

# Report on the 2012-2013 New Doctoral Recipients

William Yslas Vélez, James W. Maxwell, and Colleen Rose

This report presents a statistical profile of recipients of doctoral degrees awarded by departments in the mathematical sciences at universities in the United States during the period July 1, 2012, through June 30, 2013. Information in the report was provided by the departments that awarded the degrees with additional information provided by the individual new doctoral recipients. The report includes an analysis of the fall 2013 employment plans of 2012–2013 doctoral recipients and a demographic profile summarizing characteristics of citizenship status, gender, and racial/ethnic group. This report is based on a complete census of the 2012–2013 new doctorates and includes information about 2012-2013 doctoral doctoral recipients that were not included in the preliminary report in the June/July 2014 issue of *Notices*.

Detailed information, including tables which traditionally appeared in this report, is available on the AMS website at www.ams.org/annual-survey/survey-reports.

### **Doctoral Degrees Awarded**

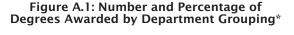
1,843 Ph.D.'s were awarded by the 315 doctoral-granting departments. We are pleased to report that we had a 100% response rate for this survey, and we thank the departments for their cooperation.

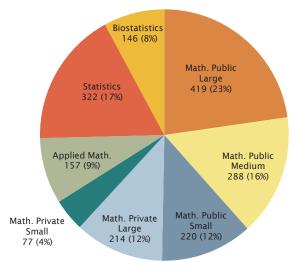
Math. Public Large reported the largest increase in the number of doctoral recipients, up 32 over the total of 387 reported for 2011-2012.

31% (573) of the new Ph.D.'s had a dissertation in statistics/ biostatistics, followed by algebra/number theory with 14% (258) applied mathematics with 12%(214).

Comparing Ph.D.'s awarded this year to last year, the number of Ph.D.'s awarded:

- Increased about 3% from 1,798 to 1,843.
- Increased 24% in Math. Public Small.
- Decreased 15% in Biostatistics.





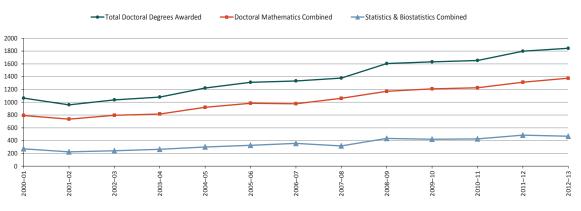
### Total Degrees Awarded: 1,843

\*See page 884 for a description of the department groupings.

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### **Doctoral Degrees Awarded**

### Figure A.2: New Ph.D.'s Awarded by Group

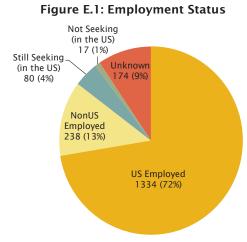


Comparing Ph.D.'s awarded this year with those awarded in 2002–2003:

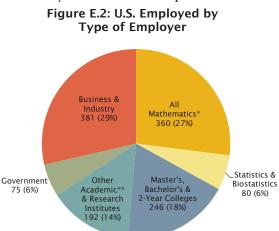
- Ph.D.'s awarded have increased more than 78% over the last 10 years.
- Degrees awarded by Doctoral Mathematics combined and by Statistics & Biostatistics Combined have increased 73% and 94%, respectively. Some of this latter increase is due to the increase in response rate among the Statistics & Biostatistics departments.

### **Employment**

The overall U.S. unemployment rate for the new doctoral recipients is 5.7%, down from 6.9% last year. (Details on the calculations are on page 884.) The employment plans are known for 1,669 of the 1,843 new doctoral recipients. The number of new doctoral recipients employed in the U.S. is 1,334, up 3% from last year's number of 1,300. 69% of Ph.D.'s employed in Doctoral Math. departments are in postdoc positions, up from 68% last year. The number of new Ph.D.'s taking positions in Business & Industry has increased to 381 this year compared to 340 last year. All groups showed an increase in Business & Industry and 56% of the increase was accounted for by the Statistics Group.



- 52% (692) of those who are employed in the U.S. are U.S. citizens, down slightly from 53% last year.
- 74% (642) of non-U.S. citizens whose employment status is known are employed in the U.S., the remaining 231 non-U.S. citizens are either employed outside of the U.S. or are unemployed.
- 6% (100) of all new Ph.D.'s are working at the institution which granted their degree, down from 13% last year. These individuals constitute 11% of total U.S. academic employed.
- 60% of those still seeking employment in the U.S. are U.S. citizens.

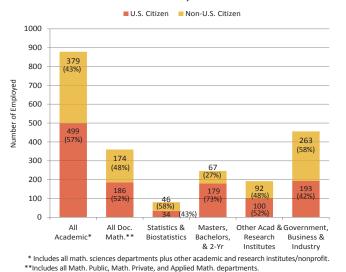


\*Includes all Math. Public, Math. Private, and Applied Math. departments.
\*\*Other Academic consists of departments outside the mathematical sciences including numerous medical related units.

- Total U.S. employed: 1,334
- U.S. academic hiring decreased slightly to 878 compared to 894 last year.
  - Goverment hiring increased 14% (from 66 to 75); all doctoralgranting groups except Math. Public Medium, Applied Math. and Biostatistics showed an increase in the number of Ph.D.'s taking positions in this sector.

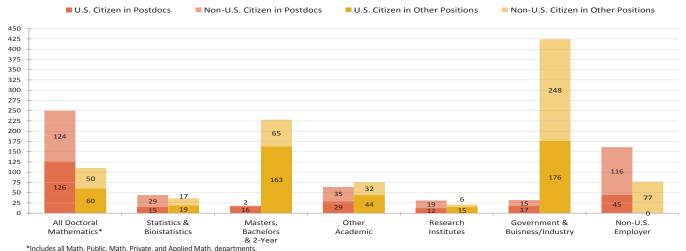
### Employment

#### Figure E.3: Employment in the U.S. by Type of Employer and Citizenship Total: 1,334



Total known to be employed: 1,572

- 38% (600) of the new Ph.D.'s that are employed are reported to be in postdoc positions, the same percentage as last year but up in number from 573.
- 57% of the new Ph.D.'s awarded by the Math. Private Large group are employed in postdocs, while only 16% of new Ph.D.'s awarded by the Math. Public Small group are in postdocs.
- 46% of the new Ph.D.'s having U.S. academic employment are in postdocs, the same as last year.



### Figure E.5: New Ph.D.'s Employment by Citizenship, Type of Position and Type of Employer

Of the U.S. citizens whose employment status is known 87% (692) are employed in the U.S. and of these:

- 32% are employed in Ph.D.-granting departments
- 40% are employed in all other academic categories

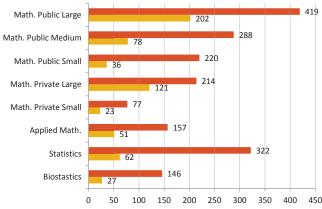
Total Ph.D.'s Awarded

• 28% are employed in government, business and industry

Figure E.4: Ph.D.'s Employed in Postdocs

by Degree-Granting Department Group

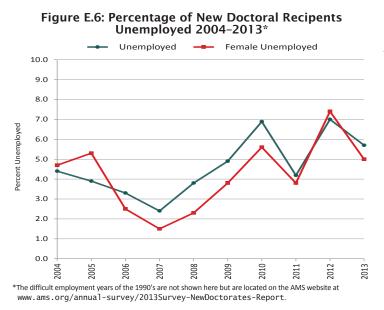
Subset Currently in Postdocs



27% of the new Ph.D.'s in postdoc positions are employed outside the U.S.; last year this percentage was 22%. 92% of the new Ph.D.'s employed in the Math. Private Large Group are in postdoc positions, up from 85% last year.

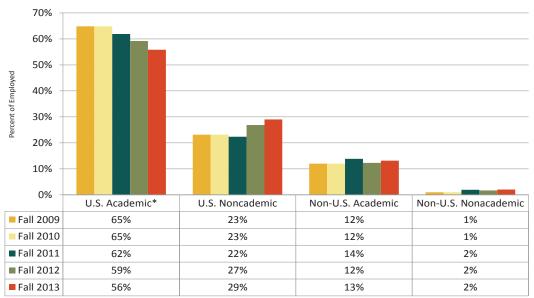
## Employment

Figure E.6 displays the U.S. unemployment rate for new doctorates; details on the calculations are on page 884.



Among new doctorates reported to be in the U.S.:

- Unemployment among those whose employment status is known is 5.7%, down from 6.9% for Fall 2012.
- 6.5% of U.S. citizens are unemployed, compared to 7.8% in Fall 2012.
- 4.7% of non-U.S. citizens are unemployed, compared to 6.0% in Fall 2012.
- new doctorates from the Math. Private Small Group reported the highest unemployment rate at 10.9%, down from 13.0% last year.
- new doctorates from the Biostatistics Group reported the lowest unemployment at 1.7%.



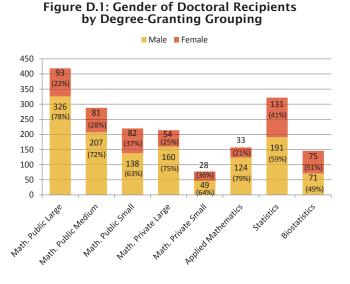
### Figure E.7: Percentage of Employed New Ph.D.'s by Type of Employer

\* Includes other academic departments and research institutes/other non-profits.

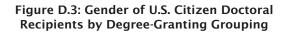
- U.S. academic hiring has dropped for the third consecutive year to 56% (a five-year low), while U.S. nonacademic hiring has jumped to 29% (a five-year high).
- Detailed information on new Ph.D.'s employed in the U.S. by degree-granting department group is available on the AMS website at www.ams.org/annual-survey/2013Survey-NewDoctorates-Report.

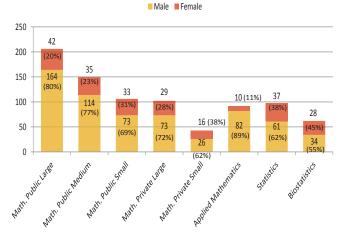
### **Demographics**

Gender and citizenship was known for all 1,843 new Ph.D.'s reported for 2012–2013. The number of U.S. citizens is 857 (47%) (down slightly from 48% last year). Females accounted for 27% of the U.S. citizen total (down from 28% last year). Non-U.S. citizens receiving a Ph.D. increased to 53% from 52% last year. 13% (81) of the non-U.S. citizens employed in the U.S. have permanent visa status (up from 11% last year).



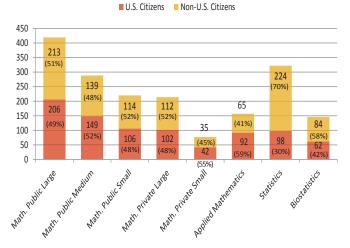
• Females account for 31% (577) of the 1,843 Ph.D.'s, the same percentage as last year.





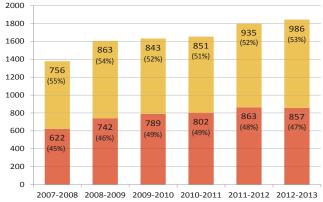
- 50% of the males and 40% of the females are U.S. citizens.
- Females accounted for 27% of the U.S. citizens.
- Among the U.S. citizens: 1 is American Indian or Alaska Native, 72 are Asian, 24 are Black or African American, 25 are Hispanic or Latino, 1 is Native Hawaiian or Other Pacific Islander, 707 are White, and 27 are of unknown race/ethnicity.

Figure D.2: Citizenship of Doctoral Recipients by Degree-Granting Grouping



All groups awarded less degrees to U.S. citizens than Non-U.S. citizens except Math. Public Medium, Math. Private Small, and Applied Math. which awarded 52%, 55% and 59% to U.S. citizens.





\*The increase shown from 2007–2008 to 2008–2009 is due in part to the increase in the response rate for statistics and biostatistics departments.

Looking at the last six years we see that:

- U.S. citizen counts which had been increasing steadily, decreased to 857 this year. While this is a slight decrease from last year, it is a 38% increase from Fall 2007–2008.
- Non-U.S. citizen counts have increased for the third consectuive year to 986. While this is a 30% increase from Fall 2007–2008, it represents a 5% increase from last year.

### Female New Doctoral Recipients

The proportion of female new doctoral recipients remains unchanged from last year at 31% this year. Of the 878 new Ph.D.'s hired into academic positions 32% (285) were women, up from 31% last year. 24% of those hired into postdoc positions were women, with 39% of the women in postdocs being U.S. citizens, down from 42% last year. The U.S. unemployment rate for females is 5.0%, compared to 5.9% for males and 5.7% overall.

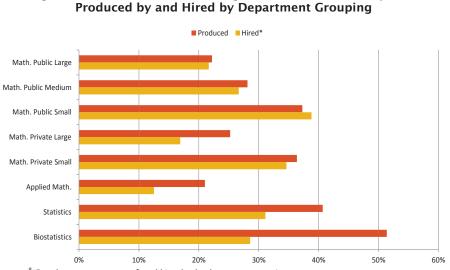


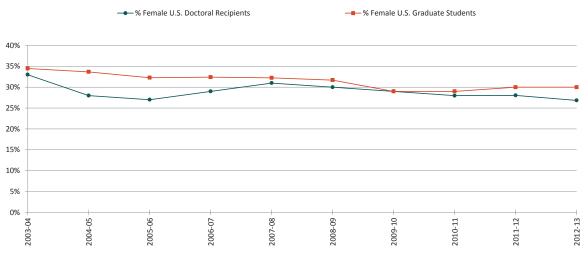
Figure F.1: Females as a Percentage of New Doctoral Recipients

### Table F.1: Number of Female New Doctoral Recipients Produced by and Hired by Department Groupings

Department Grouping	Females Produced	Females Hired
Math. Public Large	93	26
Math. Public Medium	81	16
Math. Public Small	82	26
Math. Private Large	54	12
Math. Private Small	28	9
Applied Math.	33	2
Statistics	131	14
Biostatistics	75	10

Females as a percentage of total hires by the department grouping.

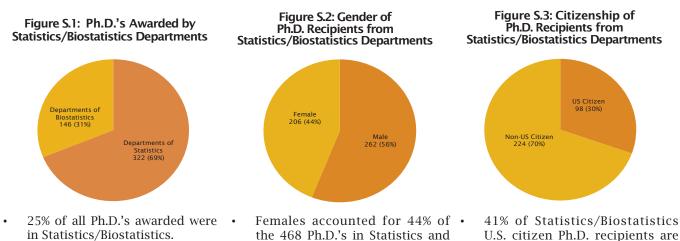
- 36% of those hired by Group B were women (down from 38% last year) and 31% of those hired by Group M were women (up from 29% last year).
- 46% of those hired into Research Institutes/Other non-profit positions were women (up from 37% last year).
- 32% of those hired into Government positions were women (down from 36% last year).
- 53% of the women employed in all doctoral groups are in postdoc positions, compared to 72% of males employed in these groups.



### Figure F.2: Females as a Percentage of U.S. Citizen Doctoral Recipients

## Ph.D.'s Awarded by Statistics and Biostatistics Departments

This section contains information about new doctoral recipients in these departments (59 statistics and 44 biostatistics departments). Statistics and Biostatistics departments produced 468 new doctorates, of which all had dissertations in statistics/biostatistics. This is a 4% decrease in the number reported for fall 2012 which was 485. In addition, Math. Public, Math. Private and Applied Math. departments combined had 105 Ph.D. recipients with dissertations in statistics. 34% (160) of the new Ph.D.'s awarded by Statistics and Biostatistics departments are U.S. citizens (while in the other groups combined 51% are U.S. citizens). The U.S. unemployment among this group of new Ph.D.'s is 2.1% up from 4.2%.



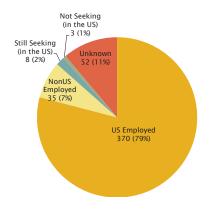
Biostatistics, compared to all other

groups combined, where 27% are

female.

• Females account for 41% of statistics and 51% of biostatistics Ph.D.'s awarded.

#### Figure S.4: Employment Status of Ph.D. Recipients from Statistics/Biostatistics Departments



Total Ph.D.'s Awarded: 468

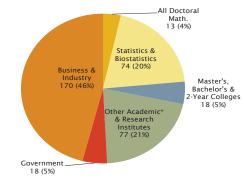
- 2.1% of Statistics/Biostatistics Ph.D.'s are unemployed compared to 6.4% among all other groups. This is down from 4.2% last year.
- Unemployment among new Ph.D.'s with dissertations in statistics/probability is 3.1%, down from 4.0%. Among all other dissertation groupings 5.7% are unemployed.

Figure S.5: U.S.-Employed Ph.D. Recipients from Statistics/Biostatistics Departments by Type of Employer

are females.

females, while in all other groups

combined 24% of the U.S. citizens



\*Other Academic consists of departments outside the mathematical sciences including numerous medical related units.

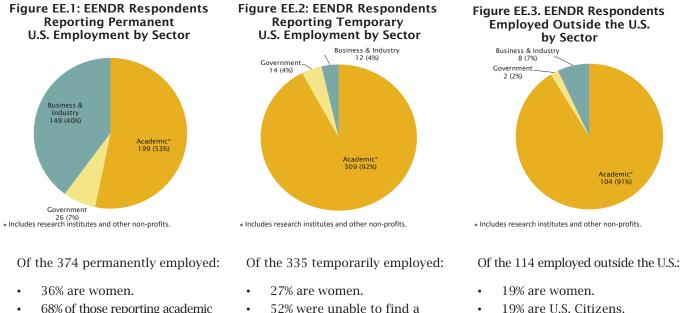
### Total U.S. Employed: 370

- 46% of Statistics/Biostatistics Ph.D.'s are employed in Business/Industry, compared to 23% in all other groups.
- 30% of those hired by statistics and biostatistics were females, compared to 25% in all other groups.

### Information from the Employment Experiences of New Doctorates (EENDR) Survey

This section contains additional information on employment gathered from a subset of the 2012–2013 new Ph.D.'s on the EENDR Survey. It expands on the details of employment which are not available through the departments.

The EENDR survey was sent to the 1,676 new PhD's for which departments provided current contact information by early October of 2013. Of these individuals 861 (51%) responded. The employment status is known for 851 of these individuals, the U.S. unemployment among this group is 2.6%. Of the 822 who reported being employed, 29% indicated they were actively looking for new employment.



- 68% of those reporting academic employment hold tenured/ tenure-track positions.
- 52% were unable to find a suitable permanent position (up from 39% last year).
- 74% are employed in postdocs and 43% of these reported they could not find a suitable permanent position.
- 75% are employed in postdocs.

### Table EE.1: Number and Percentage of EENDR Respondents Employed in the U.S. by Job Status

					Temp	orary					
Year	Perm	%	Temp	0/	Perm	% of Temp	Total	% of Temp	Perm	% of Temp	#(%)
fear	Total	70	Total	70	% Not Avail Tot		TOLAI	Total	Not Avail	Postdocs	Unknown
Fall 2009	318	49%	326	51%	146	45%	234	72%	68	29%	0%
Fall 2010	320	48%	341	52%	140	41%	246	72%	68	28%	0
Fall 2011	251	44%	319	56%	133	42%	225	71%	87	39%	0
Fall 2012	261	44%	328	56%	127	39%	242	74%	108	45%	0
Fall 2013	374	53%	335	47%	173	52%	247	74%	106	43%	0

Comparing the employment status of EENDR respondents employed in the U.S. over the last five years we see that:

- Permanent positions have increased to 53% this year. This is up 4 percentage points from the high reported in 2009 and up in number by 54 (17%) from the high of 320 in 2010.
- Temporary positions decreased to 47% this year, reaching a five-year low.
- 52% of those holding temporary positions were unable to find suitable permanent positions, this is a five-year high and up 13 percentage points from the low in 2012.
- 43% of those holding postdoc positions were unable to find suitable permanent positions.

### Information from the Employment Experiences of New Doctorates (EENDR) Survey

Table EE.2: Percentage of EENDR Respondents Employed in the U.S. by Employment Sector within Job Status

Year		Permanent		Temporary				
	Acad	Govn	B/I	Acad	Govn	B/I		
Fall 2009	64%	6%	29%	91%	5%	4%		
Fall 2010	64%	8%	28%	93%	5%	2%		
Fall 2011	61%	8%	31%	94%	5%	1%		
Fall 2012	61%	8%	32%	92%	5%	2%		
Fall 2013	53%	7%	40%	92%	4%	4%		

Looking at at Table EE.2 we see that

- Permanent academic employment has decreased to 53%, while temporary employment in this sector has leveled off at 92%.
- Permanent and temporary government employment has dropped to 7% and 4%, respectively.
- Business/Industry permanent employment has increased to 40% (a five-year high), while temporary positions increased to 4%.

### Starting Salaries of the 2012-2013 Doctoral Recipients

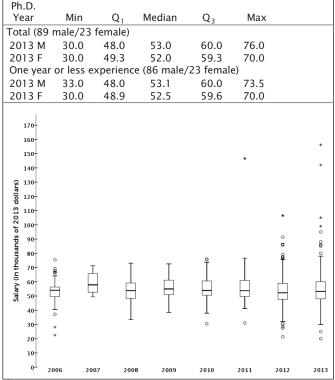
The starting salary figures were compiled from information gathered on the EENDR questionnaires sent to 1,676 individuals using addresses provided by the departments granting the degrees; 861 individuals responded between late October and April. Responses with insufficient data or from individuals who indicated they had part-time or non-U.S. employment were excluded. Numbers of usable responses for each salary category are reported in the following tables.

Readers should be warned that the data in this report are obtained from a self-selected sample, and inferences from them may not be representative of the full population. Detailed information, including boxplots which traditionally appeared in this report, is available on the AMS website at www.ams.org/annual-survey/survey-reports.

### Academic Teaching/Teaching and Research 9-10-Month Starting Salaries<sup>\*</sup> (in thousands of dollars)

Ph.D.								
Year	Mir	n (	2 <sub>1</sub> I	Median	Q <sub>3</sub>	Max		
Total (1	96 male	e/97 fe	male)					
2013 N	1 20.0	0 4	7.9	53.0	60.0	156.2		
2013 F	30.	0 5	0.0	54.9	61.9	105.0		
		-			e/88 fema	ale)		
2013 N			8.0	54.0	60.0	156.2		
2013 F	20.	0 4	8.5	53.0	60.0	105.0		
210 	*	* 8 8	°	* •	*	* * *	* 00 00	* * * 0 @ @ 0 0 0
20- 10- 0-	2006	2007	2008	2009	2010	2011	2012	2013
*	2006			2009	2010	2011	2012	2013

### Academic Postdoctorates Only\* 9-10-Month Starting Salaries (in thousands of dollars)



<sup>6</sup> A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience.

Includes postdoctoral salaries.

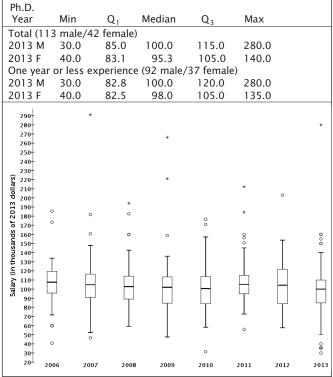
### Starting Salaries of the 2012-2013 Doctoral Recipients

#### (in thousands of dollars) Ph.D. Median Min $Q_1$ Q<sub>3</sub> Max Year Total (28 male/11 female) 2013 M 46.0 63.7 87.0 103.3 154.0 2013 F 70.0 73.5 82.5 93.1 109.0 One year or less experience (23 male/10 female) 2013 M 46.0 63.2 87.0 102.5 154.0 2013 F 72.0 76.8 84.8 94.7 109.0 180 170 160 150 140 Salary (in thousands of 2013 dollars) 130 doll 120 110 100 thousands 90 80 ij 70 Salary 60 50 40 30 20 10 2006 2007 2008 2009 2010 2011 2012 2013

Government

11-12-Month Starting Salaries

#### Business and Industry 11-12-Month Starting Salaries (in thousands of dollars)



### **Remarks on Starting Salaries**

*Key to Tables and Graphs.* Salaries are those reported for the fall immediately following the survey cycle. Years listed denote the survey cycle in which the doctorate was received—for example, survey cycle July 1, 2012–June 30, 2013, is designated as 2013. Salaries reported as 9–10 months exclude stipends for summer grants or summer teaching or the equivalent. M and F are male and female respectively. Male and female figures are not provided when the number of salaries available for analysis in a particular category was five or fewer. All categories of "Teaching/Teaching and Research" and "Research Only" contain those recipients employed at academic institutions only.

*Graphs.* The graphs show standard boxplots summarizing salary distribution information for the years 2006 through 2013. Values plotted for 2006 through 2013 are converted to 2013 dollars using the implicit price deflator prepared annually by the Bureau of Economic Analysis, U.S. Department of Commerce. These categories are based on work activities reported in EENDR. Salaries of postdoctorates are shown separately.

They are also included in other academic categories with matching work activities.

For each boxplot the box shows the first quartile (Q1), the median (M), and the third quartile (Q3). The interquartile range (IQR) is defined as Q3-Q1. Think of constructing invisible fences 1.5 IQR below O1 and 1.5 IOR above O3. Whiskers are drawn from O3 to the largest observation that falls below the upper invisible fence and from Q1 to the smallest observation that falls above the lower invisible fence. Think of constructing two more invisible fences, each falling 1.5 IOR above or below the existing invisible fences. Any observation that falls between the fences on each end of the boxplots is called an outlier and is plotted as  $\circ$  in the boxplots. Any observation that falls outside of both fences either above or below the box in the boxplot is called an extreme outlier and is marked as \* in the boxplot.

### **Remarks on U.S. Unemployment Rate Calculations**

In the unemployment calculations provided in this report the individuals employed outside the U.S. have been removed from the denominator used in the calculation of the rate, in addition to the routine removal of all individuals whose employment status is unknown. This is a change from Annual Survey Reports prior to 2009. As a consequence, the unemployment rate now being reported more accurately reflects the U.S. labor market experienced by the new doctoral recipients. This change tends to increase the rate of unemployment over that reported in prior years. In a further small change from prior years, those individuals reported as not seeking employment have also been removed from the denominator. The number of individuals so designated is small each year, and the impact of this change is to produce a slight increase in the rate over that reported in prior years.

The unemployment rates for years prior to 2009 shown in this report have been recalculated using this new method. One can view a comparison of the unemployment rates using the traditional method and the new method by visiting the AMS website at www.ams.org/annual-survey/surveyreports.html.

### **Departmental Groupings and Response Rates**

Starting with reports on the 2012 AMS-ASA-IMS-MAA-SIAM Annual Survey of the Mathematical Sciences, the Joint Data Committee has implemented a new method for grouping the doctorate-granting mathematics departments. These departments are first grouped into those at public institutions and those at private institutions. These groups are further subdivided based on the size of their doctoral program as reflected in the average annual number of Ph.D.'s awarded between 2000 and 2010, based on their reports to the Annual Survey during this period. Furthermore, doctorate-granting

### **Group Descriptions**

- **Math. Public Large** consists of departments with the highest annual rate of production of Ph.D.'s, ranging between 7.0 and 24.2 per year.
- Math. Public Medium consists of departments with an annual rate of production of Ph.D.'s, ranging between 3.9 and 6.9 per year.
- Math. Public Small consists of departments with an annual rate of production of Ph.D.'s of 3.8 or less per year.
- Math. Private Large consists of departments with an annual rate of production of Ph.D.'s, ranging between 3.9 and 19.8 per year.
- Math. Private Small consists of departments with an annual rate of production of Ph.D.'s of 3.8 or less per year.
- **Applied Mathematics** consists of doctoral-degreegranting applied mathematics departments.
- Statistics consists of doctoral-degree-granting statistics departments.
- **Biostatistics** consists of doctoral-degree-granting biostatistics departments.
- **Group M** contains U.S. departments granting a master's degree as the highest graduate degree.
- **Group B** contains U.S. departments granting a baccalaureate degree only.

departments which self-classify their Ph.D. program as being in applied mathematics will join with the other applied mathematics departments previously in Group Va to form their own group. The former Group IV will be divided into two groups, one for departments in statistics and one for departments in biostatistics.

For further details on the change in the doctoral department groupings see the article in the October 2012 issue of *Notices of the AMS* at http://www.ams.org/notices/201209/rtx120901262p.pdf.

Listings of the actual departments which compose these groups are available on the AMS website at www.ams.org/annual-survey/groups.

#### Survey Response Rates by New Groupings

#### Doctorates Granted Departmental Response Rates\*

Math. Public Large	26 of 26 including	0 with no degrees
Math. Public Medium	40 of 40 including	1 with no degrees
Math. Public Small	64 of 64 including	11 with no degrees
Math. Private Large	24 of 24 including	0 with no degrees
Math. Private Small	28 of 28 including	2 with no degrees
Applied Math.	30 of 30 including	3 with no degrees
Statistics	59 of 59 including	3 with no degrees
Biostatistics	44 of 44 including	16 with no degrees
Total	315 of 315 including	36 with no degrees



### Section on Doctoral Degrees Awarded

Supplemental Table A.1: Field of Thesis of 2012-2013 Doctoral Recipients by Degree-Granting Department

Granting	Algebra/ Number Theory	Real, Comp., Funct., & Harmonic Analysis	Geometry/ Topology	Discr. Math./ Combin. /Logic/ Comp. Sci.	Probability	Statistics/ Biostatistics	Applied Math.	Numerical Analysis/ Approxi- mations	Linear Nonlinear Optim./ Control	Differential, Integral, & Difference Equations	Math. Educ.	Other/ Unknown	Total
Math Public Large	90	25	75	49	23	11	52	37	11	44	2	0	419
Math Public Medium	51	28	24	30	18	35	53	12	7	26	4	0	288
Math Public Small	33	26	17	22	14	31	18	10	1	27	15	6	220
		C C		17	14	51		8	2		15	0	220
Math Private Large		6	51			5	20	_	2	18	2		
Math Private Small		3	/	13	5	2	9	4	2	11	0	5	77
Applied Mathematics	0	0	0	7	7	21	62	23	1	16	0	20	157
Statistics	0	0	0	0	0	322	0	0	0	0	0	0	322
Biostatistics	0	0	0	0	0	146	0	0	0	0	0	0	146
Total	258	88	174	138	84	573	214	94	24	142	23	31	1843
Female	61	15	40	36	15	255	66	22	11	37	14	5	577
Male	197	73	134	102	69	318	148	72	13	105	9	26	1266



### Section on Employment

## Supplemental Table E.1: Employment Status of 2012-2013 Doctoral Recipients in the Mathematical Sciences by Type of Degree-Granting Department

	Math. Public	Math. Public	Math. Public	Math. Private	Math. Private	Applied					
Type of Employer	Large	Medium	Small	Large	Small	Math.	Statistics	Biostatistics	Total	Female	Male
Math. Public Large	62	11	3	32	6	3	3	0	120	26	94
Math. Public Medium	16	24	5	9	0	4	2	0	60	16	44
Math. Public Small	14	10	32	0	1	4	6	0	67	26	41
Math. Private Large	31	6	1	29	1	2	1	0	71	12	59
Math. Private Small	3	7	1	7	5	2	1	0	26	9	17
Applied Mathematics	4	2	0	1	0	9	0	0	16	2	14
Statistics	2	0	0	1	0	1	38	3	45	14	31
Biostatistics	0	2	0	0	0	0	12	21	35	10	25
Master's	7	16	14	3	4	0	5	2	51	16	35
Bachelor's	31	48	43	8	10	6	9	2	157	57	100
Two-Year Colleges	8	11	14	3	1	1	0	0	38	18	20
Other Academic Dept.	16	22	13	9	6	19	29	26	140	55	85
Notprofit	12	6	0	5	3	4	7	15	52	24	28
Government	21	9	8	8	2	9	13	5	75	24	51
Busisness and Industry	57	47	29	31	10	37	128	42	381	124	257
Non-U.S. Academic	71	27	21	45	9	11	19	3	206	44	162
Non-U.S. Nonacademic	4	3	3	5	2	2	10	3	32	7	25
Not Seeking Employment	7	0	3	0	3	1	2	1	17	11	6
Still Seeking Employment	17	17	16	11	6	5	6	2	80	23	57
Unknown (U.S.)	13	8	2	3	4	31	11	14	86	27	59
Unknown (non-U.S.)*	23	12	12	4	4	6	20	7	88	32	56
Total	419	288	220	214	77	157	322	146	1843	577	1266
Female	93	81	82	54	28	33	131	75	577		
Male	326	207	138	160	49	124	191	71	1266		



### Section on Employment

### Supplemental Table E.2: Employment Status of 2012-2013 Doctoral Recipients in the Mathematical Sciences by Type of Degree-Granting Department with Citizenship

	Math. Public	Math. Public	Math. Public	Math. Private	Math. Private	Applied					Non-U.S.
Type of Employer	Large	Medium	Small	Large	Small	Math.	Statistics	Biostatistics	Total	U.S. Citizen	
Math. Public Large	62	11	3	32	6	3	3	0	120	55	65
Math. Public Medium	16	24	5	9	0	4	2	0	60	30	30
Math. Public Small	14	10	32	0	1	4	6	0	67	40	27
Math. Private Large	31	6	1	29	1	2	1	0	71	34	37
Math. Private Small	3	7	1	7	5	2	1	0	26	18	8
Applied Mathematics	4	2	0	1	0	9	0	0	16	9	7
Statistics	2	0	0	1	0	1	38	3	45	21	24
Biostatistics	0	2	0	0	0	0	12	21	35	13	22
Master's	7	16	14	3	4	0	5	2	51	41	10
Bachelor's	31	48	43	8	10	6	9	2	157	113	44
Two-Year Colleges	8	11	14	3	1	1	0	0	38	25	13
Other Academic Dept.	16	22	13	9	6	19	29	26	140	73	67
Research Institute/Other											
Notprofit	12	6	0	5	3	4	7	15	52	27	25
Government	21	9	8	8	2	9	13	5	75	53	22
Busisness and Industry	57	47	29	31	10	37	128	42	381	140	241
Non-U.S. Academic	71	27	21	45	9	11	19	3	206	45	161
Non-U.S. Nonacademic	4	3	3	5	2	2	10	3	32	0	32
Not Seeking Employment	7	0	3	0	3	1	2	1	17	11	6
Still Seeking Employment	17	17	16	11	6	5	6	2	80	48	32
Unknown (U.S.)	13	8	2	3	4	31	11	14	86	60	26
Unknown (non-U.S.)*	23	12	12	4	4	6	20	7	88	1	87
Total	419	288	220	214	77	157	322	146	1843	857	986
U.S. Citizen	32	6	2	17	5	2	1	0	65		
Non-U.S. Citizen	66	13	3	33	6	12	3	0	136	l	



## Section on Employment

## Supplemental Table E.3: Employment Status of 2012-2013 New Doctoral Recipeints by Citizenship Status

Type of Employer	U.S. Citizen		Non-U.S. Citizens		TOTAL
Type of Employer	0.5. Citizen	Permenant Visa	Temporary Visa	Unknown Visa	IOTAL
U.S. Employer	692	81	543	18	1334
U.S. Academic	499	50	321	8	878
Math. Public	125	12	108	2	247
Math. Private	52	2	43	0	97
Applied Mathematics	40	0	6	1	47
Statistics	34	2	21	1	58
Biostatistics	18	1	18	3	40
NonPhD	252	29	104	1	386
RI/NP	27	4	21	0	52
US Nonacademic	193	31	222	10	456
NonUS Employer	45	4	189	0	238
NonUS Academic	45	3	158	0	206
NonUS Nonacademic	0	1	31	0	32
Not Seeking	11	2	3	1	17
Seeking	48	4	27	1	80
Subtotal	796	91	762	20	1669
Unknown US	60	10	16	0	86
Unknown NonUS	1	2	75	10	88
Total	857	103	853	30	1843



## Section on Employment

## Supplemental Table E.4: Employment Status of 2012-2013 Doctoral Recipients by Field of Thesis

Type of Employer	Algebra/ Number Theory	Real, Comp., Funct., & Harmonic Analysis	Geometry/ Topology	Discr. Math./ Combin. /Logic/ Comp. Sci.	Probability	Statistics/ Biostatistics	Applied Math.	Numerical Analysis/ Approxi- mations	Linear Nonlinear Optim./ Control	Differential, Integral, & Difference Equations	Math. Educ.	Other/ Unknown	Total
Math. Public Large	21	7	27	13	8	4	10	11	1	16	2	0	120
Math. Public Medium	15	10	8	4	2	3	13	2	0	2	1	0	60
Math. Public Small	10	8	4	8	2	9	11	5	0	5	5	0	67
Math. Private Large	17	3	22	5	1	4	5	4	1	9	0	0	71
Math. Private Small	9	1	7	3	0	1	2	1	0	2	0	0	26
Applied Mathematics	1	0	0	1	2	0	6	2	0	4	0	0	16
Statistics	1	0	0	1	1	42	0	0	0	0	0	0	45
Biostatistics	0	0	0	0	1	34	0	0	0	0	0	0	35
Master's	7	4	12	3	1	12	2	2	1	4	3	0	51
Bachelor's	37	12	18	24	3	16	19	3	2	18	5	0	157
Two-Year Colleges	13	5	2	4	2	2	4	0	1	5	0	0	38
Other Academic Dept.	7	4	6	11	3	61	27	7	2	7	5	0	140
Research Institute/Other Notprofit	4	1	7	3	0	24	5	3	0	4	1	0	52
Government		0	0	1	4	28	22	10	4	4	0	1	75
Busisness and Industry	25	7	9	21	28	205	45	19	4	17	1	0	381
Non-U.S. Academic	56	18	26	11	14	26	19	9	2	25	0	0	206
Non-U.S. Nonacademic		1	1	1	3	17	3	3	0	1	0	0	32
Not Seeking Employment		0	0	2	2	4	3	1	0	1	0	1	17
Still Seeking Employment		6	13	9	5	13	8	3	2	7	0	1	80
Unknown (U.S.)		0	6	8	0	32	6	6	0	4	0	17	86
Unknown (non-U.S.)*	9	1	6	5	2	36	4	3	4	7	0	11	88
Total		88	174	138	84	573	214	94	24	142	23	31	1843
Female	61	15	40	36	15	255	66	22	11	37	14	5	577
Male	197	73	134	102	69	318	148	72	13	105	9	26	1266



### Section on Employment

## Supplemental Table E.5: 2012–2013 New Ph.D.s Employed in the U.S. by Type of Degree-Granting Department

Type of Employer	Math. Public Large	Math. Public Medium	Math. Public Small	Math. Private Large	Math. Private Small	Applied Math.	Statistics	Biostatistics	Total
All Doctoral Mathematics*	J. J	60	42	78	13	24	13	0	360
Statistics & Biostatistics	2	2	0	1	0	1	50	24	80
Master's, Bachelor's, and									
2-Year Colleges	46	75	71	14	15	7	14	4	246
Other Academic and									
Research Institutes	28	28	13	14	9	23	36	41	192
Government	21	9	8	8	2	9	13	5	75
Business and Industry	57	47	29	31	10	37	128	42	381
Total	284	221	163	146	49	101	254	116	1334

\* Includes Doc. Mathematics: Public Large, Public Medium, Public Small, Private Large, Private Small, and Applied Math.



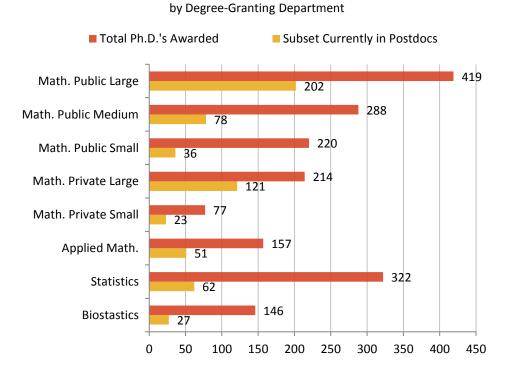
### Section on Employment

## Supplemental Table E.6: 2012–2013 New Ph.D.s Having Employment in the U.S. by Type of Employer and Citizenship

U.S. Employer	Citize	enship	Total
0.3. Employer	U.S.	Non-U.S.	Total
Academic	499	379	878
All Doctoral Mathematics*	186	174	360
Statistics & Biostatistics	34	46	80
Masters, Bachelors, & 2-Year	179	67	246
Other Academic & Research Instititues	100	92	192
Government, Business & Industry	193	263	456
Total	692	642	1334

\* Includes Doc. Mathematics: Public Large, Public Medium, Public Small, Private Large, Private Small, and Applied Math.





### Section on Employment

Supplemental Table E.7: 2012-2013 New Ph.D.'s in Postdocs



Section on Employment

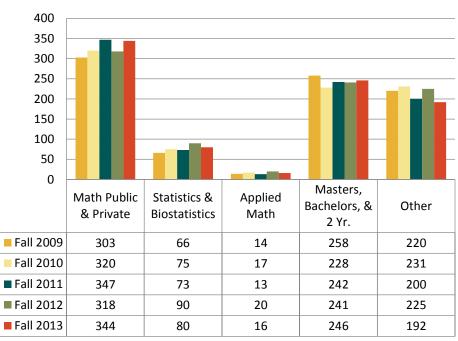
### Supplemental Table E.8: Percentage of Employed New Ph.D.'s by Type of Employer

	Employe	ed in U.S.	Employed O	utside the U.S.	
	U.S. Academic*	U.S. Noncademic	Non-U.S. Academic	Non-U.S. Nonacademic	Total
Fall 2009	65%	23%	12%	1%	1334
Fall 2010	65%	23%	12%	1%	1334
Fall 2011	62%	22%	14%	2%	1414
Fall 2012	59%	27%	12%	2%	1511
Fall 2013	56%	29%	13%	2%	1572
	878	456	206	32	

\* Includes other academic departments and research institutes/other nonprofits.



## Section on Employment

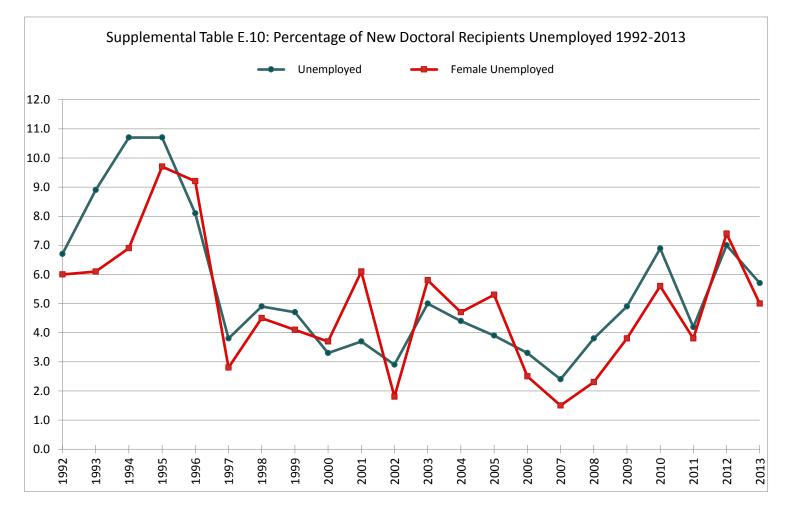


Supplemental Figure E.9 : New Ph.D.s Employed in U.S. Academic Positions, 2009-2013

\* Includes other academic departments and research institutes/other nonprofits.



## Section on Employment





Section on Demographics

Supplemental Table D.1: Gender and Citizen of 2012-2013 Doctoral Recipients, by Type of Degree-Granting Department

		ath. : Large	-	ith. ⁄Iedium	Ma Public		Math. Priv	ate Large		Private nall	Applied	d Math.	Stati	stics	Biosta	tistics	То	tal
Citizen	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem
U.S.	164	42	114	35	73	33	73	29	26	16	82	10	61	37	34	28	627	230
Non-U.S.	162	51	93	46	65	49	87	25	23	12	42	23	130	94	37	47	639	347
Total	326	93	207	81	138	82	160	54	49	28	124	33	191	131	71	75	1266	577



## Section on Demographics

Supplemental Table D.2: Gender, Race/Ethnicity & Citizenship of 2012-2013 New Doctoral Recipients, July 1, 2012 - June 30, 2013

				All	Groups C	ombined					
	315	of	315	departm	ients resp	oonding		(	36	with no	degrees)
	MEN					WOMEN					
	C	itizenship	)				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	1	0	0	0	1	1
Asian	50	29	412	9	500	22	40	227	11	300	800
Bl/Afr Am	16	3	11	0	30	8	2	4	0	14	44
Hisp/Lat	22	3	30	0	55	3	1	6	0	10	65
Haw/Pac Is	1	0	3	0	4	0	1	0	0	1	5
White	522	8	124	3	657	185	15	36	1	237	894
Unknown	16	0	0	4	20	11	0	1	2	14	34
TOTAL	627	43	580	16	1266	230	59	274	14	577	1843

### All Groups Combined

### All Math Public Groups Combined

Doctorate Granting Departments of Mathematics

	130	of	130	departm	ients resp	onding		(	12	with no	degrees)
		ME	N					WOMEN			
	C	itizenship	)				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	1	0	0	0	1	1
Asian	20	13	205	0	238	10	15	95	1	121	359
Bl/Afr Am	8	2	9	0	19	6	0	3	0	9	28
Hisp/Lat	10	2	18	0	30	1	1	4	0	6	36
Haw/Pac Is	1	0	1	0	2	0	1	0	0	1	3
White	307	3	62	1	373	88	7	17	0	112	485
Unknown	5	0	0	4	9	4	0	1	1	6	15
TOTAL	351	20	295	5	671	110	24	120	2	256	927

### All Math Private Groups Combined

Doctorate Granting Departments of Mathematics

	52	of	52	departm	ents resp	onding		(	2	with no	degrees)
		ME	IN					WOMEN			
	C	itizenship	ט				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	10	3	56	0	69	1	2	16	0	19	88
Bl/Afr Am	1	0	1	0	2	0	0	0	0	0	2
Hisp/Lat	3	0	5	0	8	0	0	1	0	1	9
Haw/Pac Is	0	0	1	0	1	0	0	0	0	0	1
White	85	1	43	0	129	43	4	13	1	61	190



Unknown	0	0	0	0	0	1	0	0	0	1	1
TOTAL	99	4	106	0	209	45	6	30	1	82	291



		Doctorate Granting Departments of Mathematics											
	26	of	26	departm	ients resp	onding		(	0	with no	degrees)		
		M	IN					WOMEN					
	C	itizenshi	)				Citize	nship					
			Non-US					Non-US					
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL		
Am Ind/Alas	0	0	0	0	0	1	0	0	0	1	1		
Asian	12	6	110	0	128	3	1	35	0	39	167		
Bl/Afr Am	1	0	1	0	2	4	0	0	0	4	6		
Hisp/Lat	7	0	13	0	20	0	1	2	0	3	23		
Haw/Pac Is	0	0	1	0	1	0	1	0	0	1	2		
White	144	2	29	0	175	33	2	9	0	44	219		
Unknown	0	0	0	0	0	1	0	0	0	1	1		
TOTAL	164	8	154	0	326	42	5	46	0	93	419		

### Math Public Large Group Doctorate Granting Departments of Mathematics

### Math Public Medium Group

Doctorate Granting Departments of Mathematics

	40	of	40	departm	ents resp	onding		(	1	with no	degrees)
		ME	N					WOMEN			
	С	itizenship	)				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	5	2	57	0	64	2	6	29	0	37	101
Bl/Afr Am	3	2	5	0	10	1	0	2	0	3	13
Hisp/Lat	2	2	4	0	8	1	0	1	0	2	10
Haw/Pac Is	1	0	0	0	1	0	0	0	0	0	1
White	100	0	21	0	121	30	4	4	0	38	159
Unknown	3	0	0	0	3	1	0	0	0	1	4
TOTAL	114	6	87	0	207	35	10	36	0	81	288

### Math Public Small Group

Doctorate Granting Departments of Mathematics

	64	of	64	departm	ients resp	onding		(	11	with no o	degrees)
		ME	EN					WOMEN			
	C	itizenship	2				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	3	5	38	0	46	5	8	31	1	45	91
Bl/Afr Am	4	0	3	0	7	1	0	1	0	2	9
Hisp/Lat	1	0	1	0	2	0	0	1	0	1	3
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	63	1	12	1	77	25	1	4	0	30	107
Unknown	2	0	0	4	6	2	0	1	1	4	10
TOTAL	73	6	54	5	138	33	9	38	2	82	220



		Doctorate Granting Departments of Mathematics												
	24	of	24	departm	ients resp	onding		(	0	with no	degrees)			
		ME	IN					WOMEN						
	C	itizenship	)				Citize	nship						
			Non-US					Non-US						
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL			
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0			
Asian	10	2	43	0	55	1	1	9	0	11	66			
Bl/Afr Am	0	0	0	0	0	0	0	0	0	0	0			
Hisp/Lat	1	0	4	0	5	0	0	1	0	1	6			
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0			
White	62	1	37	0	100	27	3	11	0	41	141			
Unknown	0	0	0	0	0	1	0	0	0	1	1			
TOTAL	73	3	84	0	160	29	4	21	0	54	214			

## Math Private Large Group

### Math Private Small Group

Doctorate Granting Departments of Mathematics

	28	of	28	departm	nents resp	onding		(	2	with no	degrees)
		ME	N					WOMEN			
	С	itizenship	)				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	0	1	13	0	14	0	1	7	0	8	22
Bl/Afr Am	1	0	1	0	2	0	0	0	0	0	2
Hisp/Lat	2	0	1	0	3	0	0	0	0	0	3
Haw/Pac Is	0	0	1	0	1	0	0	0	0	0	1
White	23	0	6	0	29	16	1	2	1	20	49
Unknown	0	0	0	0	0	0	0	0	0	0	0
TOTAL	26	1	22	0	49	16	2	9	1	28	77

### **Applied Mathematics Group**

Doctorate Granting Departments of Applied Mathematics

	30	of	30	departm	ients resp	onding		(	3	with no o	degrees)
		ME	N					WOMEN			
	С	itizenship	)				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	7	1	33	0	41	2	2	19	0	23	64
Bl/Afr Am	4	0	0	0	4	0	0	0	0	0	4
Hisp/Lat	6	0	1	0	7	0	0	0	0	0	7
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	57	0	6	1	64	8	0	1	0	9	73
Unknown	8	0	0	0	8	0	0	0	1	1	9
TOTAL	82	1	40	1	124	10	2	20	1	33	157



	Doctorate Granting Departments of Statistics										
	59	of	59	departm	ients resp	onding		(	3	with no	degrees)
			WOMEN								
	С	itizenship	)			Citizenship					
	Non-US					Non-US					
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	8	6	98	5	117	4	7	73	8	92	209
Bl/Afr Am	1	0	0	0	1	2	1	0	0	3	4
Hisp/Lat	3	0	5	0	8	2	0	1	0	3	11
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	46	4	11	1	62	25	2	2	0	29	91
Unknown	3	0	0	0	3	4	0	0	0	4	7
TOTAL	61	10	114	6	191	37	10	76	8	131	322

### Statistics Group Doctorate Granting Departments of Statistics

### **Biostatistics Group**

Doctorate Granting Departments of Biostatistics

	44	of 44 departments resp						(	16	with no	degrees)
		WOMEN									
	С	Citizenship					Citize	nship			
		Non-US						Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	0	0	0	0	0	0	0	0	0
Asian	5	6	20	4	35	5	14	24	2	45	80
Bl/Afr Am	2	1	1	0	4	0	1	1	0	2	6
Hisp/Lat	0	1	1	0	2	0	0	0	0	0	2
Haw/Pac Is	0	0	1	0	1	0	0	0	0	0	1
White	27	0	2	0	29	21	2	3	0	26	55
Unknown	0	0	0	0	0	2	0	0	0	2	2
TOTAL	34	8	25	4	71	28	17	28	2	75	146



### Section on Demographics

### Supplemental Table D.3: U.S. Citizen Doctoral Recipients, Fall 2003 to Fall 2013

Year	Total Doctorates Granted by U.S. Institutions	Total U.S. Citizen Doctoral Total	%
2003-04	1081	459	42%
2004-05	1222	496	41%
2005-06	1311	552	42%
2006-07	1333	576	43%
2007-08	1378	622	45%
2008-09	1605	742	46%
2009-10	1632	789	48%
2010-11	1653	802	49%
2011-12	1798	863	48%
2012-13	1843	857	47%

### Supplemental Table D.4: Gender of U.S. Citizen Doctoral Recipients, Fall 2003 to Fall 2013

Year	Total U.S. Citizen Doctoral Recipients	Male	Female	% Female
2003-04	459	308	151	33%
2004-05	496	355	141	28%
2005-06	552	399	153	28%
2006-07	576	396	180	31%
2007-08	622	431	191	31%
2008-09	742	515	227	31%
2009-10	789	564	225	29%
2010-11	802	574	228	28%
2011-12	863	621	242	28%
2012-13	857	627	230	27%



Section on Females

## Supplemental Table F.1: Females as a Percentage of 2012–13 New Ph.D.s Produced by and Hired by Doctoral-Granting Department Grouping

		Math. Public	Math. Public	Math. Public	Math. Private	Math. Private				Total
		Large	Medium	Small	Large	Small	Applied Math.	Statistics	Biostatistics	TOLAI
F	Produced	22%	28%	37%	25%	36%	21%	41%	51%	31%
	Hired*	22%	27%	39%	17%	35%	13%	31%	29%	



## Section on Females

## Supplemental Table F.2: Employment Status of 2012-2013 Female New Doctoral Recipients by Type of Degree-Granting Department

Type of Employer	Math. Public Large	Math. Public Medium	Math. Public Small	Math. Private Large	Math. Private Small	Applied Math.	Statistics	Biostatistics	Total
Math. Public Large	13	3	1	6	2	1	0	0	26
Math. Public Medium	4	5	2	2	0	1	2	0	16
Math. Public Small	4	6	12	0	0	0	4	0	26
Math. Private Large	6	1	0	5	0	0	0	0	12
Math. Private Small	1	1	0	4	3	0	0	0	9
Applied Mathematics	1	1	0	0	0	0	0	0	2
Statistics	1	0	0	0	0	0	12	1	14
Biostatistics	0	0	0	0	0	0	1	9	10
Master's	1	4	5	2	1	0	3	0	16
Bachelor's	10	13	17	3	6	0	7	1	57
Two-Year Colleges	3	7	5	2	1	0	0	0	18
Other Academic Dept.	4	9	7	2	3	1	13	16	55
Research Institute/Other Notprofit	2	3	0	2	0	3	5	9	24
Government	5	2	2	4	1	4	5	1	24
Business and Industry	11	9	8	7	6	14	51	18	124
Non-U.S. Academic	12	6	9	9	0	1	4	3	44
Non-U.S. Nonacademic	1	0	1	1	0	1	2	1	7
Not Seeking Employment	3	0	2	0	3	1	1	1	11
Still Seeking Employment	3	3	6	2	1	1	6	1	23
Unknown (U.S.)	4	2	1	2	0	4	5	9	27
Unknown (non-U.S.)*	4	6	4	1	1	1	10	5	32
Total	93	81	82	54	28	33	131	75	577