

Report on the 2011-2012 New Doctoral Recipients

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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, 2011, through June 30, 2012. All 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 2012 employment plans of 2011–2012 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 2011–2012 new doctorates and includes information about 2011-2012 doctoral recipients that were not included in the preliminary report in the March 2013 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

1,798 Ph.D.'s were awarded by the 307 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.

Biostatistics reported the largest increase in the number of doctoral recipients, up 57 over the total of 115 reported for 2010-2011.

32% (570) of the new Ph.D.'s had a dissertation in statistics/ biostatistics, followed by applied mathematics (264) with 15% and algebra/number theory (227) with 13%.

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

- Increased about 9% from 1,653 to 1,798.
- Increased in all department groupings except for Math. Private Large, which awarded 7% fewer.
- Remained flat for degrees in statistics.

Figure A.1: Number and Percentage of Degrees Awarded by Department Grouping*



Total Degrees Awarded: 1,798

*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 2001–2002:

- Ph.D.'s awarded have increased more than 87% over the last 10 years in all groups combined.
- Degrees awarded by Doctoral Mathematics combined and by Statistics & Biostatistics combined have increased 78% and 117%, respectively. Some of this latter increase may be attributed to the increase in response rate among the Statistics & Biostatistics departments.

Employment

The overall U.S. unemployment rate for the new doctoral recipients is 6.9%, up from 4.3% last year. (Details on the calculations are on page 884.) The employment plans are known for 1,623 of the 1,798 new doctoral recipients. The number of new doctoral recipients employed in the U.S. is 1,300, up 9% from last year's number of 1,191. 68% of Ph.D.'s employed in Doctoral Math. departments are in postdoc positions, down from 71% last year. The number of new Ph.D.'s taking positions in Business & Industry has increased to 340 this year compared to 235 last year, and all groups showed an increase in Business & Industry.



- 53% (685) of those who are employed in the U.S. are U.S. citizens, down slightly from 54% last year.
- 78% (615) of non-U.S. citizens whose employment status is known are employed in the U.S., the remaining 151 non-U.S. citizens are either employed outside of the U.S. or are unemployed.
- 8% (115) of all new Ph.D.'s are working at the institution which granted their degree, the same percent as last year. These individuals constitute 13% of total U.S. academic employed.

Figure E.2: U.S. Employed by Type of Employer



*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: 1,300
- U.S. academic hiring increased slightly to 894 and all hiring groups reported increases except Math. Public Small and Large, Math. Private Small, Master's, and 2-Year College.
- Goverment hiring decreased 19% (from 81 to 66); all doctoral granting groups except Math. Public Small, Applied Math. and Biostatistics showed a decrease 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: 1,300



* Includes all Math. Public, Math. Private, and Applied Math., Master's, Bachelors, 2-Yr, Other academic and research institutes/nonprofit

**Includes all Math. Public, Math. Private, and Applied Math. departments.





- Total known to be employed: 1,511 •
- 38% (573) of the new Ph.D.'s that are employed are reported to be in postdoc positions, down from 41% last year.
- 56% of the new Ph.D.'s awarded by Math. Private Large departments are employed in postdocs, while only 22% of new Ph.D.'s awarded by Statistics departments are in postdocs.
- 46% of the new Ph.D.'s having U.S. academic employment are in postdocs; last year this percentage was 48%.

Looking at U.S. citizens whose employment status is known:

- 86% (685) are employed in the U.S., of these:
 - 32% are employed in Ph.D.-granting departments
 - 42% are employed in all other academic categories
 - 26% are employed in government, business and industry

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



*Includes all Math. Public, Math. Private, and Applied Math. departments.

- 22% of the new Ph.D.'s in postdoc positions, are employed outside the U.S., last year this percentage was 24%.
- 68% of the new Ph.D.'s employed in Doctoral Math. departments are in postdoc positions, down from 71% last year. The analogous percent for Math. Private Large is 85%.

Employment

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



- Unemployment among those whose employment status is known is 6.9%, up from 4.3% for Fall 2011.
- Math. Private Small reported the highest unemployment rate at 13%.
- Statistics reported the lowest unemployment at 3.5%.
- 7.8% of U.S. citizens are unemployed, compared to 4.6% in Fall 2011.
- 6.0% of non-U.S. citizens are unemployed, compared to 3.9% in Fall 2011.



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

- U.S. academic hiring has dropped to 59% (a five-year low), while U.S. nonacademic hiring has jumped to 27% (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/2012Survey-NewDoctorates-Report.

Demographics

Gender and citizenship was known for all 1,798 new Ph.D.'s reported for 2011–2012. The number of U.S. citizens is 863 (48%) (down slightly from 49% last year). The number of females accounted for 28% of the U.S. citizen total (the same as last year). The number of non-U.S. citizens receiving a Ph.D. increased modestly to 52% from 51% last year; this is down 7 percentage points from the 10-year high of 59% reported in 2004–2005. 11% (65) of the non-U.S. citizens employed in the U.S. have permanent visa status (up from 9% last year).



 Females account for 31% (554) of the 1,798 Ph.D.'s, down only marginally from last year's figure of 32%.





- 50% of the males and 44% of the females are U.S. citizens.
- Females accounted for 28% of the U.S. citizens.
- Among the U.S. citizens: 7 are American Indian or Alaska Native, 62 are Asian, 28 are Black or African American, 33 are Hispanic or Latino, 5 are Native Hawaiian or Other Pacific Islander, 669 are White, and 59 are of unknown race/ ethnicity.

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



All groups awarded more degrees to U.S. Citizens than Non-U.S. citizens except Math. Private Large, Statistics and Biostatitics which awarded 44%, 31% and 42% 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 have been increasing steadily, reaching a high of 863 this year. This is a 50% increase from Fall 2006–2007.
- Non-U.S. citizen counts which had been hovering around 850, are showing more variability, increasing to 935 this year. While this is a 24% increase from Fall 2006–2007, it represents a 10% increase from last year.

Female New Doctoral Recipients

After increasing to 32% last year, the number of female new doctoral recipients has decreased to 31% this year. Of the 894 new Ph.D.'s hired into academic positions 31% (279) were women, down from 33% last year. 25% of those hired into postdoc positions were women, with 42% of the women in postdocs being U.S. citizens, up from 41% last year. The U.S. unemployment rate for females is 7.4%, compared to 6.7% for males and 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	83	73
Math. Public Medium	88	75
Math. Public Small	62	49
Math. Private Large	47	44
Math. Private Small	15	13
Applied Math.	56	37
Statistics	118	102
Biostatistics	85	77

- 38% of those hired by Group B were women (up from 36% last year) and 29% of those hired by Group M were women (down from 33% last year).
- 37% of those hired into Research Institutes/Other non-profit positions were women (down from 62% last year but in line with 35% two years ago).
- 36% of those hired into Government positions were women (down slightly from 37% last year).
- 60% of the women employed in all doctoral groups are in postdoc positions, compared to 66% of males employed in postdocs in these groups.

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



^{*} For definitions of groups see page 884.

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

This section contains information about new doctoral recipients in these departments (59 statistics and 36 biostatistics departments). Statistics and Biostatistics departments produced 485 new doctorates, of which all but 6 had dissertations in statistics/biostatistics. This is a 28% increase in the number reported for fall 2011 of 375. In addition, Math Public, Math Private and Applied Math departments combined had 91 Ph.D. recipients with dissertations in statistics. 35% (171) of the new Ph.D.'s in Statistics and Biostatistics departments are U.S. citizens (while in the other groups combined 52% are U.S. citizens). The 90 departments responding last year and this year reported a total of 427 new doctoral recipients, an increase of 4% from last year. The unemployment among this group of new Ph.D.'s is 4.2% up from 3.8%.



groups combined, where 27% are

female.

Females account for 38% of statistics and 49% of biostatistics Ph.D.'s awarded.

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



- 4.2% of Statistics/Biostatistics Ph.D.'s are unemployed compared to 8.1% among all other groups. This is up from 3.8% last year.
- Unemployment among new Ph.D.'s with dissertations in statistics/probability is 4.0%, up from 3.6%. Among all other dissertation groupings 7.0% are unemployed.

are females. Figure S.5: U.S.-Employed Ph.D. Recipients from Statistics/Biostatistics Departments

females, while in all other groups

combined 26% of the U.S. citizens



Total U.S. Employed: 390

- 37% of Statistics/Biostatistics Ph.D.'s are employed in Business/Industry, compared to 22% in all other groups.
- 32% of those hired by statistics and biostatistics were females, compared to 24% 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 2011–2012 new Ph.D.'s on the EENDR Survey. It expands on the details of employment which are not available through the departments.

The 1,644 new Ph.D.'s reported in our Preliminary Report were sent this survey; of those individuals 709 (43%) responded. The employment status is known for 702 of these individuals, the U.S. unemployment among this group is 2.2%. Of the 681 who reported being employed, 31% indicated they were actively looking for new employment.



- 67% of those reporting academic employment hold tenured/ tenure-track positions.
- 33% were unable to find a suitable permanent position (up from 27% last year).
- 73% are employed in postdocs and 45% of these reported they could not find a suitable permanent position.
- 68% are employed in postdocs.

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

					Temp	oorary					
Year	Perm Total	%	Temp Total	%	Perm Not Avail	% of Temp Total	Total	% of Temp Total	Perm Not Avail	% of Temp Postdocs	#(%) Unknown
Fall 2008	245	49%	222	45%	74	33%	172	77%	47	27%	29(6%)
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

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

- Permanent positions have leveled off at 44% this year. This is down 5 percentage points from the high reported in 2008 & 2009 and down in number by 59 (18%) from the high of 320 in 2010.
- Temporary positions remained unchanged at 56% this year, maintaining a five-year high.
- 39% of those holding temporary positions were unable to find suitable permanent positions, up 6 percentage points from 2008 and down 6 percentage points from the high in 2009.
- 45% of those holding postdoc positions were unable to find suitable permanent positions, a five-year high.

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 2008	63%	6%	31%	95%	4%	1%		
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%		

Looking at at Table EE.2 we see that

- Permanent academic employment has leveled off at 61%, while temporary employment in this sector has decreased to 92%.
- Permanent government employment has leveled off at 8%.
- Business/Industry permanent employment has increased to 32% (a five-year high), while temporary positions increased to 2%.

Starting Salaries of the 2011-2012 Doctoral Recipients

The starting salary figures were compiled from information gathered on the EENDR questionnaires sent to 1,644 individuals using addresses provided by the departments granting the degrees; 709 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.

Academic Teaching/Teaching and Research 9-10-Month Starting Salaries^{*} (in thousands of dollars)

Ph.D. Median Year Min Q₁ Q_3 Max Total (203 male/78 female) 2012 M 28.0 48.0 52.0 58.1 105.0 2012 F 21.0 47.0 51.0 56.0 78.0 One year or less experience (189 male/70 female) 2012 M 28.0 47.0 50.8 57.0 78.0 2012 F 21.0 47.0 50.0 55.0 60.0 210-200 190 **180-**170-160-150-140-130-120-120-110-180 **Salary (in thousands Salary (in thousands Salar** 8 000 000 8 Н 30 20 10 0 2005 2006 2007 2008 2009 2010 2011 2012

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

Ph.[D.		_			_				
Yea	ar	Min	Q ₁	Media	an	Q_3	Max			
Total (88 male/24 female) 2012 M 49.5 50.0 55.1 60.0 76.4										
201	2 M	49.5	50.0	55.	1	60.0	76.4			
201	2 F	27.0	43.0	47.0	0	53.0	67.0			
One	year	or less ex	xperienc	e (86 m	nale/2	3 femal	e)			
201	2 M	36.0	50.0	52.6	5	60.0	74.4			
201	2 F	40.0	47.0	50.0	00	54.5	67.0			
	150+									
	150							*		
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L	₀⊥	2005	2006	2007	2008	2009	2010	2011	2012	

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

Starting Salaries of the 2011-2012 Doctoral Recipients

Government 11–12-Month Starting Salaries (in thousands of dollars)



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



^{*} Figures in red represent corrections from published report.

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, 2011–June 30, 2012, is designated as 2012. 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 2005 through 2012. Values plotted for 2005 through 2012 are converted to 2012 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 degree granting 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	0 with no degrees
Math. Public Small	64 of 64 including	10 with no degrees
Math. Private Large	24 of 24 including	0 with no degrees
Math. Private Small	28 of 28 including	5 with no degrees
Applied Math.	30 of 30 including	3 with no degrees
Statistics	59 of 59 including	5 with no degrees
Biostatistics	36 of 36 including	8 with no degrees
Total	307 of 307 including	31 with no degrees



Section on Doctoral Degrees Awarded

Supplemental Table A.1: Field of Thesis of 2011-2012 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	73	34	67	50	23	10	61	13	6	43	1	6	387
Math Public Medium	53	24	18	26	22	23	61	25	13	23	3	2	293
Math Public Small	34	16	17	13	13	28	44	11	4	17	7	2	206
Math Private Large	50	8	56	23	13	6	23	3	1	17	0	4	204
Math Private Small	15	7	9	6	2	0	11	3	0	7	1	1	62
Applied Mathematics	2	2	3	7	4	24	63	14	9	14	0	19	161
Statistics	0	0	1	0	2	307	1	0	1	0	0	1	313
Biostatistics	0	0	0	0	0	172	0	0	0	0	0	0	172
Total	227	91	171	125	79	570	264	69	34	121	12	35	1798
Female	49	14	36	35	12	243	94	12	8	32	7	12	554
Male	178	77	135	90	67	327	170	57	26	89	5	23	1244



Section on Employment

Supplemental Table E.1: Employment Status of 2011-2012 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	51	10	4	22	5	3	0	1	96	20	76
Math. Public Medium	13	29	4	5	7	3	4	0	65	15	50
Math. Public Small	5	3	28	2	2	3	4	0	47	10	37
Math. Private Large	32	9	0	38	1	3	1	0	84	21	63
Math. Private Small	10	5	0	2	6	2	1	0	26	10	16
Applied Mathematics	2	2	1	0	2	11	2	0	20	4	16
Statistics	0	2	0	2	0	0	44	3	51	14	37
Biostatistics	0	0	1	1	0	1	14	22	39	15	24
Master's	8	15	11	4	5	0	7	1	51	15	36
Bachelor's	45	47	33	10	9	9	12	2	167	63	104
Two-Year Colleges	4	6	11	0	1	1	0	0	23	7	16
Other Academic Dept.	19	19	9	8	3	25	32	47	162	62	100
Notprofit	12	6	5	9	1	5	11	14	63	23	40
Government	10	11	6	4	1	12	11	11	66	24	42
Busisness and Industry	57	46	23	30	4	34	105	41	340	112	228
Non-U.S. Academic	61	34	20	40	5	3	19	4	186	44	142
Non-U.S. Nonacademic	1	2	2	2	0	3	12	3	25	11	14
Not Seeking Employment	6	5	0	0	0	0	3	1	15	6	9
Still Seeking Employment	18	18	16	6	7	15	9	8	97	33	64
Unknown (U.S.)	17	17	25	5	2	21	15	5	107	30	77
Unknown (non-U.S.)*	16	7	7	14	1	7	7	9	68	15	53
Total	387	293	206	204	62	161	313	172	1798	554	1244
Female	83	88	62	47	15	56	118	85	554		
Male	304	205	144	157	47	105	195	87	1244		



Section on Employment

Supplemental Table E.2: Employment Status of 2011-2012 Doctoral Recipients in the Mathematical Sciences by Type of Degree-Granting Department with Citizenship

Type of Employer	Math. Public Large	Math. Public Medium	Math. Public Small	Math. Private Large	Math. Private Small	Applied Math.	Statistics	Biostatistics	Total	U.S. Citizen	Non-U.S. Citizen
Math. Public Large	51	10	4	22	5	3	0	1	96	52	44
Math. Public Medium	13	29	4	5	7	3	4	0	65	36	29
Math. Public Small	5	3	28	2	2	3	4	0	47	24	23
Math. Private Large	32	9	0	38	1	3	1	0	84	41	43
Math. Private Small	10	5	0	2	6	2	1	0	26	15	11
Applied Mathematics	2	2	1	0	2	11	2	0	20	10	10
Statistics	0	2	0	2	0	0	44	3	51	24	27
Biostatistics	0	0	1	1	0	1	14	22	39	19	20
Master's	8	15	11	4	5	0	7	1	51	34	17
Bachelor's	45	47	33	10	9	9	12	2	167	133	34
Two-Year Colleges	4	6	11	0	1	1	0	0	23	15	8
Other Academic Dept.	19	19	9	8	3	25	32	47	162	76	86
Notprofit	12	6	5	9	1	5	11	14	63	30	33
Government	10	11	6	4	1	12	11	11	66	43	23
Busisness and Industry	57	46	23	30	4	34	105	41	340	133	207
Non-U.S. Academic	61	34	20	40	5	3	19	4	186	44	142
Non-U.S. Nonacademic	1	2	2	2	0	3	12	3	25	3	22
Not Seeking Employment	6	5	0	0	0	0	3	1	15	10	5
Still Seeking Employment	18	18	16	6	7	15	9	8	97	58	39
Unknown (U.S.)	17	17	25	5	2	21	15	5	107	62	45
Unknown (non-U.S.)*	16	7	7	14	1	7	7	9	68	1	67
Total	387	293	206	204	62	161	313	172	1798	863	935
U.S. Citizen	213	152	110	89	44	84	98	73	863		
Non-U.S. Citizen	174	141	96	115	18	77	215	99	935		



Section on Employment

Supplemental Table E.3: Employment Status of 2011-12 New Doctoral Recipeints by Citizenship Status

Turne of Freedower			Non-U.S. Citizens		τοτοι	
Type of Employer	U.S. Citizen	Permenant Visa	Temporary Visa	Unknown Visa	TOTAL	
U.S. Employer	685	65	540	10	1300	
U.S. Academic	509	44	336	5	894	
Math. Public	52	3	40	1	96	
Math. Private	36	0	29	0	65	
Applied Mathematics	24	2	21	0	47	
Statistics	41	2	39	2	84	
Biostatistics	15	1	10	0	26	
NonPhD	258	27	117	1	403	
RI/NP	30	4	29	0	63	
US Nonacademic	176	21	204	5	406	
NonUS Employer	47	5	158	1	211	
NonUS Academic	44	5	136	1	186	
NonUS Nonacademic	3	0	22	0	25	
Not Seeking	10	2	3	0	15	
Seeking	58	1	37	1	97	
Subtotal	800	73	738	12	1623	
Unknown US	62	6	37	2	107	
Unknown NonUS	1	1	63	3	68	
Total	863	80	838	17	1798	



Section on Employment

Supplemental Table E.4: Employment Status of 2011-2012 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	25	7	16	9	8	2	12	5	0	10	0	2	96
Math. Public Medium	15	6	7	2	4	4	10	9	0	8	0	0	65
Math. Public Small	4	3	3	7	3	7	7	1	2	8	2	0	47
Math. Private Large	20	3	24	6	5	3	5	1	1	14	0	2	84
Math. Private Small	4	3	6	4	0	1	2	1	0	5	0	0	26
Applied Mathematics	0	0	0	1	0	2	10	3	0	4	0	0	20
Statistics	0	0	0	0	2	48	0	0	0	1	0	0	51
Biostatistics	0	0	0	0	0	38	0	0	0	0	0	1	39
Master's	7	7	3	9	2	10	5	2	1	3	2	0	51
Bachelor's	38	16	23	23	1	23	20	5	2	11	4	1	167
Two-Year Colleges	7	1	2	0	0	1	5	3	0	2	2	0	23
Other Academic Dept.	5	2	3	8	4	91	32	4	3	2	2	6	162
Research Institute/Other Notprofit	5	1	2	2	3	31	11	2	1	5	0	0	63
Government	3	2	2	8	2	26	11	7	2	2	0	1	66
Busisness and Industry	16	11	21	5	26	167	53	7	10	16	0	8	340
Non-U.S. Academic	32	13	30	18	8	25	24	10	8	17	0	1	186
Non-U.S. Nonacademic	1	0	1	0	1	17	3	0	0	1	0	1	25
Not Seeking Employment	1	0	3	3	0	4	2	1	0	1	0	0	15
Still Seeking Employment	16	6	11	9	5	19	24	3	2	1	0	1	97
Unknown (U.S.)	14	8	9	7	2	32	19	5	0	4	0	7	107
Unknown (non-U.S.)*	14	2	5	4	3	19	9	0	2	6	0	4	68
Total	227	91	171	125	79	570	264	69	34	121	12	35	1798
Female	49	14	36	35	12	243	94	12	8	32	7	12	554
Male	178	77	135	90	67	327	170	57	26	89	5	23	1244



Section on Employment

Supplemental Table E.5: 2011–12 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*	113	58	37	69	23	25	12	1	338
Statistics & Biostatistics	0	2	1	3	0	1	58	25	90
Master's, Bachelor's, and 2-Year Colleges	57	68	55	14	15	10	19	3	241
Other Academic and									
Research Institutes	31	25	14	17	4	30	43	61	225
Government	10	11	6	4	1	12	11	11	66
Business and Industry	57	46	23	30	4	34	105	41	340
Total	268	210	136	137	47	112	248	142	1300

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



Section on Employment

Supplemental Table E.6: 2011–12 New Ph.D.s Having Employment in the U.S. by Type of Employer and Citizenship

	Citize	enship	Total
0.s. Employer	U.S.	Non-U.S.	Total
Academic	509	385	894
All Doctoral Mathematics*	178	160	338
Statistics & Biostatistics	43	47	90
Masters, Bachelors, & 2-Year	182	59	241
Other Academic & Research Instititues	106	119	225
Government, Business & Industry	176	230	406
Total	685	615	1300

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



Supplemental Table(s) for the Report on New Doctoral Recipients Section on Employment

Supplemental Table E.7: 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 2008	65%	23%	10%	2%	1166
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
	894	406	186	25	

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



Section on Demographics

Supplemental Table D.1: Gender and Citizen of 2011-2012 Doctoral Recipients, by Type of Degree-Granting Department

	Ma Public	ith. Large	Ma Public N	ith. ⁄Iedium	Ma Public	ith. Small	Math. Priv	ate Large	Math. Sm	Private nall	Applied	d Math.	Stat	istics	Biosta	itistics	To	tal
Citizen	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem	Mal	Fem
U.S.	165	48	110	42	81	29	69	20	33	11	57	27	69	29	37	36	621	242
Non-U.S.	139	35	95	46	63	33	88	27	14	4	48	29	126	89	50	49	623	312
Total	304	83	205	88	144	62	157	47	47	15	105	56	195	118	87	85	1244	554



Section on Demographics

Supplemental Table D.2: Gender, Race/Ethnicity & Citizenship of 2011-2012 New Doctoral Recipients, July 1, 2011 - June 30, 2012

All Groups	Combined
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	307	of	307	departm	ents res	oonding		(31	with no	degrees)
			MEN					WOMEN			
		Citizenship					Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	5	0	2	0	7	2	0	0	0	2	9
Asian	39	21	408	9	477	23	19	217	4	263	740
Bl/Afr Am	16	3	10	0	29	12	1	3	0	16	45
Hisp/Lat	22	7	32	1	62	11	3	7	0	21	83
Haw/Pac Is	3	0	0	0	3	2	0	3	0	5	8
White	492	17	107	3	619	177	8	43	0	228	847
Unknown	44	1	2	0	47	15	2	2	0	19	66
TOTAL	621	49	561	13	1244	242	33	275	4	554	1798

All Math Public Groups Combined

Doctorate Granting Departments of Mathematics

	130	of	130	departm	ents res	oonding		(10	with no	degrees)
			MEN					WOMEN			
		Citize	nship				Citize	nship			
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	2	0	0	0	2	1	0	0	0	1	3
Asian	16	5	202	0	223	9	1	79	0	89	312
BI/Afr Am	5	1	2	0	8	4	1	1	0	6	14
Hisp/Lat	12	3	17	0	32	5	1	4	0	10	42
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	290	7	57	0	354	92	4	21	0	117	471
Unknown	31	1	2	0	34	8	1	1	0	10	44
TOTAL	356	17	280	0	653	119	8	106	0	233	886

All Math Private Groups Combined

Doctorate Granting Departments of Mathematics

				0 1							
	52	of	52	departm	ents res	oonding		(5	with no	degrees)
			MEN					WOMEN			
		Citize	nship				Citizenship				
			Non-US					Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	3	0	0	0	3	0	0	0	0	0	3
Asian	5	0	52	3	60	3	0	13	1	17	77
Bl/Afr Am	5	0	2	0	7	1	0	0	0	1	8
Hisp/Lat	0	1	10	0	11	2	0	0	0	2	13
Haw/Pac Is	0	0	0	0	0	1	0	3	0	4	4
White	79	3	30	1	113	22	1	12	0	35	148
Unknown	10	0	0	0	10	2	0	1	0	3	13
TOTAL	102	4	94	4	204	31	1	29	1	62	266

Page 1



		Doctorate Granting Departments of Mathematics											
	26	of	26	departm	ents res	oonding		(0	with no	degrees)		
			MEN					WOMEN					
		Citize	nship				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	12	2	93	0	107	4	0	22	0	26	133		
Bl/Afr Am	3	0	0	0	3	3	0	0	0	3	6		
Hisp/Lat	7	2	9	0	18	2	0	1	0	3	21		
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0		
White	143	2	30	0	175	37	1	9	0	47	222		
Unknown	0	0	1	0	1	2	1	1	0	4	5		
TOTAL	165	6	133	0	304	48	2	33	0	83	387		

Math Public Large Group

Math Public Medium Group

Doctorate Granting Departments of Mathematics

	40	of	40	departm	ents res	oonding		(0	with no	degrees)
			MEN					WOMEN			
		Citize	nship				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	3	59	0	65	3	1	33	0	37	102
BI/Afr Am	0	1	1	0	2	0	0	0	0	0	2
Hisp/Lat	3	0	7	0	10	2	0	1	0	3	13
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	82	4	19	0	105	33	3	7	0	43	148
Unknown	22	1	1	0	24	4	0	0	0	4	28
TOTAL	110	9	87	0	206	42	4	41	0	87	293

Math Public Small Group

Doctorate Granting Departments of Mathematics

	64	of	64	departm	ents res	oonding		(10	with no	degrees)
			MEN								
		Citize	nship				Citize	nship			
	Non-US							Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	2	0	0	0	2	1	0	0	0	1	3
Asian	1	0	50	0	51	2	0	24	0	26	77
Bl/Afr Am	2	0	1	0	3	1	1	1	0	3	6
Hisp/Lat	2	1	1	0	4	1	1	2	0	4	8
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	65	1	8	0	74	22	0	5	0	27	101
Unknown	9	0	0	0	9	2	0	0	0	2	11
TOTAL	81	2	60	0	143	29	2	32	0	63	206

Page 2



		Doctorate Granting Departments of Mathematics										
	24	of	24	departm	ents resp	oonding		(0	with no	degrees)	
			MEN					WOMEN				
		Citize	nship				Citize	nship				
			Non-US					Non-US				
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL	
Am Ind/Alas	3	0	0	0	3	0	0	0	0	0	3	
Asian	4	0	45	3	52	2	0	10	1	13	65	
BI/Afr Am	1	0	1	0	2	0	0	0	0	0	2	
Hisp/Lat	0	0	9	0	9	1	0	0	0	1	10	
Haw/Pac Is	0	0	0	0	0	1	0	3	0	4	4	
White	54	3	26	1	84	14	1	12	0	27	111	
Unknown	7	0	0	0	7	2	0	0	0	2	9	
TOTAL	69	3	81	4	157	20	1	25	1	47	204	

Math Private Large Group

Math Private Small Group

Doctorate Granting Departments of Mathematics

	28	of	28	departm	nents res	ponding		(5	with no	degrees)
			MEN					WOMEN			
		Citize	nship				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	1	0	7	0	8	1	0	3	0	4	12
BI/Afr Am	4	0	1	0	5	1	0	0	0	1	6
Hisp/Lat	0	1	1	0	2	1	0	0	0	1	3
Haw/Pac Is	0	0	0	0	0	0	0	0	0	0	0
White	25	0	4	0	29	8	0	0	0	8	37
Unknown	3	0	0	0	3	0	0	1	0	1	4
TOTAL	33	1	13	0	47	11	0	4	0	15	62

Applied Mathematics Group

Doctorate Granting Departments of Applied Mathematics

	30 of 30 departments responding							(3	with no	degrees)
			MEN					WOMEN			
		Citize	nship			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	6	3	25	5	39	2	1	23	2	28	67
Bl/Afr Am	1	0	2	0	3	1	0	0	0	1	4
Hisp/Lat	5	1	1	0	7	2	1	0	0	3	10
Haw/Pac Is	1	0	0	0	1	1	0	0	0	1	2
White	43	2	9	0	54	18	0	1	0	19	73
Unknown	1	0	0	0	1	3	1	0	0	4	5
TOTAL	57	6	37	5	105	27	3	24	2	56	161

Page 3



Doctorate Granting Departments of Statistics											
	59	59 of 59 departments respon						(5	with no	degrees)
			MEN			WOMEN					
		Citize	nship			Citizenship					
			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	8	9	93	0	110	4	8	71	1	84	194
BI/Afr Am	2	0	4	0	6	1	0	2	0	3	9
Hisp/Lat	3	2	4	1	10	1	0	0	0	1	11
Haw/Pac Is	1	0	0	0	1	0	0	0	0	0	1
White	53	3	10	0	66	21	1	6	0	28	94
Unknown	2	0	0	0	2	1	0	0	0	1	3
TOTAL	69	14	111	1	195	29	9	79	1	118	313

Statistics Group octorate Granting Departments of Statistic

Biostatistics Group

Doctorate Granting Departments of Biostatistics

	36 of 36 departments responding							(8	with no	degrees)
	MEN							WOMEN			
		Citize	nship			Citizenship					
	Non-US							Non-US			
	US	Perm	Temp	Unk	Total	US	Perm	Temp	Unk	Total	TOTAL
Am Ind/Alas	0	0	2	0	2	0	0	0	0	0	2
Asian	4	4	36	1	45	5	9	31	0	45	90
BI/Afr Am	3	2	0	0	5	5	0	0	0	5	10
Hisp/Lat	2	0	0	0	2	1	1	3	0	5	7
Haw/Pac Is	1	0	0	0	1	0	0	0	0	0	1
White	27	2	1	2	32	24	2	3	0	29	61
Unknown	0	0	0	0	0	1	0	0	0	1	1
TOTAL	37	8	39	3	87	36	12	37	0	85	172

Page 4



Section on Demographics

Supplemental Table D.3: U.S. Citizen Doctoral Recipients, Fall 2002 to Fall 2012

Year	Total Doctorates Granted by U.S. Institutions	Doctorates ted by U.S. stitutions	
2002-03	1037	499	48%
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%

Supplemental Table D.4: Gender of U.S. Citizen Doctoral Recipients, Fall 2002 to Fall 2012

Year	Total U.S. Citizen Doctoral Recipients	Male	Female	% Female
2002-03	499	341	158	32%
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%



Section on Females

Supplemental Table F.1: Females as a Percentage of 2011–12 New Ph.D.s Produced by and Hired by Doctoral-Granting Department

	Math. Public Large	Math. Public Medium	Math. Public Small	Math. Private Large	Math. Private Small	Applied Math.	Statistics	Biostatistics	Total
Produced	21%	30%	30%	23%	24%	35%	38%	49%	31%
Hired	21%	23%	21%	25%	38%	20%	27%	38%	