44.2% employed postdocs, and 28.0% employed NFRs. These differences indicate that including the new frame institutions in GSS will improve the coverage of smaller research programs and diversify the survey universe.

The types of units found in new frame and core institutions also differ by field. New frame institutions have more units than core institutions in computer sciences (11.3% versus 4.0%) and psychology (11.3% versus 6.2%). The opposite is true for engineering (6.4% versus 14.7%) and health (12.0% versus 19.1%).

GRADUATE STUDENT ENROLLMENT IN GRADUATE DEGREE FIELDS

In 2013, the addition of the new frame institutions would have substantially increased graduate enrollment in multidisciplinary/interdisciplinary studies (11.5%), computer sciences (11.1%), communication (5.9%), psychology (4.7%), and health (4.3%). (See figure 5 and table 3.)[7] Determining the eligibility of students and units in these fields is often challenging because of the professional orientation of many of these degree programs.

FIGURE 5. Percent distribution of graduate students in core and new frame institutions, by selected field: 2013



SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE 3. Changes in the graduate student estimates due to adding new frame institutions, by field: 2013

Field	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All graduate students	20,772	633,010	653,782	3.3	100.0	100.0	100.0	-
Science[b]	17,048	417,251	434,299	4.1	82.1	65.9	66.4	0.5
Computer sciences	6,226	56,339	62,565	11.1	30.0	8.9	9.6	0.7
Social sciences	3,155	107,278	110,433	2.9	15.2	16.9	16.9	-0.1
Psychology	2,554	54,102	56,656	4.7	12.3	8.5	8.7	0.1
Biological sciences	2,412	76,649	79,061	3.1	11.6	12.1	12.1	0.0
Multidisciplinary/interdisciplinary studies	675	5,892	6,567	11.5	3.2	0.9	1.0	0.1
Communication	661	11,114	11,775	5.9	3.2	1.8	1.8	0.0
Agricultural sciences	519	16,429	16,948	3.2	2.5	2.6	2.6	0.0
Mathematical sciences	378	24,804	25,182	1.5	1.8	3.9	3.9	-0.1
Earth, atmospheric, and ocean sciences	278	15,816	16,094	1.8	1.3	2.5	2.5	0.0
Physical sciences	136	40,019	40,155	0.3	0.7	6.3	6.1	-0.2
Family and consumer sciences and human sciences	54	4,014	4,068	1.3	0.3	0.6	0.6	0.0
Neuroscience	0	4,795	4,795	0.0	0.0	0.8	0.7	0.0
Engineering	1,033	153,049	154,082	0.7	5.0	24.2	23.6	-0.6
Health	2,691	62,710	65,401	4.3	13.0	9.9	10.0	0.1

- = no value possible.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Major science subfields ordered by number of graduate students within the new frame institutions.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

Almost one-third (30.0%) of graduate students enrolled at new frame institutions in 2013 were enrolled in computer sciences; however, more than half of these students (54.4%) were enrolled in a single degree program at the University of Maryland, University College (UMUC) (table 3 and appendix table B-3). Consequently, this UMUC program, which offers online master's and doctorate degrees, more distinctly influences the GSS estimates than other new frame units.[8] Almost all (98.2%) of the UMUC computer science graduate students were enrolled part time. Compared to students at other frame units and institutions, they were disproportionately U.S. citizens and permanent residents (98.6% versus 84.1%) and black or African American (33.9% versus 13.7%). Overall, the inclusion of the new frame institutions in 2013 would have led to a 0.7 percentage point increase in the proportion of graduate students in computer sciences (table 3).

By contrast, only 5.0% of graduate students in new frame institutions were enrolled in engineering in 2013, compared to 24.2% of students in core institutions. Though the graduate students from new frame institutions in these five fields show larger-than-average increases, their effect on the overall change in these fields is minimal.

GRADUATE STUDENT CHARACTERISTICS

Graduate students enrolled in new frame and core institutions in 2013 differed by enrollment status, demographic characteristics, and financial support. Larger proportions of graduate students in new frame institutions enrolled part time; were women; U.S. citizens or permanent residents; ethnic or racial minorities; and self-funded their graduate education (tables 4 and 5, figures 6 and 7).[9]

TABLE 4. Changes in the graduate student estimates due to adding new frame institutions, by enrollment, sex, citizenship, ethnicity, and race: 2013

Characteristics	New frame institutions			Core institutions			All institutions	
	Total	Full-time	Part-time	Total	Full-time	Part-time		Percent change
	Count							
All graduate students	20,772	9,529	11,243	633,010	468,953	164,057	653,782	3.3
U.S. citizens and permanent residents[b]	17,957	7,419	10,538	436,296	294,147	142,149	454,253	4.1
Hispanic or Latino	2,363	1,167	1,196	37,283	24,549	12,734	39,646	6.3
Not Hispanic or Latino								
American Indian or Alaska Native	130	65	65	2,517	1,650	867	2,647	5.2
Asian	1,045	464	581	37,137	26,128	11,009	38,182	2.8
Black or African American	3,534	1,118	2,416	37,197	21,307	15,890	40,731	9.5
Native Hawaiian or Other Pacific Islander	39	15	24	1,037	646	391	1,076	3.8
White	8,696	3,802	4,894	281,354	194,094	87,260	290,050	3.1
More than one race	447	213	234	9,160	6,518	2,642	9,607	4.9
Unknown race and ethnicity	1,703	575	1,128	30,611	19,255	11,356	32,314	5.6
Temporary visa holders	2,815	2,110	705	196,714	174,806	21,908	199,529	1.4
Female	11,174	5,516	5,658	291,380	213,011	78,369	302,554	3.8
U.S. citizens and permanent residents[b]	9,984	4,672	5,312	220,623	150,341	70,282	230,607	4.5
Hispanic or Latino	1,401	735	666	20,190	13,545	6,645	21,591	6.9
Not Hispanic or Latino								
American Indian or Alaska Native	89	48	41	1,415	911	504	1,504	6.3
Asian	494	259	235	17,738	12,824	4,914	18,232	2.8
Black or African American	1,985	730	1,255	23,359	13,426	9,933	25,344	8.5
Native Hawaiian or Other Pacific Islander	17	9	8	585	394	191	602	2.9
White	4,765	2,388	2,377	137,274	95,903	41,371	142,039	3.5
More than one race	255	145	110	5,067	3,632	1,435	5,322	5.0
Unknown race and ethnicity	978	358	620	14,995	9,706	5,289	15,973	6.5
Temporary visa holders	1,190	844	346	70,757	62,670	8,087	71,947	1.7
Male	9,598	4,013	5,585	341,630	255,942	85,688	351,228	2.8
U.S. citizens and permanent residents[b]	7,973	2,747	5,226	215,673	143,806	71,867	223,646	3.7
Hispanic or Latino	962	432	530	17,093	11,004	6,089	18,055	5.6
Not Hispanic or Latino								
American Indian or Alaska Native	41	17	24	1,102	739	363	1,143	3.7
Asian	551	205	346	19,399	13,304	6,095	19,950	2.8
Black or African American	1,549	388	1,161	13,838	7,881	5,957	15,387	11.2
Native Hawaiian or Other Pacific Islander	22	6	16	452	252	200	474	4.9
White	3,931	1,414	2,517	144,080	98,191	45,889	148,011	2.7
More than one race	192	68	124	4,093	2,886	1,207	4,285	4.7
Unknown race and ethnicity	725	217	508	15,616	9,549	6,067	16,341	4.6
Temporary visa holders	1,625	1,266	359	125,957	112,136	13,821	127,582	1.3

TABLE 4. Changes in the graduate student estimates due to adding new frame institutions, by enrollment, sex, citizenship, ethnicity, and race: 2013

Characteristics	New frame institutions			Core institutions			All institutions	
	Total	Full-time	Part-time	Total	Full-time	Part-time		Percentage point change[a]
	Percent distribution							
All graduate students	100.0	45.9	54.1	100.0	74.1	25.9	100.0	–
U.S. citizens and permanent residents[b]	86.4	41.3	58.7	68.9	67.4	32.6	69.5	0.6
Hispanic or Latino	13.2	49.4	50.6	8.5	65.8	34.2	8.7	0.2
Not Hispanic or Latino								
American Indian or Alaska Native	0.7	50.0	50.0	0.6	65.6	34.4	0.6	0.0
Asian	5.8	44.4	55.6	8.5	70.4	29.6	8.4	-0.1
Black or African American	19.7	31.6	68.4	8.5	57.3	42.7	9.0	0.4
Native Hawaiian or Other Pacific Islander	0.2	38.5	61.5	0.2	62.3	37.7	0.2	0.0
White	48.4	43.7	56.3	64.5	69.0	31.0	63.9	-0.6
More than one race	2.5	47.7	52.3	2.1	71.2	28.8	2.1	0.0
Unknown race and ethnicity	9.5	33.8	66.2	7.0	62.9	37.1	7.1	0.1
Temporary visa holders	13.6	75.0	25.0	31.1	88.9	11.1	30.5	-0.6
Female	53.8	49.4	50.6	46.0	73.1	26.9	46.3	0.2
U.S. citizens and permanent residents[b]	89.4	46.8	53.2	75.7	68.1	31.9	76.2	0.5
Hispanic or Latino	14.0	52.5	47.5	9.2	67.1	32.9	9.4	0.2
Not Hispanic or Latino								
American Indian or Alaska Native	0.9	53.9	46.1	0.6	64.4	35.6	0.7	0.0
Asian	4.9	52.4	47.6	8.0	72.3	27.7	7.9	-0.1
Black or African American	19.9	36.8	63.2	10.6	57.5	42.5	11.0	0.4
Native Hawaiian or Other Pacific Islander	0.2	52.9	47.1	0.3	67.4	32.6	0.3	0.0
White	47.7	50.1	49.9	62.2	69.9	30.1	61.6	-0.6
More than one race	2.6	56.9	43.1	2.3	71.7	28.3	2.3	0.0
Unknown race and ethnicity	9.8	36.6	63.4	6.8	64.7	35.3	6.9	0.1
Temporary visa holders	10.6	70.9	29.1	24.3	88.6	11.4	23.8	-0.5
Male	46.2	41.8	58.2	54.0	74.9	25.1	53.7	-0.2
U.S. citizens and permanent residents[b]	83.1	34.5	65.5	63.1	66.7	33.3	63.7	0.5
Hispanic or Latino	12.1	44.9	55.1	7.9	64.4	35.6	8.1	0.1
Not Hispanic or Latino								
American Indian or Alaska Native	0.5	41.5	58.5	0.5	67.1	32.9	0.5	0.0
Asian	6.9	37.2	62.8	9.0	68.6	31.4	8.9	-0.1
Black or African American	19.4	25.0	75.0	6.4	57.0	43.0	6.9	0.5
Native Hawaiian or Other Pacific Islander	0.3	27.3	72.7	0.2	55.8	44.2	0.2	0.0
White	49.3	36.0	64.0	66.8	68.2	31.8	66.2	-0.6
More than one race	2.4	35.4	64.6	1.9	70.5	29.5	1.9	0.0
Unknown race and ethnicity	9.1	29.9	70.1	7.2	61.1	38.9	7.3	0.1
Temporary visa holders	16.9	77.9	22.1	36.9	89.0	11.0	36.3	-0.5

- = no value possible.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE 5. Changes in full-time graduate student estimates due to adding new frame institutions, by primary source of support, primary mechanism of support, and sex: 2013

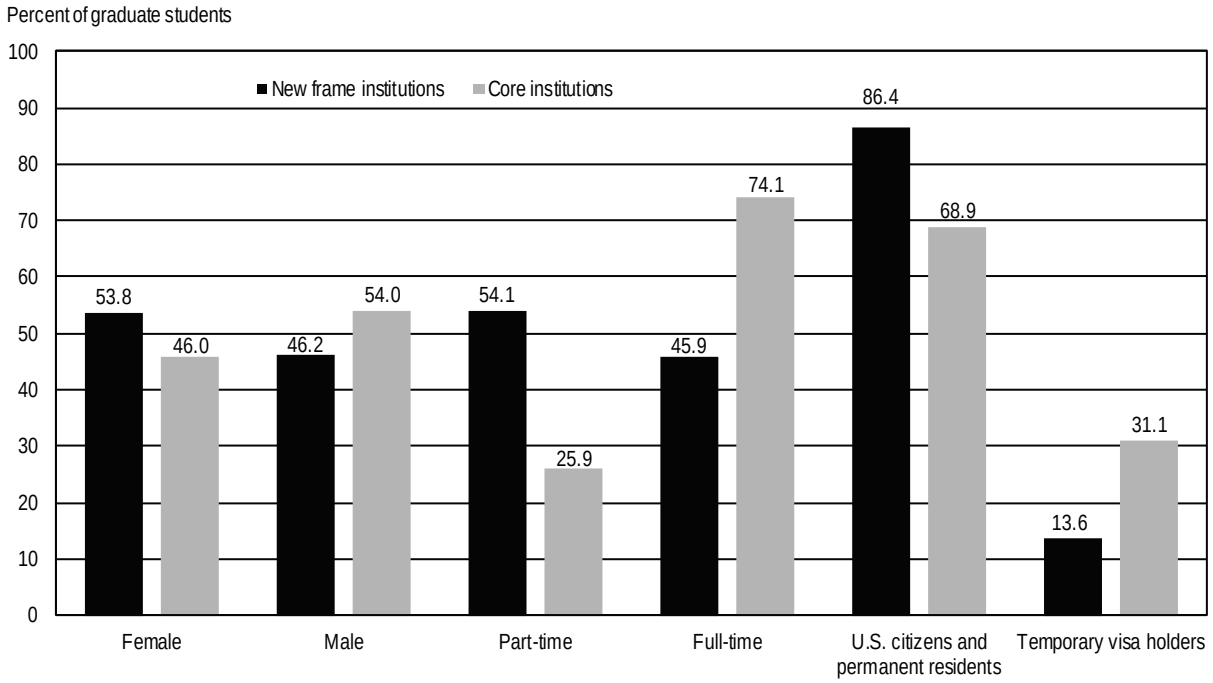
Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
Full-time graduate students	9,529	468,953	478,482	2.0	45.9	74.1	73.2	-0.9
Primary source and mechanism of support								
Federal	412	76,840	77,252	0.5	4.3	16.4	16.1	-0.2
Fellowships	55	9,931	9,986	0.6	13.3	12.9	12.9	0.0
Traineeships	41	6,293	6,334	0.7	10.0	8.2	8.2	0.0
Research assistants	128	55,549	55,677	0.2	31.1	72.3	72.1	-0.2
Teaching assistants	14	925	939	1.5	3.4	1.2	1.2	0.0
Other mechanisms	174	4,142	4,316	4.2	42.2	5.4	5.6	0.2
Institutional	1,574	189,440	191,014	0.8	16.5	40.4	39.9	-0.5
Fellowships	214	28,965	29,179	0.7	13.6	15.3	15.3	0.0
Traineeships	41	3,790	3,831	1.1	2.6	2.0	2.0	0.0
Research assistants	279	45,344	45,623	0.6	17.7	23.9	23.9	-0.1
Teaching assistants	351	86,653	87,004	0.4	22.3	45.7	45.5	-0.2
Other mechanisms	689	24,688	25,377	2.8	43.8	13.0	13.3	0.3
Other nonfederal	149	25,885	26,034	0.6	1.6	5.5	5.4	-0.1
Self-support	7,394	176,788	184,182	4.2	77.6	37.7	38.5	0.8
Female	5,516	213,011	218,527	2.6	57.9	45.4	45.7	0.3
Federal	183	29,993	30,176	0.6	3.3	14.1	13.8	-0.3
Institutional	780	85,302	86,082	0.9	14.1	40.0	39.4	-0.6
Other nonfederal	84	9,981	10,065	0.8	1.5	4.7	4.6	-0.1
Self-support	4,469	87,735	92,204	5.1	81.0	41.2	42.2	1.0
Male	4,013	255,942	259,955	1.6	42.1	54.6	54.3	-0.3
Federal	229	46,847	47,076	0.5	5.7	18.3	18.1	-0.2
Institutional	794	104,138	104,932	0.8	19.8	40.7	40.4	-0.3
Other nonfederal	65	15,904	15,969	0.4	1.6	6.2	6.1	-0.1
Self-support	2,925	89,053	91,978	3.3	72.9	34.8	35.4	0.6
Primary mechanism of support among funded students[b]								
Fellowships	290	43,432	43,722	0.7	13.6	14.9	14.9	0.0
Traineeships	85	10,514	10,599	0.8	4.0	3.6	3.6	0.0
Research assistants	427	116,377	116,804	0.4	20.0	39.8	39.7	-0.1
Teaching assistants	365	88,689	89,054	0.4	17.1	30.4	30.3	-0.1
Other mechanisms	968	33,153	34,121	2.9	45.3	11.3	11.6	0.2

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Excludes primarily self-supported graduate students.

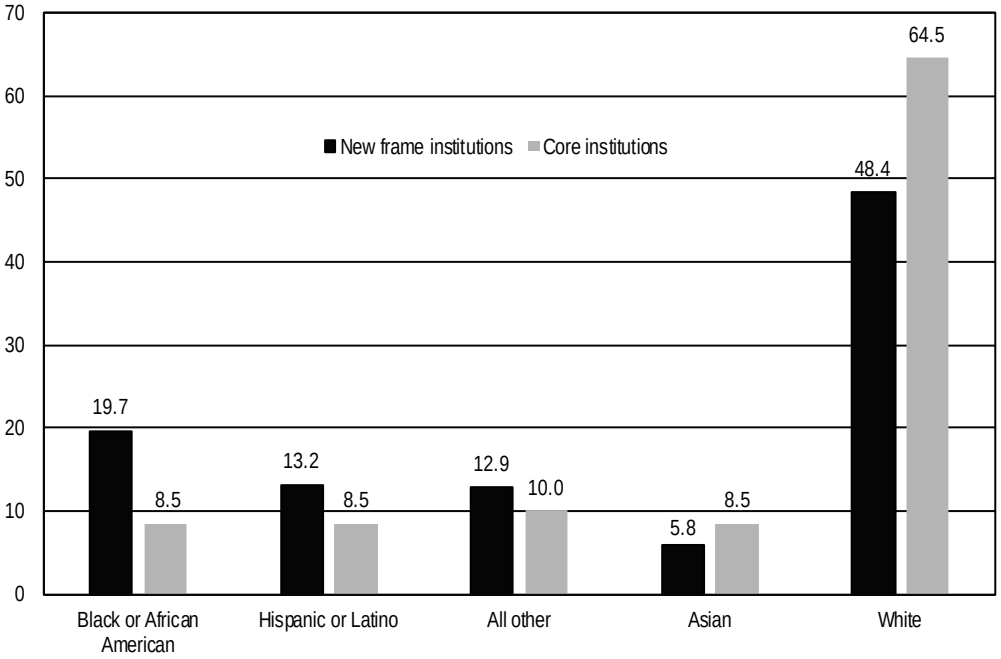
SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

FIGURE 6. Percent distribution of graduate students in core and new frame institutions, by sex, enrollment status, and citizenship: 2013



SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

FIGURE 7. Percent distribution of graduate students in core and new frame institutions, by ethnicity and race: 2013



NOTE: Ethnicity and race data are available only for U.S. citizens and permanent residents.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

Enrollment Status

One of the largest differences between core and new frame institutions is enrollment status. Almost three-fourths (74.1%) of graduate students at core institutions were enrolled full time in 2013 (table 4 and figure 6). By contrast, part-time enrollment (54.1%) was more prevalent than full-time enrollment (45.9%) among graduate students in new frame institutions in 2013. Among public new frame institutions, 71.0% of graduate students were enrolled part time (appendix table B-4), a much higher proportion of part-time graduate enrollment than for in all other institution control types (27.1% in public core institutions, 38.4% in private nonprofit new frame institutions, 22.2% in private nonprofit core institutions, and 41.4% in for-profit core institutions).

Sex

In 2013, men were the majority (54.0%) of the GSS-eligible graduate student population in core institutions, whereas women were the majority (53.8%) in new frame institutions (table 4 and figure 6). The proportion of women among graduate students at public core, public new frame, and private nonprofit core institutions was similar (45.1%, 46.4%, and 46.9% women, respectively; see appendix table B-4). The distribution of graduate students by sex was very different among private nonprofit new frame institutions and for-profit core institutions, with women constituting 60.7% and 73.3%, respectively.

In contrast to the core institutions, where more women enrolled part time than men in 2013 (26.9% and 25.1%, respectively), 58.2% of men attended new frame institutions part time as compared to 50.6% of women (table 4). Including new frame institutions will lead to a 0.2 percentage point increase in the proportion of female graduate students in the GSS.

Citizenship

Foreign graduate students are much more prevalent at core institutions than at new frame institutions. In 2013, only 13.6% of the graduate students at new frame institutions had temporary visas, as compared to 31.1% at core institutions (table 4 and figure 6). For-profit core institutions enrolled the highest percentages of U.S. citizens and permanent residents (98.6%), followed by public new frame institutions (93.7%), private nonprofit new frame institutions (79.7%), public core institutions (69.8%), and private nonprofit core institutions (65.2%, see appendix table B-4).

At both core and new frame institutions in 2013 more foreign graduate students than their American peers were men and enrolled full time. However, foreign graduate students who are either female or enrolled part time are more common at new frame institutions (table 4). In 2013, 64.0% of graduate students on temporary visas at core institutions were men; of these foreign male students 88.9% were enrolled full time. At new frame institutions, these percentages were 57.7% and 75.0%, respectively. Unlike their American peers at new frame institutions, a higher proportion of male than female temporary visa holders enrolled full time; 77.9% of male temporary visa holders at new frame institutions enrolled full time as compared to 70.9% of female temporary visa holders, 46.8% of female U.S. citizens and permanent residents, and 34.5% of male U.S. citizens and permanent residents enrolled full time.

As with core institutions in 2013, smaller proportions of women than men attending frame institutions were temporary visa holders (10.6% versus 16.9%, respectively). Including new frame institutions in the 2013 data increases the number of U.S. citizens and permanent residents in the GSS data collection by

about 4.1% and results in a 0.6 percentage point decline in the overall proportion of temporary visa holders.

Race and Ethnicity

As compared to graduate students at core institutions, a much higher percentage of students at new frame institutions are underrepresented minorities (table 4 and figure 7). Among U.S. citizens and permanent residents enrolled in SEH graduate programs in 2013, the majority (64.5%) of graduate students at core institutions were white, 8.5% were black or African American, and 8.5% were Hispanic or Latino. In contrast, less than half (48.4%) of the graduate students at new frame institutions in 2013 were white, 19.7% were black or African American, and 13.2% were Hispanic or Latino. Proportionally, new frame institutions enrolled almost twice as many underrepresented minority graduate students than core institutions (33.8 % versus 17.8%, table 4).[10]

At both core and new frame institutions, fewer U.S. citizens and permanent residents from underrepresented minority groups enrolled in SEH graduate programs full time compared to their white peers (table 4). Aggregating across minority groups, 39.0% of underrepresented minorities were enrolled full time at new frame institutions in 2013 as compared to 43.7% of whites at new frame institutions, and to 61.7% of underrepresented minorities and 69.0% of whites at core institutions. Within each racial and ethnic group, larger proportions of women enrolled in new frame institutions attended full time (6.7 percentage points to 25.7 percentage points).

Graduate enrollment by race and ethnicity varies substantially by type of institutional control (appendix table B-4). Slightly more than 4 of 10 (40.2%) U.S. citizens or permanent residents enrolled in SEH graduate programs at for-profit core institutions were black or African American; at public new frame institutions, 26.9% were black or African American. These proportions far exceeded those seen at public core; private nonprofit core; and private nonprofit new frame institutions (7.8%, 7.9%, and 11.8%, respectively). By contrast, Hispanics or Latinos were disproportionately enrolled at private nonprofit new frame institutions (18.7%), Asians at private nonprofit core institutions (10.9%), and whites at public core institutions (67.2%).

Including the new frame institutions would lead to a 6.3% increase in the number of Hispanic or Latino graduate students and a 9.5% increase in the number of black or African American graduate students in the GSS (table 4). Compared to men at new frame institutions, more female students attending these institutions were Hispanic or Latino (12.1% versus 14.0%, respectively) and similar proportions were black or African American (19.9% compared to 19.4%). These data would represent a 0.2 percentage point increase in the proportion of Hispanic or Latino graduate students, a 0.4 percentage point increase in the proportion of black or African American graduate students, a 0.6 percentage point decline in the proportion of white graduate students, and a 0.1 percentage point decline in the proportion of Asian graduate students in the 2013 GSS data.

GRADUATE STUDENT FINANCIAL SUPPORT

Full-time students in new frame institutions funded their graduate education differently than full-time students in core institutions in 2013. More than three-fourths (77.6%) of full-time new frame institution graduate students were primarily self-supported, compared to only 37.7% of full-time graduate students in core institutions (table 5). Self-support among full-time graduate students was more prevalent at private nonprofit new frame institutions (83.3%) than public new frame institutions (64.6%), though the

greatest proportion of primarily self-supported graduate students was seen at for-profit core institutions (96.4%, appendix table B-4).

Four times as many full-time graduate students at core institutions than those at new frame institutions were supported primarily by federal funds (16.4% versus 4.3%). Of those receiving federal support, twice as many graduate students at core institutions had research assistantships compared to those at new frame institutions (72.3% versus 31.1%, respectively; see table 5). The primary source of support for graduate students at core institutions in 2013 was institutional funding (40.4%), just under half (45.7%) of these students were supported through teaching assistantships. Among new frame institutions, only 22.3% of the 16.5% of graduate students receiving institutional funding as primary support had teaching assistantships. At both new frame and core institutions, larger percentages of women were self-supported (81.0% of new frame, and 41.2% of core) than men (72.9% of new frame, and 34.8% of core).

Less is known about the funding mechanisms for full-time graduate students in new frame institutions. Almost half (43.8%) of full-time graduate students at new frame institutions were funded primarily through institutional funding mechanisms other than the traditional research assistantships, teaching assistantships, fellowships, and traineeships. By comparison, only 13.0% of full-time students attending core institutions were funded through these other mechanisms. Including the new frame institutions in the 2013 GSS would have led to a 4.2% increase in the number of full-time students who relied primarily on self-support and a 0.8 percentage point change in the proportion of self-supported graduate students.

POSTDOCS AND NONFACULTY RESEARCHERS

The impact of incorporating new frame institutions in the 2013 GSS is much less in the data for postdocs and NFRs than for graduate students. Forty-two units in 15 new frame institutions employed a total of 1,048 postdocs, and 34 units in 14 new frame institutions employed 343 NFRs (tables 2 and 6). Adding new frame institution postdocs would result in a 1.7% increase in the total number of postdocs and a 1.5% increase in the number of NFRs (table 6).

Postdocs at new frame institutions were clustered in the biological sciences. Three-quarters (75.5%) of postdocs at new frame institutions (compared to 31.2% at core institutions) were in the biological sciences (table 6). Adding new frame institution postdocs to the 2013 GSS would lead to a 4.1% increase and a 0.7 percentage point increase in the proportion of postdocs in the biological sciences. Similar to the graduate student enrollment data, substantially fewer new frame postdocs were employed within engineering and health sciences units. Whereas 11.5% of core institution postdocs were in engineering fields and 29.9% were in the health sciences fields, only 2.2% of postdocs at new frame institutions were in these two fields combined.

Among postdocs at new frame institutions who were U.S. citizens and residents, 25.2% were Asian and 8.5% were Hispanic, higher than the 18.4% and 5.0%, respectively, of postdocs working at core institutions. Adding the new frame institutions will result in a 2.2% increase in Hispanic postdocs. In 2013, a larger percentage of new frame institution postdocs were on temporary visas (62.9%) than the postdocs at core institutions (52.3%), which will lead to a 2.0% increase in postdocs on temporary visas.

TABLE 6. Changes in the postdoc and NFR estimates due to adding new frame institutions, by sex, citizenship, race, ethnicity, institutional control, and selected fields: 2013

Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All postdocs	1,048	61,942	62,990	1.7	100.0	100.0	100.0	-
Female	409	24,357	24,766	1.7	39.0	39.3	39.3	0.0
Male	639	37,585	38,224	1.7	61.0	60.7	60.7	0.0
U.S. citizens and permanent residents[b]	389	29,546	29,935	1.3	37.1	47.7	47.5	-0.2
Hispanic or Latino	33	1,490	1,523	2.2	8.5	5.0	5.1	0.0
Not Hispanic or Latino								
American Indian or Alaska Native	2	121	123	1.7	0.5	0.4	0.4	0.0
Asian	98	5,440	5,538	1.8	25.2	18.4	18.5	0.1
Black or African American	7	1,132	1,139	0.6	1.8	3.8	3.8	0.0
Native Hawaiian or Other Pacific Islander	1	77	78	1.3	0.3	0.3	0.3	0.0
White	241	17,348	17,589	1.4	62.0	58.7	58.8	0.0
More than one race	6	263	269	2.3	1.5	0.9	0.9	0.0
Unknown ethnicity and race	1	3,675	3,676	0.0	0.3	12.4	12.3	-0.2
Temporary visa holders	659	32,396	33,055	2.0	62.9	52.3	52.5	0.2
Institutional control								
Public	38	33,874	33,912	0.1	3.6	54.7	53.8	-0.8
Private, nonprofit	1,010	28,068	29,078	3.6	96.4	45.3	46.2	0.8
Field[c]								
Science	1,024	31,330	32,354	3.3	97.7	50.6	51.4	0.8
Biological sciences	791	19,330	20,121	4.1	75.5	31.2	31.9	0.7
Neuroscience	109	1,696	1,805	6.4	10.4	2.7	2.9	0.1
Physical sciences	108	7,197	7,305	1.5	10.3	11.6	11.6	0.0
Agricultural sciences	9	1,319	1,328	0.7	0.9	2.1	2.1	0.0
Computer sciences	5	765	770	0.7	0.5	1.2	1.2	0.0
Psychology	2	1,023	1,025	0.2	0.2	1.7	1.6	0.0
Engineering	10	7,106	7,116	0.1	1.0	11.5	11.3	-0.2
Health	13	18,547	18,560	0.1	1.2	29.9	29.5	-0.5
Primary source of support								
Federal	540	33,382	33,922	1.6	51.5	53.9	53.9	0.0
Institutional	100	12,254	12,354	0.8	9.5	19.8	19.6	-0.2
Other nonfederal	377	10,458	10,835	3.6	36.0	16.9	17.2	0.3
Self-support	0	588	588	0.0	0.0	0.9	0.9	0.0
Unknown	31	5,260	5,291	0.6	3.0	8.5	8.4	-0.1
All NFRs	343	22,465	22,808	1.5	100.0	100.0	100.0	-
Female	200	13,617	13,817	1.5	58.3	60.6	60.6	0.0
Male	143	8,848	8,991	1.6	41.7	39.4	39.4	0.0
Field[c]								
Science	322	11,324	11,646	2.8	93.9	50.4	51.1	0.7
Biological sciences	278	6,527	6,805	4.3	81.0	29.1	29.8	0.8
Neuroscience	17	417	434	4.1	5.0	1.9	1.9	0.0
Physical sciences	16	2,312	2,328	0.7	4.7	10.3	10.2	-0.1
Agricultural sciences	6	550	556	1.1	1.7	2.4	2.4	0.0
Earth, atmospheric, and ocean sciences	5	1,518	1,523	0.3	1.5	6.8	6.7	-0.1
Engineering	13	2,494	2,507	0.5	3.8	11.1	11.0	-0.1
Health	8	6,039	6,047	0.1	2.3	26.9	26.5	-0.4
Institutional control								
Public	29	13,882	13,911	0.2	8.5	61.8	61.0	-0.8
Private, nonprofit	314	8,583	8,897	3.7	91.5	38.2	39.0	0.8

- = no value possible.

NFR = other doctorate-holding nonfaculty researcher; Postdoc = Postdoctoral appointees.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[c] Field listing includes only those science fields reported within the new frame institutions; fields ordered by count (descending) within the new frame institutions.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

Primary sources of funding for postdocs in new frame and core institutions are also different. Approximately one-third (36.0%) of postdocs at new frame institutions primarily received other nonfederal funding, a much larger percentage than the 16.9% of core institution postdocs (table 6). Smaller percentages of postdocs at new frame institutions received institutional support than did postdocs at core institutions (9.5% versus 19.8%). Most postdocs in new frame institutions were at private nonprofit institutions (96.4%), compared to 45.3% of postdocs at core institutions.

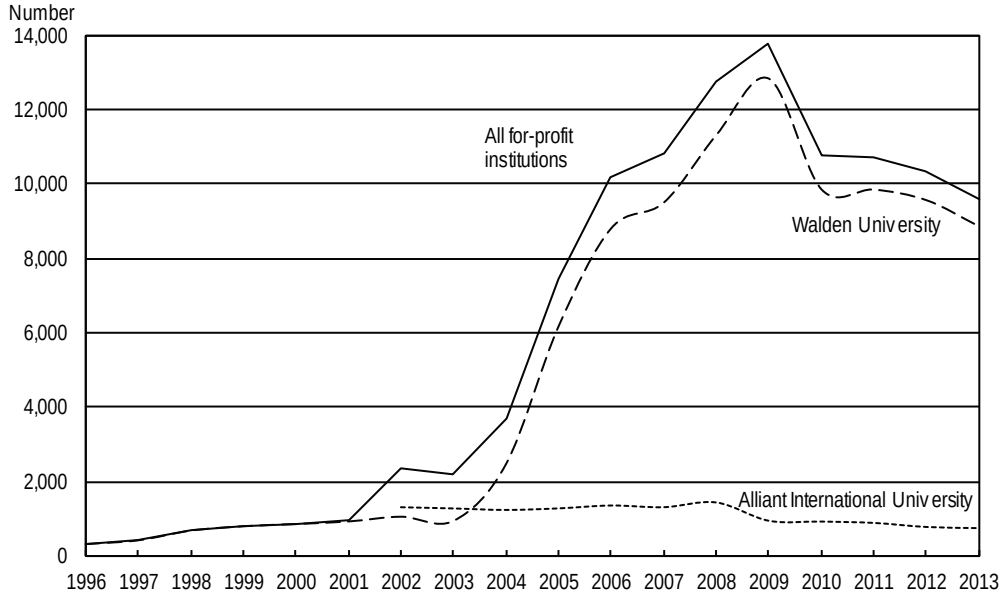
As with postdocs, NFRs at new frame institutions were clustered in the biological sciences and few were in engineering or health units. Adding the new frame institutions would increase the total number of NFRs in the biological sciences by 4.3%, leading to a 0.8 percentage point increase in the proportion of NFRs in the biological sciences (table 6). The proportion of NFRs in engineering and health would decline by 0.1 and 0.4 percentage points, respectively, because only 3.8% of NFRs at new frame institutions worked in engineering and 2.3% in health sciences (compared to 11.1% and 26.9% of NFRs at core institutions). Finally, 91.5% of NFRs in new frame institutions were at private nonprofit institutions, compared to 38.2% of NFRs in core institutions.

IMPACT OF REMOVING FOR-PROFIT INSTITUTIONS

The second change to the GSS frame beginning with the 2014 data release will be the exclusion of graduate students in for-profit institutions. As with the prior analysis of new frame institutions, the impacts of this change on future GSS data are examined by using the 2013 GSS estimates, with a trend analysis that includes data from 1996 to 2013. The for-profit core institutions differ from the public and private nonprofit core institutions in terms of the types of graduate degree programs offered and student composition.

The 2011 GSS screening survey of new potentially eligible institutions identified 18 for-profit institutions. At the end of the 2013 survey cycle, 12 new for-profit institutions remained as eligible. In 2013, the GSS core institutions included two for-profit institutions—Walden University and Alliant International University. Walden University was added to the GSS in 1996 with three units (preventive medicine and community health; clinical psychology; psychology, except clinical) reporting 332 graduate students. Alliant International University was added in 2002, also with three psychology graduate degree programs (clinical psychology, organizational psychology, and forensic psychology) reporting 1,282 graduate students (figure 8). By 2013, Walden University enrolled 8,884 graduate students in eight degree programs and Alliant International University enrolled 735 graduate students in four degree programs; together these students represented 1.5% of all graduate students in the GSS (tables 7 and 8).

FIGURE 8. Graduate students in for-profit core institutions: 1996–2013



SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

TABLE 7. Eligible units in private for-profit institutions: 2013

Institution and unit name	Number of graduate students	Percent	First year reported in GSS
All eligible units	9,619	100.0	-
Walden University	8,884	92.4	1996
Psychology, general	3,521	36.6	2007
Preventive medicine and community health	2,375	24.7	1996
Public administration	1,980	20.6	2008
Psychology, except clinical	450	4.7	1996
Clinical psychology (excluding PsyD)	247	2.6	1996
Computer science (excluding DCS)	214	2.2	2005
Public policy analysis	77	0.8	2011
Communication	20	0.2	2013
Alliant International University	735	7.6	2002
Clinical psychology	526	5.5	2002
Organizational psychology	142	1.5	2002
Forensic psychology	63	0.7	2002
International relations	4	0.0	2003

- = no value possible.

NOTE: Units ordered by number of graduate students in 2013.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS), 2013.

TABLE 8. Changes in the graduate student estimates due to excluding private for-profit institutions, by student characteristics, primary source of support, and field: 2013

Characteristics	Count				Percent distribution			
	For-profit institutions	Nonprofit institutions	All institutions	Percent change	For-profit institutions	Nonprofit institutions	All institutions	Percentage point change[a]
All graduate students	9,619	623,391	633,010	-1.5	100.0	100.0	100.0	-
Full-time	5,637	463,316	468,953	-1.2	58.6	74.3	74.1	0.2
Part-time	3,982	160,075	164,057	-2.4	41.4	25.7	25.9	-0.2
Female	7,050	284,330	291,380	-2.4	73.3	45.6	46.0	-0.4
Male	2,569	339,061	341,630	-0.8	26.7	54.4	54.0	0.4
U.S. citizens and permanent residents[b]	9,480	426,816	436,296	-2.2	98.6	68.5	68.9	-0.5
Hispanic or Latino	677	36,606	37,283	-1.8	7.1	8.6	8.5	0.0
Not Hispanic or Latino								
American Indian or Alaska Native	80	2,437	2,517	-3.2	0.8	0.6	0.6	0.0
Asian	302	36,835	37,137	-0.8	3.2	8.6	8.5	0.1
Black or African American	3,813	33,384	37,197	-10.3	40.2	7.8	8.5	-0.7
Native Hawaiian or Other Pacific Islander	22	1,015	1,037	-2.1	0.2	0.2	0.2	0.0
White	3,495	277,859	281,354	-1.2	36.9	65.1	64.5	0.6
More than one race	263	8,897	9,160	-2.9	2.8	2.1	2.1	0.0
Unknown race and ethnicity	828	29,783	30,611	-2.7	8.7	7.0	7.0	0.0
Temporary visa holders	139	196,575	196,714	-0.1	1.4	31.5	31.1	0.5
Primary source of support[c]								
Federal	145	76,695	76,840	-0.2	2.6	16.6	16.4	0.2
Institutional	35	189,405	189,440	0.0	0.6	40.9	40.4	0.5
Other nonfederal	24	25,861	25,885	-0.1	0.4	5.6	5.5	0.1
Self-support	5,433	171,355	176,788	-3.1	96.4	37.0	37.7	-0.7
Field[d]								
Psychology	4,949	49,153	54,102	-9.1	51.5	7.9	8.5	-0.7
Psychology, combined	3,521	12,439	15,960	-22.1	36.6	2.0	2.5	-0.5
Clinical psychology	773	9,136	9,909	-7.8	8.0	1.5	1.6	-0.1
Psychology, except clinical	655	27,578	28,233	-2.3	6.8	4.4	4.5	0.0
Preventive medicine and community health	2,375	60,335	62,710	-3.8	24.7	9.7	9.9	-0.2
Social sciences	2,061	105,217	107,278	-1.9	21.4	16.9	16.9	-0.1
Public administration	1,980	20,519	22,499	-8.8	20.6	3.3	3.6	-0.3
Public policy analysis	77	6,753	6,830	-1.1	0.8	1.1	1.1	0.0
International relations and national security	4	3,898	3,902	-0.1	0.0	0.6	0.6	0.0
Computer sciences	214	56,125	56,339	-0.4	2.2	9.0	8.9	0.1
Communication	20	11,094	11,114	-0.2	0.2	1.8	1.8	0.0

- = no value possible.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[c] Financial support data are available only for full-time students.

[d] Field listing includes only those fields reported within private, for-profit institutions; fields ordered by major and detailed field count within the for-profit institutions. Detail fields may not sum to major field total for all institutions and nonprofit institutions columns.

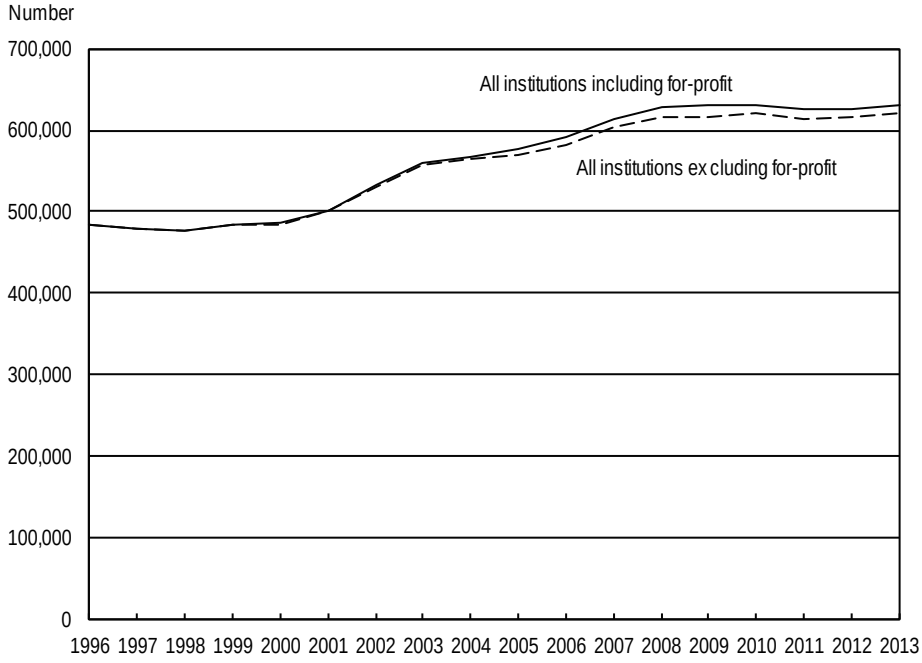
SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

The GSS has been working with institutions over the past decade to identify and exclude practitioner-oriented graduate programs. At the end of the 2013 data collection, the 47 units in the 12 newly identified for-profit institutions were evaluated because of continuing concerns about the eligibility of these units. The information provided by all for-profit institutions (including Walden University and Alliant International University), their program Web sites, and institutional mission statements were thoroughly reviewed. At the end of the review, it was determined that the primary mission and purpose of the 12 newly identified for-profit institutions and two extant for-profit institutions is to prepare students for professional careers. Thus, the graduate degrees offered are not research-oriented but rather practitioner-based programs, and are ineligible for the GSS.[11] For-profit institutions have also been excluded from the NCSES Higher Education Research and Development (HERD) survey frame because they have minimal research and development activities.[12]

Slightly more than 9% of all psychology students in the GSS were enrolled in for-profit institutions, and half (51.5%) of graduate students in for-profit institutions were enrolled in a psychology program. The impact of excluding for-profit institutions will lead to a 0.7% decrease in the proportion of graduate students in the psychology (table 8).

Though the overall impact on GSS trend data of removing the two for-profit institutions is minimal (figure 9), graduate student demographics, enrollment status, and funding characteristics differ across for-profit and nonprofit institutions. For-profit institutions enroll higher percentages of female, U.S. citizen and permanent resident, and black graduate students than the core institutions (table 8). In 2013, almost three-fourths (73.3%) of the graduate students enrolled at for-profit institutions were women, compared to 45.6% of students in nonprofit institutions. Overall, removing the two for-profit institutions will lead to a 2.4% decline in the number of female graduate students and 0.4% decrease in the proportion of women in the GSS. Almost all (98.6%) of graduate students attending for-profit institutions were U.S. citizens or permanent residents, compared to 68.5% of graduate students in

FIGURE 9. Graduate students in science, engineering, and health including and excluding students in for-profit institutions: 1996–2013



SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

nonprofit institutions. While 10.3% of black or African American graduate students in the 2013 GSS attended for-profit institutions, 40.2% of graduate students enrolled in for-profit institutions were black or African American.

Larger percentages of graduate students in for-profit institutions enrolled part time and were self-funded. In the 2013 GSS, 41.4% of graduate students at for-profit institutions attended part time, compared to 25.7% of students attending nonprofit institutions (table 8). Among full-time graduate students enrolled at for-profit institutions, 96.4% were primarily on self-support to pay for their graduate education. In contrast, only 37.0% of full-time graduate students enrolled in nonprofit institutions were on self-support.

CONCLUSION

The changes to the frame—adding the new frame institutions, and excluding previously eligible for-profit institutions—will lead to small overall changes in GSS estimates, though some estimates will be disproportionately affected. The 2013 GSS population would have been approximately 644,000 graduate students after incorporating the new frame institutions, compared to the approximately 633,000 graduate students in the extant frame (table 9). The changes would lead to a 1.8% increase in overall graduate enrollment in SEH programs, a 0.8% increase in full-time students, and a 4.4% increase in part-time students. The increase in part-time graduate students would result in a 0.7% increase in the proportion of part-time graduate enrollment in GSS.

Compared to students at core institutions, larger proportions of students at new frame institutions are enrolled part time; are women or underrepresented minorities; and self-fund their graduate education. In addition, larger proportions of students at new frame institutions enrolled in computer science and multidisciplinary/interdisciplinary studies than those at core institutions; a smaller proportion of students in new frame institutions enrolled in engineering.

Larger proportions of graduate students in the for-profit institutions were black or African American, women, U.S. citizens or permanent residents, and studying psychology. The inclusion of the new frame institutions and the removal of the for-profit institutions will lead to small overall changes in the number or proportion of black or African American and female students. Specifically, there will be a net decline in the number (-279) and proportion (0.2 percentage points) of black or African American graduate students. Overall, these changes will also lead to a net decrease in graduate students in psychology, combined (-3,165); preventative medicine and community health (-707); clinical psychology (-438); and political science and public administration (-222) and to an increase in graduate students studying computer sciences (6,012); psychology, except clinical (1,208); and multidisciplinary and interdisciplinary studies (675) (table 10).

Impacts of the frame change on postdoc or NFR data are minimal because the new frame institutions employed much smaller numbers of postdocs and NFRs than the core institutions.

Including new frame institutions and excluding previously eligible for-profit institutions will lead to changes in the GSS trend data. However, these changes will improve the survey coverage of the eligible graduate students and better highlight the evolving landscape of U.S. postsecondary institutions offering research-based SEH graduate programs.

TABLE 9. Changes in the graduate student estimates due to including new frame institutions and excluding private for-profit institutions, by student and institution characteristics: 2013

Characteristics	Count						Percent distribution				
	Core institutions	New frame institutions	For-profit institutions	Net change	All institutions	Percent change	Core institutions	New frame institutions	For-profit institutions	All institutions	Percentage point change[a]
All graduate students	633,010	20,772	-9,619	11,153	644,163	1.8	100.0	100.0	100.0	100.0	–
Full-time	468,953	9,529	-5,637	3,892	472,845	0.8	74.1	45.9	58.6	73.4	-0.7
Part-time	164,057	11,243	-3,982	7,261	171,318	4.4	25.9	54.1	41.4	26.6	0.7
Female	291,380	11,174	-7,050	4,124	295,504	1.4	46.0	53.8	73.3	45.9	-0.2
Male	341,630	9,598	-2,569	7,029	348,659	2.1	54.0	46.2	26.7	54.1	0.2
U.S. citizens and permanent residents[b]	436,296	17,957	-9,480	8,477	444,773	1.9	68.9	86.4	98.6	69.0	0.1
Hispanic or Latino	37,283	2,363	-677	1,686	38,969	4.5	8.5	13.2	7.1	8.8	0.2
Not Hispanic or Latino											
American Indian or Alaska Native	2,517	130	-80	50	2,567	2.0	0.6	0.7	0.8	0.6	0.0
Asian	37,137	1,045	-302	743	37,880	2.0	8.5	5.8	3.2	8.5	0.0
Black or African American	37,197	3,534	-3,813	-279	36,918	-0.8	8.5	19.7	40.2	8.3	-0.2
Native Hawaiian or Other Pacific Islander	1,037	39	-22	17	1,054	1.6	0.2	0.2	0.2	0.2	0.0
White	281,354	8,696	-3,495	5,201	286,555	1.8	64.5	48.4	36.9	64.4	-0.1
More than one race	9,160	447	-263	184	9,344	2.0	2.1	2.5	2.8	2.1	0.0
Unknown race and ethnicity	30,611	1,703	-828	875	31,486	2.9	7.0	9.5	8.7	7.1	0.1
Temporary visa holders	196,714	2,815	-139	2,676	199,390	1.4	31.1	13.6	1.4	31.0	-0.1
Primary funding source[c]											
Federal	76,840	412	-145	267	77,107	0.3	16.4	4.3	2.6	16.3	-0.1
Institutional	189,440	1,574	-35	1,539	190,979	0.8	40.4	16.5	0.6	40.4	0.0
Other nonfederal	25,885	149	-24	125	26,010	0.5	5.5	1.6	0.4	5.5	0.0
Self-support	176,788	7,394	-5,433	1,961	178,749	1.1	37.7	77.6	96.4	37.8	0.1
Primary funding mechanism[c]											
Fellowships	43,432	290	0	290	43,722	0.7	14.9	13.6	0.0	15.0	0.2
Traineeships	10,514	85	0	85	10,599	0.8	3.6	4.0	0.0	4.4	0.8
Research assistants	116,377	427	0	427	116,804	0.4	39.8	20.0	0.0	22.1	-17.7
Teaching assistants	88,689	365	0	365	89,054	0.4	30.4	17.1	0.0	18.9	-11.5
Other (not including self-support)	33,153	968	-204	764	33,917	2.3	11.3	45.3	100.0	39.6	28.2
Field											
Science	417,251	17,048	-7,244	9,804	427,055	2.3	65.9	0.8	75.3	66.3	0.4
Agricultural sciences	16,429	519	0	519	16,948	3.2	2.6	0.0	0.0	2.6	0.0
Biological sciences	76,649	2,412	0	2,412	79,061	3.1	12.1	0.1	0.0	12.3	0.2
Communication	11,114	661	-20	641	11,755	5.8	1.8	0.0	0.2	1.8	0.1
Computer sciences	56,339	6,226	-214	6,012	62,351	10.7	8.9	0.3	2.2	9.7	0.8
Earth, atmospheric, and ocean sciences	15,816	278	0	278	16,094	1.8	2.5	0.0	0.0	2.5	0.0
Family and consumer sciences and human sciences	4,014	54	0	54	4,068	1.3	0.6	0.0	0.0	0.6	0.0
Mathematical sciences	24,804	378	0	378	25,182	1.5	3.9	0.0	0.0	3.9	0.0
Multidisciplinary and interdisciplinary studies	5,892	675	0	675	6,567	11.5	0.9	0.0	0.0	1.0	0.1
Neuroscience	4,795	0	0	0	4,795	0.0	0.8	0.0	0.0	0.7	0.0
Physical sciences	40,019	136	0	136	40,155	0.3	6.3	0.0	0.0	6.2	-0.1
Psychology	54,102	2,554	-4,949	-2,395	51,707	-4.4	8.5	0.1	51.5	8.0	-0.5

TABLE 9. Changes in the graduate student estimates due to including new frame institutions and excluding private for-profit institutions, by student and institution characteristics: 2013

Characteristics	Count						Percent distribution				
	Core institutions	New frame institutions	For-profit institutions	Net change	All institutions	Percent change	Core institutions	New frame institutions	For-profit institutions	All institutions	Percentage point change[a]
Social sciences	107,278	3,155	-2,061	1,094	108,372	1.0	16.9	0.2	21.4	16.8	-0.1
Engineering	153,049	1,033	0	1,033	154,082	0.7	24.2	0.0	0.0	23.9	-0.3
Health	62,710	2,691	-2,375	316	63,026	0.5	9.9	0.1	24.7	9.8	-0.1
Institution status											
Core institutions	633,010	-	-9,619	-9,619	623,391	-1.5	100.0	-	100.0	96.8	-3.2
New frame institutions	-	20,772	-	20,772	20,772	-	-	100.0	-	3.2	3.2
Institutional control											
Public	446,818	10,035	0	10,035	456,853	2.2	70.6	0.5	0.0	70.9	0.3
Private, nonprofit	176,573	10,737	0	10,737	187,310	6.1	27.9	0.5	0.0	29.1	1.2
Private, for-profit	9,619	0	-9,619	-9,619	0	-100.0	1.5	0.0	100.0	0.0	-1.5

- = no value possible.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[c] Financial support data are available only for full-time students.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE 10. Changes in the estimates of graduate students due to including new frame institutions and excluding private, for-profit institutions, by detailed field: 2013

Field	Count						Percent distribution				
	Core institutions	New frame institutions	For-profit institutions	Net change	All institutions	Percent change	Core institutions	New frame institutions	For-profit institutions	All institutions	Percentage point change[a]
All graduate students	633,010	20,772	-9,619	11,153	644,163	1.8	100.0	100.0	100.0	100.0	-
Science	417,251	17,048	-7,244	9,804	427,055	2.3	65.9	82.1	75.3	66.3	0.4
Agricultural sciences	16,429	519	0	519	16,948	3.2	2.6	2.5	0.0	2.6	0.0
Biological sciences	76,649	2,412	0	2,412	79,061	3.1	12.1	11.6	0.0	12.3	0.2
Anatomy	527	16	0	16	543	3.0	0.1	0.1	0.0	0.1	0.0
Biology	16,004	594	0	594	16,598	3.7	2.5	2.9	0.0	2.6	0.1
Biometry and epidemiology	8,478	58	0	58	8,536	0.7	1.3	0.3	0.0	1.3	0.0
Cell and molecular biology	6,543	64	0	64	6,607	1.0	1.0	0.3	0.0	1.0	0.0
Ecology	1,437	2	0	2	1,439	0.1	0.2	0.0	0.0	0.2	0.0
Genetics	2,315	30	0	30	2,345	1.3	0.4	0.1	0.0	0.4	0.0
Microbiology, immunology, and virology	4,961	17	0	17	4,978	0.3	0.8	0.1	0.0	0.8	0.0
Nutrition	5,387	306	0	306	5,693	5.7	0.9	1.5	0.0	0.9	0.0
Physiology	3,224	129	0	129	3,353	4.0	0.5	0.6	0.0	0.5	0.0
Zoology	1,188	48	0	48	1,236	4.0	0.2	0.2	0.0	0.2	0.0
Biological sciences nec	13,416	1,148	0	1,148	14,564	8.6	2.1	5.5	0.0	2.3	0.1
Communication	11,094	661	-20	641	11,735	5.8	1.8	3.2	0.2	1.8	0.1
Computer sciences	56,125	6,226	-214	6,012	62,137	10.7	8.9	30.0	2.2	9.6	0.8
Earth, atmospheric, and ocean sciences	15,816	278	0	278	16,094	1.8	2.5	1.3	0.0	2.5	0.0
Atmospheric sciences	1,534	11	0	11	1,545	0.7	0.2	0.1	0.0	0.2	0.0
Ocean sciences	2,682	126	0	126	2,808	4.7	0.4	0.6	0.0	0.4	0.0
Earth, atmospheric, and ocean sciences nec	2,846	141	0	141	2,987	5.0	0.4	0.7	0.0	0.5	0.0
Family and consumer sciences and human sciences	4,014	54	0	54	4,068	1.4	0.6	0.3	0.0	0.6	0.0
Mathematics and statistics	24,804	378	0	378	25,182	1.5	3.9	1.8	0.0	3.9	0.0
Mathematics and applied mathematics	18,323	275	0	275	18,598	1.5	2.9	1.3	0.0	2.9	0.0
Statistics	6,481	103	0	103	6,584	1.6	1.0	0.5	0.0	1.0	0.0
Multidisciplinary and interdisciplinary studies	5,892	675	0	675	6,567	11.5	0.9	3.2	0.0	1.0	0.1
Physical sciences	40,019	136	0	136	40,155	0.3	6.3	0.7	0.0	6.2	-0.1
Chemistry	22,949	37	0	37	22,986	0.2	3.6	0.2	0.0	3.6	-0.1
Physics	15,239	73	0	73	15,312	0.5	2.4	0.4	0.0	2.4	0.0
Physical sciences nec	581	26	0	26	607	4.5	0.1	0.1	0.0	0.1	0.0
Psychology	54,102	2,554	-4,949	-2,395	51,707	-4.4	8.5	12.3	51.5	8.0	-0.5
Clinical psychology	9,136	335	-773	-438	8,698	-4.8	1.4	1.6	8.0	1.4	-0.1
Psychology, combined	12,439	356	-3,521	-3,165	9,274	-25.4	2.0	1.7	36.6	1.4	-0.5
Psychology, except clinical	27,578	1,863	-655	1,208	28,786	4.4	4.4	9.0	6.8	4.5	0.1
Social sciences	107,278	17,048	-2,061	9,804	427,055	2.3	65.9	82.1	75.3	66.3	0.4
Anthropology (cultural and social)	8,172	32	0	32	8,204	0.4	1.3	0.2	0.0	1.3	0.0
Economics	14,819	125	0	125	14,944	0.8	2.3	0.6	0.0	2.3	0.0
Geography	4,891	28	0	28	4,919	0.6	0.8	0.1	0.0	0.8	0.0
History and philosophy of science	391	3	0	3	394	0.8	0.1	0.0	0.0	0.1	0.0

TABLE 10. Changes in the estimates of graduate students due to including new frame institutions and excluding private, for-profit institutions, by detailed field: 2013

Field	Count						Percent distribution				
	Core institutions	New frame institutions	For-profit institutions	Net change	All institutions	Percent change	Core institutions	New frame institutions	For-profit institutions	All institutions	Percentage point change[a]
Political science and public administration	46,350	1,839	-2,061	-222	46,128	-0.5	7.3	8.9	21.4	7.2	-0.2
Sociology	8,960	78	0	78	9,038	0.9	1.4	0.4	0.0	1.4	0.0
Social sciences nec	15,981	1,050	0	1,050	17,031	6.6	2.5	5.1	0.0	2.6	0.1
Engineering	153,049	1,033	0	1,033	154,082	0.7	24.2	5.0	0.0	23.9	-0.3
Agricultural engineering	1,642	22	0	22	1,664	1.3	0.3	0.1	0.0	0.3	0.0
Civil engineering	20,110	84	0	84	20,194	0.4	3.2	0.4	0.0	3.1	0.0
Electrical engineering	45,562	709	0	709	46,271	1.6	7.2	3.4	0.0	7.2	0.0
Industrial and manufacturing engineering	14,363	6	0	6	14,369	0.0	2.3	0.0	0.0	2.2	0.0
Mechanical engineering	24,087	100	0	100	24,187	0.4	3.8	0.5	0.0	3.8	-0.1
Metallurgical and materials engineering	7,144	52	0	52	7,196	0.7	1.1	0.3	0.0	1.1	0.0
Engineering science and engineering physics	2,142	10	0	10	2,152	0.5	0.3	0.0	0.0	0.3	0.0
Engineering nec	8,321	50	0	50	8,371	0.6	1.3	0.2	0.0	1.3	0.0
Health	62,710	2,691	-2,375	316	63,026	0.5	9.9	13.0	24.7	9.8	-0.1
Nursing	4,969	105	0	105	5,074	2.1	0.8	0.5	0.0	0.8	0.0
Pharmaceutical sciences	4,137	100	0	100	4,237	2.4	0.7	0.5	0.0	0.7	0.0
Preventive medicine and community health	21,534	1,668	-2,375	-707	20,827	-3.3	3.4	8.0	24.7	3.2	-0.2
Radiology	201	32	0	32	233	15.9	0.0	0.2	0.0	0.0	0.0
Speech pathology and audiology	14,113	371	0	371	14,484	2.6	2.2	1.8	0.0	2.2	0.0
Other clinical medicine nec	1,979	59	0	59	2,038	3.0	0.3	0.3	0.0	0.3	0.0
Other health nec	9,296	356	0	356	9,652	3.8	1.5	1.7	0.0	1.5	0.0

- = no value possible.

nec = not elsewhere classified.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

NOTES: This table only includes the fields that are impacted by adding units from new frame institutions and removing units from private, for-profit institutions. Thus, not all numbers and percentages sum to total.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

KEY TERMS

Core—An institution which was eligible for the GSS and included in the survey in 2013.

Doctorate-holding nonfaculty researcher (NFR)—Employees who meet both of the following qualifications: not considered either postdoctoral researchers or members of the faculty and involved principally in science, engineering and health research activities.

Fields—The discipline of a unit according to the GSS taxonomy.

GSS-eligible fields—Science, engineering, and health fields included in the GSS taxonomy.

GSS-eligible institutions—All academic institutions in the United States and its territories that grant research-oriented master's degrees or doctorates, appoint postdocs, or employ NFRs in S&E and health-related fields.

GSS-eligible units—Academic units in an eligible institution in an eligible field that meet GSS code-specific criteria for inclusion.

New frame institutions—Newly eligible institutions identified through the 2008 or 2011 frame evaluations and annual frame evaluations since 2011.

Postdoctoral researcher (postdoc)—NSF defines a postdoc as meeting both of the following qualifications: holds a recent doctoral degree (generally awarded within the last 5–7 years); has a limited-term appointment (generally no more than 5–7 years); primarily training in research or scholarship; and working under the supervision of a senior scholar. The definition of a postdoc varies by institution; institutions use their own definition of a postdoc when reporting.

School—A set of units for which a coordinator can provide data; this is typically a graduate school, medical school, nursing school, school of public health, or a branch campus. Schools are not discussed in this report.

Unit—For reporting purposes, units typically correspond to academic departments, programs, research centers, or health care facilities within the same GSS field.

NOTES

1 See "New institution eligibility screening for the Survey of Graduate Students and Postdoctorates in Science and Engineering: Methodology Report." For more information please contact the GSS Project Officer: Kelly H. Kang, Human Resources Statistics Program, National Center for Science and Engineering Statistics, National Science Foundation, 4201 Wilson Boulevard, Suite 965, Arlington, VA 22230 (kkang@nsf.gov; 703-292-7796).

2 Subsequent to this analysis, a total of 154 potentially eligible institutions were added to the data collection in 2014. These included the 140 institutions identified during the 2011 review that remained eligible at the end of the 2013 data collection and 14 additional institutions identified by the new annual frame coverage review. By the end of the 2014 data collection, two of these new institutions had been classified as ineligible and one had merged with an extant institution in 2013. As a result, the final 2014 GSS included 151 new institutions (see appendix A for more information about the GSS frame reviews).

3 See "New institution eligibility screening for the Survey of Graduate Students and Postdoctorates in Science and Engineering: Methodology Report."

4 These institutions are hereafter referred to as for-profit institutions.

5 *Percentage point* (*PP*) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the consequences of adding the new frame institutions in the GSS trend data. For example, part-time graduate students represented 25.9% of the graduate students in the core institutions and 26.8% in the core plus new frame institutions. Thus, adding the new frame institutions will result in a 0.9 PP increase in part-time graduate enrollment in 2013.

6 In 2013, Rowan University (a new frame institution) acquired the New Jersey School of Osteopathic Medicine previously of the University of Medicine and Dentistry of New Jersey. In doing so, Rowan University became a mix of new frame and core institution. For this analysis, Rowan University is considered a new frame institution, but the students enrolled in the New Jersey School of Osteopathic Medicine are considered part of the core institution. Thus some numbers in this report will not match published figures for the 2013 and 2014 GSS, where Rowan was counted as a core institution.

7 Appendix tables B-1 and B-2 present detailed estimates of graduate enrollment in computer sciences and multidisciplinary and interdisciplinary studies, respectively.

8 For details on the UMUC online master's and doctoral degrees, see http://www.umuc.edu/academic-programs/masters-degrees/index.cfm.

9 More detailed information is available in appendix tables B-4 and B-5. Appendix table B-4 divides the students in core and new frame institutions by the public and private status and nonprofit status of the institutions. Appendix table B-5 examines the student characteristics based on enrollment in core and new frame institutions; appendix tables B-5 and B-6 include estimates of the percentage of each type of student enrolled in new frame institutions, the percentage of core and new frame institution students, and the percentage and percentage point change in the overall estimates as a result of adding new frame institutions.

10 Underrepresented minorities include blacks, Hispanics, American Indians or Alaska Natives, and Native Hawaiians or Other Pacific Islanders.

11 See the "Mission" statements at http://www.waldenu.edu/about/who-we-are/ and http://www.alliant.edu/about-alliant/mission.php/.

12 See the HERD Survey Design target population at http://www.nsf.gov/statistics/srvyherd/#sd/.

APPENDIX A: SUMMARY OF GSS FRAME EVALUATIONS

As a part of the 2006 GSS survey redesign, the methodological research was conducted to examine the coverage of GSS-eligible institutions. The research identified 605 institutions that were not included in the 2006 survey frame but could be eligible. The vast majority of the potentially eligible institutions (537) were identified based on their reporting of the master's or doctoral degree awards using at least one GSS-eligible Classification of Instructional Programs (CIP) code to the 2006 Integrated Postsecondary Education Data System (IPEDS) Completions Survey.[1]

The evaluation began in 2008 with the screening of 80 of the potentially eligible institutions. In this study, 32 of the 80 had masters programs in science, engineering, and health. Follow-up screening over the next two cycles determined that 19 of these institutions had only practitioner-focused programs, making them ineligible and leaving 13 eligible institutions.

A comprehensive review began in 2010 with a review of 2009 IPEDS Completions survey data and other sources. This yielded 529 institutions, which were further investigated using two additional measures: an institution Web site review and a GSS Eligibility Screening Survey. The graduate degree program information on the Web sites for potentially eligible new institutions were reviewed to determine the types of degrees offered, research or thesis requirements for the degree, and whether the degree program was primarily to prepare the students for professional licensure. Two reviewers independently assessed the eligibility of each degree programs and noted any special circumstances, such as discontinuation of program(s).

The GSS Eligibility Screening Survey was administered to these institutions in spring 2011. The survey, primarily conducted via the Web, was designed to collect more information about potentially eligible degree programs offered at the institutions. For disciplinary fields that had degree exclusions (e.g., "excludes PsyD" for GSS code 803), the survey confirmed whether the institution only offered the excluded degree type. For fields where practitioner-oriented degrees are common, the survey asked special questions about the research and management orientation of the program.[2]

The frame evaluation process resulted in 159 newly eligible institutions that were surveyed for the first time in the 2011 GSS. The total number of newly eligible institutions was 165 at the end of the 2011 cycle—152 of the 159 institutions identified in the frame evaluation process remained as eligible and all 13 institutions identified from the 2008 New Institution Pilot Study.

The intention was to include the data from these new frame institutions in the 2011 GSS data release, but after an initial assessment of the data reported by the new frame institutions, NCSES determined that more years of data were needed to conclusively verify the degree program eligibility and to work with the new institutions to improve their data reporting. During the 2012 and 2013 survey cycles, 25 additional institutions were determined as ineligible as more data became available about their degree programs, resulting in 140 newly eligible institutions for the 2014 GSS. A frame review conducted as part of the 2014 GSS resulted in an additional 14 institutions added to the new frame. Ultimately, 151 institutions were added in 2014, reflecting the 140 institutions discussed here, the 14 institutions identified in 2014 (with one merger and two other institutions becoming ineligible in 2014). As discussed in this report, though the number of eligible new frame institutions in 2013 was substantial (140) relative to the number of core institutions (563), the new frame institutions had substantially fewer units and GSS-eligible graduate students than their counterparts in the core institution. (See figure 4.)

The data collected from the newly eligible institutions will be incorporated into the published GSS data starting in 2014. For more information please contact the GSS Project Officer.

NOTES

1 Hudson J, Zwieg E, Copello E. 2008. GSS Population Coverage. Report to the National Science Foundation. Research Triangle Park, NC: RTI International.

2 Lennon J, Hudson J, Zwieg E, Bennett C, Friedman J, Rogers J. 2013. New institution eligibility screening for the Survey of Graduate Students and Postdoctorates in Science and Engineering. Report to the National Science Foundation. Research Triangle Park, NC: RTI International.

APPENDIX B: SUPPLEMENTAL DETAILED TABLES

TABLE B-1. Changes in the computer science graduate student estimates due to adding newly eligible institutions, by student characteristics: 2013

Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All computer science graduate students	6,226	56,339	62,565	11.1	100.0	100.0	100.0	-
Full-time	1,520	39,268	40,788	3.9	24.4	69.7	65.2	-4.5
Part-time	4,706	17,071	21,777	27.6	75.6	30.3	34.8	4.5
Female	1,910	14,688	16,598	13.0	30.7	26.1	26.5	0.5
Male	4,316	41,651	45,967	10.4	69.3	73.9	73.5	-0.5
U.S. citizens and permanent residents[b]	5,018	24,191	29,209	20.7	80.6	42.9	46.7	3.7
Hispanic or Latino	410	1,681	2,091	24.4	8.2	6.9	7.2	0.2
Not Hispanic or Latino								
American Indian or Alaska Native	21	95	116	22.1	0.4	0.4	0.4	0.0
Asian	430	3,547	3,977	12.1	8.6	14.7	13.6	-1.0
Black or African American	1,451	2,169	3,620	66.9	28.9	9.0	12.4	3.4
Native Hawaiian or Other Pacific Islander	22	44	66	50.0	0.4	0.2	0.2	0.0
White	2,082	13,972	16,054	14.9	41.5	57.8	55.0	-2.8
More than one race	149	428	577	34.8	3.0	1.8	2.0	0.2
Unknown race and ethnicity	453	2,255	2,708	20.1	9.0	9.3	9.3	-0.1
Temporary visa holders	1,208	32,148	33,356	3.8	19.4	57.1	53.3	-3.7
Primary source of support[c]								
Federal	82	5,503	5,585	1.5	5.4	14.0	13.7	-0.3
Institutional	100	10,334	10,434	1.0	6.6	26.3	25.6	-0.7
Other nonfederal	13	1,499	1,512	0.9	0.9	3.8	3.7	-0.1
Self-support	1,325	21,932	23,257	6.0	87.2	55.9	57.0	1.2
Primary mechanism of support[c]								
Fellowships	8	1,820	1,828	0.4	0.5	4.6	4.5	-0.2
Traineeships	29	131	160	22.1	1.9	0.3	0.4	0.1
Research assistants	53	7,675	7,728	0.7	3.5	19.5	18.9	-0.6
Teaching assistants	5	4,957	4,962	0.1	0.3	12.6	12.2	-0.5
Other (excluding self-support)	100	2,753	2,853	3.6	6.6	7.0	7.0	0.0
Self-support	1,325	21,932	23,257	6.0	87.2	55.9	57.0	1.2
Institutional control								
Public	4,313	37,431	41,744	11.5	69.3	66.4	66.7	0.3
Private, nonprofit	1,913	18,694	20,607	10.2	30.7	33.2	32.9	-0.2
Private, for-profit	0	214	214	0.0	0.0	0.4	0.3	0.0
Carnegie classification								
Research universities	0	40,307	40,307	0.0	0.0	71.5	64.4	-7.1
Other doctoral universities	132	4,362	4,494	3.0	2.1	7.7	7.2	-0.6
All other colleges and universities	6,094	11,670	17,764	52.2	97.9	20.7	28.4	7.7

- = no value possible.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[c] Financial support data are available only for full-time students.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE B-2. Changes in multidisciplinary and interdisciplinary graduate student estimates, by student characteristics and core or new frame status: 2013

Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All graduate students	675	5,892	6,567	11.5	100.0	100.0	100.0	-
Full-time	530	3,873	4,403	13.7	78.5	65.7	67.0	1.3
Part-time	145	2,019	2,164	7.2	21.5	34.3	33.0	-1.3
Female	342	2,871	3,213	11.9	50.7	48.7	48.9	0.2
Male	333	3,021	3,354	11.0	49.3	51.3	51.1	-0.2
U.S. citizens and permanent residents[b]	581	4,735	5,316	12.3	86.1	80.4	81.0	0.6
Hispanic or Latino	34	393	427	8.7	5.9	8.3	8.0	-0.3
Not Hispanic or Latino								
American Indian or Alaska Native	3	30	33	10.0	0.5	0.6	0.6	0.0
Asian	61	287	348	21.3	10.5	6.1	6.5	0.5
Black or African American	96	334	430	28.7	16.5	7.1	8.1	1.0
Native Hawaiian or Other Pacific Islander	0	11	11	0.0	0.0	0.2	0.2	0.0
White	336	3,018	3,354	11.1	57.8	63.7	63.1	-0.6
More than one race	13	105	118	12.4	2.2	2.2	2.2	0.0
Unknown race and ethnicity	38	557	595	6.8	6.5	11.8	11.2	-0.6
Temporary visa holders	94	1,157	1,251	8.1	13.9	19.6	19.0	-0.6
Primary source of support[c]								
Federal	21	727	748	2.9	4.0	18.8	17.0	-1.8
Institutional	262	1,620	1,882	16.2	49.4	41.8	42.7	0.9
Other nonfederal	29	190	219	15.3	5.5	4.9	5.0	0.1
Self-support	218	1,336	1,554	16.3	41.1	34.5	35.3	0.8
Primary mechanism of support[c]								
Fellowships	30	351	381	8.5	5.7	9.1	8.7	-0.4
Traineeships	0	135	135	0.0	0.0	3.5	3.1	-0.4
Research assistants	20	1,002	1,022	2.0	3.8	25.9	23.2	-2.7
Teaching assistants	47	646	693	7.3	8.9	16.7	15.7	-0.9
Other (not including self-support)	215	403	618	53.3	40.6	10.4	14.0	3.6
Self-support	218	1,336	1,554	16.3	41.1	34.5	35.3	0.8
Institutional control								
Public	166	4,443	4,609	3.7	24.6	75.4	70.2	-5.2
Private, nonprofit	296	1,449	1,745	20.4	43.9	24.6	26.6	2.0
Private, for-profit	0	0	0	0.0	0.0	0.0	0.0	0.0
Carnegie classification								
Research universities	0	4,469	4,469	0.0	0.0	75.8	68.1	-7.8
Other doctoral universities	0	468	468	0.0	0.0	7.9	7.1	-0.8
All other colleges and universities	675	955	1,630	70.7	100.0	16.2	24.8	8.6

- = no value possible.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[c] Financial support data are available only for full-time students.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE B-3. Characteristics of computer science graduate students at University of Maryland, University College (UMUC): 2013

Characteristics	Count			Percent of UMUC computer science graduate students		Percent distribution			
	Computer sciences		All fields, all new frame institutions			Computer sciences		All fields, all new frame institutions	All new frame without UMUC computer science
	UMUC	All new frame institutions		All computer sciences	All fields	UMUC	All new frame institutions		
All graduate students	3,384	6,226	20,772	54.4	16.3	100.0	100.0	100.0	100.0
Full-time	61	1,520	9,529	4.0	0.6	1.8	24.4	45.9	54.5
Part-time	3,323	4,706	11,243	70.6	29.6	98.2	75.6	54.1	45.5
Female	1,112	1,910	11,174	58.2	10.0	32.9	30.7	53.8	57.9
Male	2,272	4,316	9,598	52.6	23.7	67.1	69.3	46.2	42.1
U.S. citizens and permanent residents[a]	3,338	5,018	17,957	66.5	18.6	98.6	80.6	86.4	84.1
Hispanic or Latino	239	410	2,363	58.3	10.1	7.1	6.6	11.4	12.2
Not Hispanic or Latino									
American Indian or Alaska Native	16	21	130	76.2	12.3	0.5	0.3	0.6	0.7
Asian	257	430	1,045	59.8	24.6	7.6	6.9	5.0	4.5
Black or African American	1,147	1,451	3,534	79.0	32.5	33.9	23.3	17.0	13.7
Native Hawaiian or Other Pacific Islander	14	22	39	63.6	35.9	0.4	0.4	0.2	0.1
White	1,234	2,082	8,696	59.3	14.2	36.5	33.4	41.9	42.9
More than one race	89	149	447	59.7	19.9	2.6	2.4	2.2	2.1
Unknown race and ethnicity	342	453	1,703	75.5	20.1	10.1	7.3	8.2	7.8
Temporary visa holders	46	1,208	2,815	3.8	1.6	1.4	19.4	13.6	15.9
Primary source of support[b]									
Federal	2	82	412	2.4	0.5	0.1	1.3	2.0	2.4
Institutional	1	100	1,574	1.0	0.1	0.0	1.6	7.6	9.0
Other nonfederal	0	13	149	0.0	0.0	0.0	0.2	0.7	0.9
Self-support	58	1,325	7,394	4.4	0.8	1.7	21.3	35.6	42.2

[a] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[b] Financial support data are available only for full-time students.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE B-4. Characteristics of graduate students in new frame and core institutions, by institutional control: 2013

Characteristics	Count						Percent distribution					
	Public institutions		Private nonprofit institutions		For-profit core institutions	All institutions	Public institutions		Private nonprofit institutions		For-profit core institutions	All institutions
	New frame	Core	New frame	Core			New frame	Core	New frame	Core		
All graduate students	10,035	446,818	10,737	176,573	9,619	653,782	100.0	100.0	100.0	100.0	100.0	100.0
Full-time enrollment	2,911	325,944	6,618	137,372	5,637	478,482	29.0	72.9	61.6	77.8	58.6	73.2
Part-time enrollment	7,124	120,874	4,119	39,201	3,982	175,300	71.0	27.1	38.4	22.2	41.4	26.8
Female	4,654	201,573	6,520	82,757	7,050	302,554	46.4	45.1	60.7	46.9	73.3	46.3
Male	5,381	245,245	4,217	93,816	2,569	351,228	53.6	54.9	39.3	53.1	26.7	53.7
U.S. citizens and permanent residents[a]	9,401	311,723	8,556	115,093	9,480	454,253	93.7	69.8	79.7	65.2	98.6	69.5
Hispanic or Latino	763	26,480	1,600	10,126	677	39,646	8.1	8.5	18.7	8.8	7.1	8.7
Not Hispanic or Latino												
American Indian or Alaska Native	78	1,984	52	453	80	2,647	0.8	0.6	0.6	0.4	0.8	0.6
Asian	524	24,338	521	12,497	302	38,182	5.6	7.8	6.1	10.9	3.2	8.4
Black or African American	2,528	24,345	1,006	9,039	3,813	40,731	26.9	7.8	11.8	7.9	40.2	9.0
Native Hawaiian or Other Pacific Islander	22	741	17	274	22	1,076	0.2	0.2	0.2	0.2	0.2	0.2
White	4,545	209,442	4,151	68,417	3,495	290,050	48.3	67.2	48.5	59.4	36.9	63.9
More than one race	234	6,284	213	2,613	263	9,607	2.5	2.0	2.5	2.3	2.8	2.1
Unknown race and ethnicity	707	18,109	996	11,674	828	32,314	7.5	5.8	11.6	10.1	8.7	7.1
Temporary visa holders	634	135,095	2,181	61,480	139	199,529	6.3	30.2	20.3	34.8	1.4	30.5
Primary source of support[b]												
Federal	217	53,344	195	23,351	145	77,252	7.5	16.4	2.9	17.0	2.6	16.1
Institutional	788	141,949	786	47,456	35	191,014	27.1	43.6	11.9	34.5	0.6	39.9
Other nonfederal	25	19,291	124	6,570	24	26,034	0.9	5.9	1.9	4.8	0.4	5.4
Self-support	1,881	111,360	5,513	59,995	5,433	184,182	64.6	34.2	83.3	43.7	96.4	38.5
Primary mechanism of support among funded students[c]												
Fellowships	69	22,818	221	20,614	0	43,722	6.7	10.6	20.0	26.6	0.0	14.9
Traineeships	30	5,132	55	5,382	0	10,599	2.9	2.4	5.0	7.0	0.0	3.6
Research assistants	324	88,519	103	27,858	0	116,804	31.5	41.3	9.3	36.0	0.0	39.7
Teaching assistants	312	74,388	53	14,301	0	89,054	30.3	34.7	4.8	18.5	0.0	30.3
Other	295	23,727	673	9,222	204	34,121	28.6	11.1	60.9	11.9	100.0	11.6
Field												
Science	8,998	289,208	8,050	120,799	7,244	434,299	89.7	64.7	75.0	68.4	75.3	66.4
Agricultural sciences	481	15,328	38	1,101	0	16,948	4.8	3.4	0.4	0.6	0.0	2.6
Biological sciences	990	52,439	1,422	24,210	0	79,061	9.9	11.7	13.2	13.7	0.0	12.1
Communication	219	8,160	442	2,934	20	11,775	2.2	1.8	4.1	1.7	0.2	1.8
Computer sciences	4,313	37,431	1,913	18,694	214	62,565	43.0	8.4	17.8	10.6	2.2	9.6
Earth, atmospheric, and ocean sciences	66	12,931	212	2,885	0	16,094	0.7	2.9	2.0	1.6	0.0	2.5
Family and consumer sciences and human sciences	54	3,619	0	395	0	4,068	0.5	0.8	0.0	0.2	0.0	0.6
Mathematical sciences	330	18,935	48	5,869	0	25,182	3.3	4.2	0.4	3.3	0.0	3.9

TABLE B-4. Characteristics of graduate students in new frame and core institutions, by institutional control: 2013

Characteristics	Count						Percent distribution					
	Public institutions		Private nonprofit institutions		For-profit core institutions	All institutions	Public institutions		Private nonprofit institutions		For-profit core institutions	All institutions
	New frame	Core	New frame	Core			New frame	Core	New frame	Core		
Multidisciplinary and interdisciplinary studies	166	4,443	509	1,449	0	6,567	1.7	1.0	4.7	0.8	0.0	1.0
Neuroscience	0	2,554	0	2,241	0	4,795	0.0	0.6	0.0	1.3	0.0	0.7
Physical sciences	106	29,587	30	10,432	0	40,155	1.1	6.6	0.3	5.9	0.0	6.1
Psychology	460	29,907	2,094	19,246	4,949	56,656	4.6	6.7	19.5	10.9	51.5	8.7
Social sciences	1,813	73,874	1,342	31,343	2,061	110,433	18.1	16.5	12.5	17.8	21.4	16.9
Engineering	294	110,577	739	42,472	0	154,082	2.9	24.7	6.9	24.1	0.0	23.6
Health	743	47,033	1,948	13,302	2,375	65,401	7.4	10.5	18.1	7.5	24.7	10.0
Carnegie classification												
Research universities	0	348,745	0	130,680	0	479,425	0.0	78.1	0.0	74.0	0.0	73.3
Other doctoral universities	266	18,933	1,747	17,107	8,884	46,937	2.7	4.2	16.3	9.7	92.4	7.2
All other colleges and universities	9,769	79,140	8,990	28,786	735	127,420	97.3	17.7	83.7	16.3	7.6	19.5

[a] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[b] Financial support data are available only for full-time students.

[c] Excludes primarily self-supported graduate students.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.

TABLE B-5. Characteristics of graduate students in new frame and core institutions: 2013

Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
All graduate students	20,772	633,010	653,782	3.3	100.0	100.0	100.0	-
Full-time	9,529	468,953	478,482	2.0	45.9	74.1	73.2	-0.9
Part-time	11,243	164,057	175,300	6.9	54.1	25.9	26.8	0.9
Female	11,174	291,380	302,554	3.8	53.8	46.0	46.3	0.2
Male	9,598	341,630	351,228	2.8	46.2	54.0	53.7	-0.2
U.S. citizens and permanent residents[b]	17,957	436,296	454,253	4.1	86.4	68.9	69.5	0.6
Hispanic or Latino	2,363	37,283	39,646	6.3	13.2	8.5	8.7	0.2
Not Hispanic or Latino								
American Indian or Alaska Native	130	2,517	2,647	5.2	0.7	0.6	0.6	0.0
Asian	1,045	37,137	38,182	2.8	5.8	8.5	8.4	-0.1
Black or African American	3,534	37,197	40,731	9.5	19.7	8.5	9.0	0.4
Native Hawaiian or Other Pacific Islander	39	1,037	1,076	3.8	0.2	0.2	0.2	0.0
White	8,696	281,354	290,050	3.1	48.4	64.5	63.9	-0.6
More than one race	447	9,160	9,607	4.9	2.5	2.1	2.1	0.0
Unknown race and ethnicity	1,703	30,611	32,314	5.6	9.5	7.0	7.1	0.1
Temporary visa holders	2,815	196,714	199,529	1.4	13.6	31.1	30.5	-0.6
Primary source of support[c]								
Federal	412	76,840	77,252	0.5	4.3	16.4	16.1	-0.2
Institutional	1,574	189,440	191,014	0.8	16.5	40.4	39.9	-0.5
Other nonfederal	149	25,885	26,034	0.6	1.6	5.5	5.4	-0.1
Self-support	7,394	176,788	184,182	4.2	77.6	37.7	38.5	0.8
Primary mechanism of support among funded students[d]								
Fellowships	290	43,432	43,722	0.7	13.6	14.9	14.9	0.0
Traineeships	85	10,514	10,599	0.8	4.0	3.6	3.6	0.0
Research assistants	427	116,377	116,804	0.4	20.0	39.8	39.7	-0.1
Teaching assistants	365	88,689	89,054	0.4	17.1	30.4	30.3	-0.1
Other mechanisms	968	33,153	34,121	2.9	45.3	11.3	11.6	0.2
Institutional control								
Public	10,035	446,818	456,853	2.2	48.3	70.6	69.9	-0.7
Private, nonprofit	10,737	176,573	187,310	6.1	51.7	27.9	28.7	0.8
Private, for-profit	0	9,619	9,619	0.0	0.0	1.5	1.5	0.0
Carnegie classification								
Research universities	0	479,425	479,425	0.0	0.0	75.7	73.3	-2.4
Other doctoral universities	2,013	44,924	46,937	4.5	9.7	7.1	7.2	0.1
All other colleges and universities	18,759	108,661	127,420	17.3	90.3	17.2	19.5	2.3
Detailed field								
Science	17,048	417,251	434,299	4.1	82.1	65.9	66.4	0.5
Agricultural sciences	519	16,429	16,948	3.2	2.5	2.6	2.6	0.0
Biological sciences	2,412	76,649	79,061	3.1	11.6	12.1	12.1	0.0
Anatomy	16	527	543	3.0	0.1	0.1	0.1	0.0
Biochemistry	0	4,970	4,970	0.0	0.0	0.8	0.8	0.0
Biology	594	16,004	16,598	3.7	2.9	2.5	2.5	0.0
Biometry and epidemiology	58	8,478	8,536	0.7	0.3	1.3	1.3	0.0
Biophysics	0	952	952	0.0	0.0	0.2	0.1	0.0
Botany	0	1,878	1,878	0.0	0.0	0.3	0.3	0.0
Cell and molecular biology	64	6,543	6,607	1.0	0.3	1.0	1.0	0.0
Ecology	2	1,437	1,439	0.1	0.0	0.2	0.2	0.0
Entomology and parasitology	0	1,278	1,278	0.0	0.0	0.2	0.2	0.0
Genetics	30	2,315	2,345	1.3	0.1	0.4	0.4	0.0
Microbiology, immunology, and virology	17	4,961	4,978	0.3	0.1	0.8	0.8	0.0

TABLE B-5. Characteristics of graduate students in new frame and core institutions: 2013

Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
Nutrition	306	5,387	5,693	5.7	1.5	0.9	0.9	0.0
Pathology	0	1,112	1,112	0.0	0.0	0.2	0.2	0.0
Pharmacology	0	2,979	2,979	0.0	0.0	0.5	0.5	0.0
Physiology	129	3,224	3,353	4.0	0.6	0.5	0.5	0.0
Zoology	48	1,188	1,236	4.0	0.2	0.2	0.2	0.0
Biological sciences nec	1,148	13,416	14,564	8.6	5.5	2.1	2.2	0.1
Communication	661	11,114	11,775	5.9	3.2	1.8	1.8	0.0
Computer sciences	6,226	56,339	62,565	11.1	30.0	8.9	9.6	0.7
Earth, atmospheric, and ocean sciences	278	15,816	16,094	1.8	1.3	2.5	2.5	0.0
Atmospheric sciences	11	1,534	1,545	0.7	0.1	0.2	0.2	0.0
Geosciences	0	8,754	8,754	0.0	0.0	1.4	1.3	0.0
Ocean sciences	126	2,682	2,808	4.7	0.6	0.4	0.4	0.0
Earth, atmospheric, and ocean sciences	141	2,846	2,987	5.0	0.7	0.4	0.5	0.0
Family and consumer sciences and human sciences	54	4,014	4,068	1.3	0.3	0.6	0.6	0.0
Mathematical sciences	378	24,804	25,182	1.5	1.8	3.9	3.9	-0.1
Mathematics and applied mathematics	275	18,323	18,598	1.5	1.3	2.9	2.8	0.0
Statistics	103	6,481	6,584	1.6	0.5	1.0	1.0	0.0
Multidisciplinary and interdisciplinary studies	675	5,463	6,138	12.4	3.2	0.9	0.9	0.1
Nanotechnology[e]	0	429	429	0.0	0.0	0.1	0.1	0.0
Neuroscience	0	4,795	4,795	0.0	0.0	0.8	0.7	0.0
Physical sciences	136	42,273	42,409	0.3	0.7	6.7	6.5	-0.2
Astronomy	0	1,250	1,250	0.0	0.0	0.2	0.2	0.0
Chemistry	37	22,949	22,986	0.2	0.2	3.6	3.5	-0.1
Physics	73	15,239	15,312	0.5	0.4	2.4	2.3	-0.1
Physical science nec	26	581	607	4.5	0.1	0.1	0.1	0.0
Psychology	2,554	54,102	56,656	4.7	12.3	8.5	8.7	0.1
Psychology, combined	356	15,960	16,316	2.2	1.7	2.5	2.5	0.0
Psychology, except clinical	1,863	28,233	30,096	6.6	9.0	4.5	4.6	0.1
Clinical psychology	335	9,909	10,244	3.4	1.6	1.6	1.6	0.0
Social sciences	3,155	107,278	110,433	2.9	15.2	16.9	16.9	-0.1
Agricultural economics	0	1,916	1,916	0.0	0.0	0.3	0.3	0.0
Anthropology (cultural and social)	32	8,172	8,204	0.4	0.2	1.3	1.3	0.0
Economics	125	14,819	14,944	0.8	0.6	2.3	2.3	-0.1
Geography	28	4,891	4,919	0.6	0.1	0.8	0.8	0.0
History and philosophy of science	3	391	394	0.8	0.0	0.1	0.1	0.0
Linguistics	0	3,509	3,509	0.0	0.0	0.6	0.5	0.0
Political science	85	15,180	15,265	0.6	0.4	2.4	2.3	-0.1
International relations and national security[e]	56	3,902	3,958	1.4	0.3	0.6	0.6	0.0
Public administration[e]	1,662	22,499	24,161	7.4	8.0	3.6	3.7	0.1
Public policy analysis[e]	36	6,830	6,866	0.5	0.2	1.1	1.1	0.0
Sociology	78	8,960	9,038	0.9	0.4	1.4	1.4	0.0
Sociology and anthropology	0	228	228	0.0	0.0	0.0	0.0	0.0
Social sciences nec	660	11,016	11,676	6.0	3.2	1.7	1.8	0.0
Criminal justice-safety studies[e]	390	4,965	5,355	7.9	1.9	0.8	0.8	0.0
Engineering	1,033	153,049	154,082	0.7	5.0	24.2	23.6	-0.6
Aerospace engineering	0	5,181	5,181	0.0	0.0	0.8	0.8	0.0
Agricultural engineering	0	1,040	1,040	0.0	0.0	0.2	0.2	0.0
Biological and biosystems engineering[e]	22	602	624	3.7	0.1	0.1	0.1	0.0
Architecture	0	2,176	2,176	0.0	0.0	0.3	0.3	0.0
Biomedical engineering	0	9,198	9,198	0.0	0.0	1.5	1.4	0.0
Chemical engineering	0	9,698	9,698	0.0	0.0	1.5	1.5	0.0

TABLE B-5. Characteristics of graduate students in new frame and core institutions: 2013

Characteristics	Count				Percent distribution			
	New frame institutions	Core institutions	All institutions	Percent change	New frame institutions	Core institutions	All institutions	Percentage point change[a]
Civil engineering	84	20,110	20,194	0.4	0.4	3.2	3.1	-0.1
Electrical engineering	709	45,562	46,271	1.6	3.4	7.2	7.1	-0.1
Engineering science and engineering physics	10	2,142	2,152	0.5	0.0	0.3	0.3	0.0
Industrial and manufacturing engineering	6	14,363	14,369	0.0	0.0	2.3	2.2	-0.1
Mechanical engineering	100	24,087	24,187	0.4	0.5	3.8	3.7	-0.1
Metallurgical and materials engineering	52	4,890	4,942	1.1	0.3	0.8	0.8	0.0
Materials sciences[e]	0	2,254	2,254	0.0	0.0	0.4	0.3	0.0
Mining engineering	0	357	357	0.0	0.0	0.1	0.1	0.0
Nuclear engineering	0	1,459	1,459	0.0	0.0	0.2	0.2	0.0
Petroleum engineering	0	1,609	1,609	0.0	0.0	0.3	0.2	0.0
Engineering nec	50	8,321	8,371	0.6	0.2	1.3	1.3	0.0
Health	2,691	62,710	65,401	4.3	13.0	9.9	10.0	0.1
Clinical medicine	1,759	26,362	28,121	6.7	8.5	4.2	4.3	0.1
Anesthesiology	0	7	7	0.0	0.0	0.0	0.0	0.0
Cardiology	0	32	32	0.0	0.0	0.0	0.0	0.0
Oncology and cancer research	0	103	103	0.0	0.0	0.0	0.0	0.0
Endocrinology	0	42	42	0.0	0.0	0.0	0.0	0.0
Hematology	0	1	1	0.0	0.0	0.0	0.0	0.0
Obstetrics and gynecology	0	68	68	0.0	0.0	0.0	0.0	0.0
Otorhinolaryngology	0	1	1	0.0	0.0	0.0	0.0	0.0
Preventive medicine and community health	1,668	23,909	25,577	7.0	8.0	3.8	3.9	0.1
Pulmonary disease	0	11	11	0.0	0.0	0.0	0.0	0.0
Radiology	32	201	233	15.9	0.2	0.0	0.0	0.0
Surgery	0	8	8	0.0	0.0	0.0	0.0	0.0
Clinical medicine nec	59	1,979	2,038	3.0	0.3	0.3	0.3	0.0
Other health	932	36,348	37,280	2.6	26.4	97.7	91.5	-6.2
Communication disorders sciences	371	14,113	14,484	2.6	1.8	2.2	2.2	0.0
Dental sciences	0	1,914	1,914	0.0	0.0	0.3	0.3	0.0
Nursing	105	4,969	5,074	2.1	0.5	0.8	0.8	0.0
Pharmaceutical sciences	100	4,137	4,237	2.4	0.5	0.7	0.6	0.0
Veterinary sciences	0	1,919	1,919	0.0	0.0	0.3	0.3	0.0
Other health nec	356	9,296	9,652	3.8	1.7	1.5	1.5	0.0

- = no value possible.

nec = not elsewhere classified.

[a] Percentage point (PP) change is the percent distribution of all institutions minus the percent distribution of core institutions. The PP change (rather than the percent change) describes the impact of adding the new frame institutions on the current distribution.

[b] Ethnicity and race data are available only for U.S. citizens and permanent residents.

[c] Financial support data are available only for full-time students.

[d] Excludes primarily self-supported graduate students.

[e] Data collection field only; included within detailed field above in the published data.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2013.