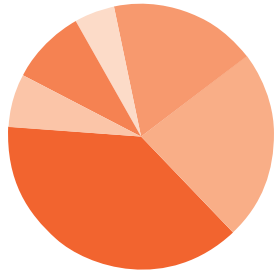
ANNUAL SURVEY



Report on the 2015–2016 Employment Experiences of the New Doctoral Recipients

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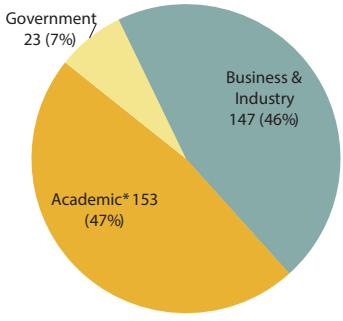
This report provides information on employment gathered from a subset of the 2015–16 new PhDs on the Employment Experiences of New Doctoral Recipients (EENDR) Survey. It expands on the details of employment that are not available through the departments.

The EENDR survey was sent to the 1,656 new PhDs for which departments provided current contact information by early October of 2016. Of these individuals, 730 (44%) responded. The employment status is known for 721 of these individuals. Of the 698 who reported being employed, 4% are part-time and 24% indicated they were actively looking for new employment. The US unemployment among this group is 2.8%

Figure EE.1: EENDR Respondents Reporting Permanent US Employment by Sector

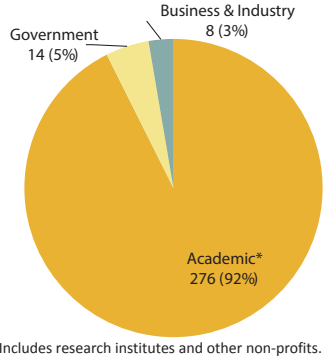


* Includes research institutes and other non-profits.

Of the 323 permanently employed:

- 37% are women.
- 63% of those reporting academic employment hold tenured/ tenure-track positions (up from 58% last year).

Figure EE.2: EENDR Respondents Reporting Temporary US Employment by Sector

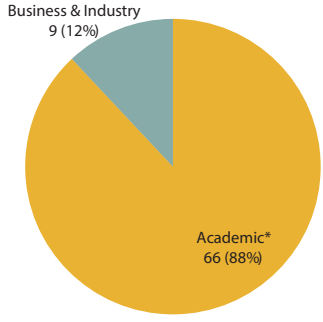


* Includes research institutes and other non-profits.

Of the 298 temporarily employed:

- 31% are women.
- 46% were unable to find a suitable permanent position (down from 47% last year).
- 72% are employed in postdocs, and 38% of these reported they could not find a suitable permanent position.

Figure EE.3. EENDR Respondents Employed Outside the US by Sector



* Includes research institutes and other non-profits.

Of the 75 employed outside the US:

- 17% are women.
- 17% are US citizens.
- 72% are employed in postdocs.

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

Year	Perm Total	%	Temp Total	%	Temporary: Perm Not Avail	Temporary: % of Temp Total	Temporary Postdocs: Total	Temporary Postdocs: % of Temp Total	Temporary Postdocs: Perm Not Avail	Temporary Postdocs: % of Temp Postdocs	#(%) Unknown
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
Fall 2014	363	51%	343	49%	148	43%	260	76%	88	34%	0
Fall 2015	357	51%	341	49%	160	47%	258	76%	102	40%	0
Fall 2016	323	52%	298	48%	136	46%	214	72%	82	38%	2 (<1%)

Table EE.1 compares the status of EENDR respondents employed in the US over the last five years:

- 52% of those employed for fall 2016 are in permanent positions. While this is higher than the proportion reported for fall 2015, it is lower than the high of 53% for fall 2013.
- The proportion of those in temporary positions is 48%, this is a drop from last year's figure and 8 percentage points lower than the five-year high of 56%.
- 46% of those holding temporary positions were unable to find suitable permanent positions. While this is down from last year, it is higher than the five-year low of 39% for fall 2012.
- 38% of those holding postdoc positions were unable to find suitable permanent positions. This figure is down seven percentage points from the five-year high of 45%; and up four percentage points from the low in Fall 2014.

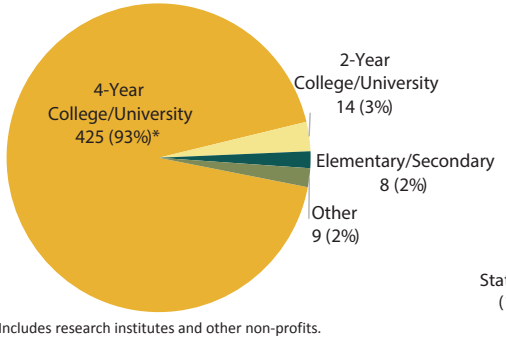
Table EE.2: Percentage of EENDR Respondents Employed in the US by Employment Sector within Job Status

Year	Permanent			Temporary		
	Acad	Govn	B/I	Acad	Govn	B/I
Fall 2012	61%	8%	32%	92%	5%	2%
Fall 2013	53%	7%	40%	92%	4%	4%
Fall 2014	54%	6%	40%	92%	5%	3%
Fall 2015	44%	8%	48%	93%	3%	4%
Fall 2016	47%	7%	46%	93%	5%	3%

Looking at Table EE.2, we see that

- Permanent employment in the academic sector rebounded slightly to 47% after dropping to a five-year low of 44% last year, whereas employment in business/industry and goverment dropped to 46% and 7%, respectively.
- Temporary employment in all three sectors has remained essentially unchanged over this five-year period.

Figure EE.4. Employment by Type of Educational Institution (Educ)



* Includes research institutes and other non-profits.

Figure EE.5. Employment by Type of Government (Gov)

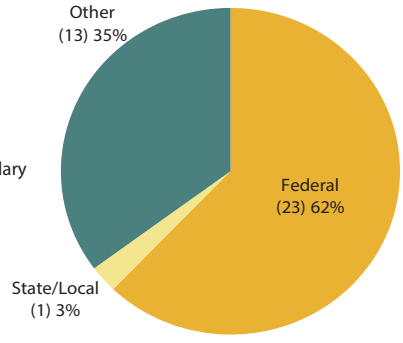
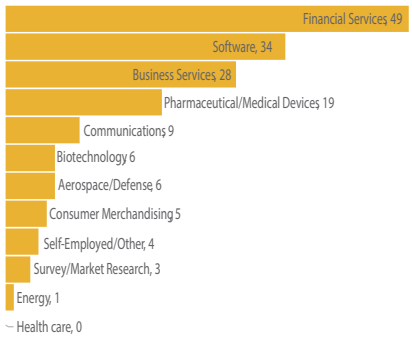


Figure EE.6. Employment by Type of Business/Industry (BI)



Looking at those employed in education (456) we see that:

- US citizens hold 65% of these positions; 62% are employed at a 4-Year college/ university.
- Females hold 33% of these positions; 63% of these are US citizens and 30% hold temporary positions.
- 66% of these positions are temporary; of those in temporary positions 62% are US citizens and 46% could not find a suitable permanent position.
- 31% of those employed in education are currently looking for another position.

Looking at those employed in government (37) we see that:

- US citizens hold 47% of these positions.
- 38% are female; of these women, 64% work in the federal goverment.
- 38% hold temporary positions; 86% are US citizens and 8% could not find a suitable permanent position.
- 87% of those employed in Gov are currently looking for another position.

Looking at those employed by type of Business/Industry (164) we see that:

- 47% are US citizens.
- Females hold 32% of BI positions; 51% of these are US citizens and 23% work in financial services.
- 6% hold temporary positions; almost all are held by non-US citizens and 10% could not find a suitable permanent position.
- 14% of those employed in BI are currently looking form another position.

Figure EE.7. Age Distribution of New PhD Respondents

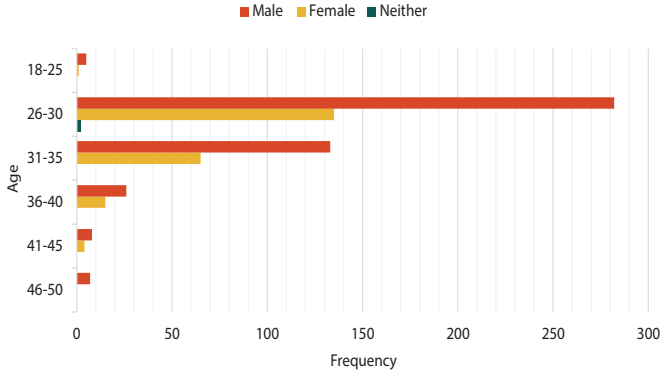


Figure EE.7 gives the age distribution of the 683 new doctoral recipients who respond to this question. The median age of new doctoral recipients was 29 while the mean was 30.5.

- The youngest new PhD recipient was 18 and the oldest was 50.
- 61% of all new PhD recipients are between the ages of 26–30
- The mode is 28 (21% of females and 18% of males reported being age 28).

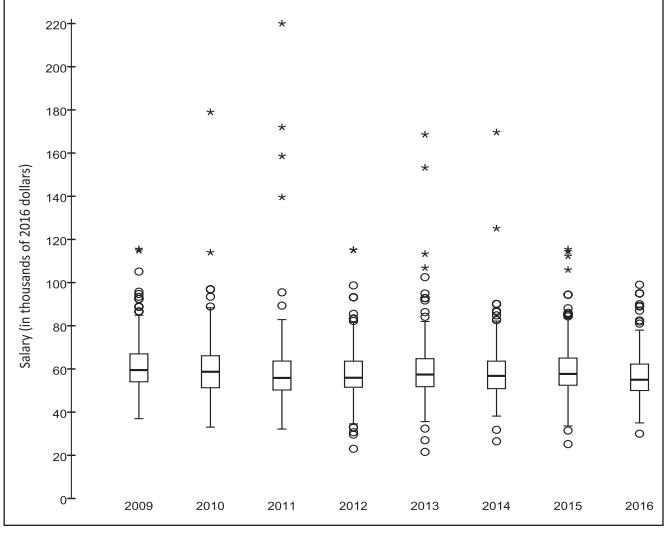
Starting Salaries of the 2015–2016 Doctoral Recipients

The starting salary figures were compiled from information gathered on the EENDR questionnaires sent to 1,656 individuals using addresses provided by the departments granting the degrees; 730 individuals responded between late October 2016 and June 2017. Responses with insufficient data or from individuals who indicated they had part-time or non-US 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† (in thousands of dollars)

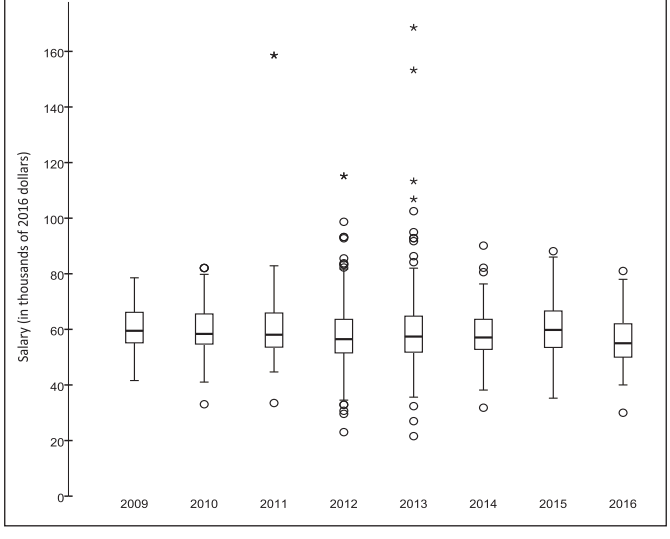
PhD Year	Min	Q_1	Median	Q_3	Max
Total (148 male/95 female/1 neither)					
2016 M	30.0	50.0	55.5	63.0	99.0
2016 F	35.0	50.0	55.0	60.5	82.0
2016 N	too few to report				
One year or less experience (130 male/84 female/1 neither)					
2016 M	30.0	50.0	55.0	63.0	99.0
2016 F	35.0	50.0	55.0	60.0	77.0
2016 N	too few to report				



† Includes postdoctoral salaries.

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

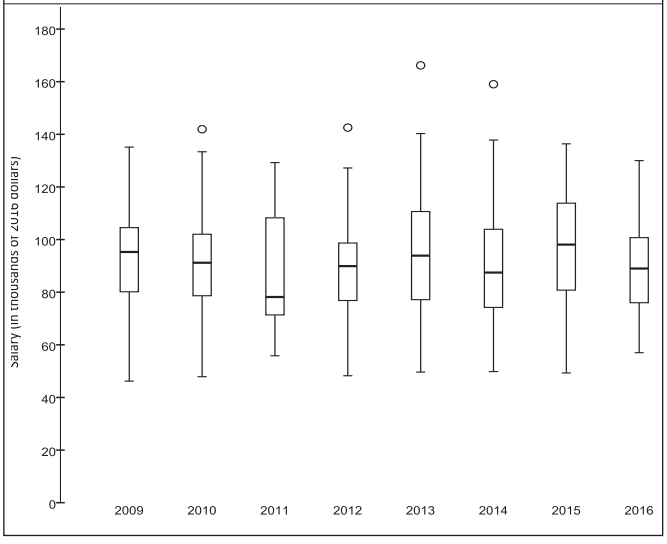
PhD Year	Min	Q_1	Median	Q_3	Max
Total (64 male/25 female/0 neither)					
2016 M	30.0	49.3	55.0	61.3	81.0
2016 F	45.0	53.5	55.0	62.6	78.0
2016 N	none to report				
One year or less experience (59 male/23 female/0 neither)					
2016 M	30.0	49.2	55.0	60.5	81.0
2016 F	45.0	54.3	59.0	62.8	78.0
2016 N	none to report				



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

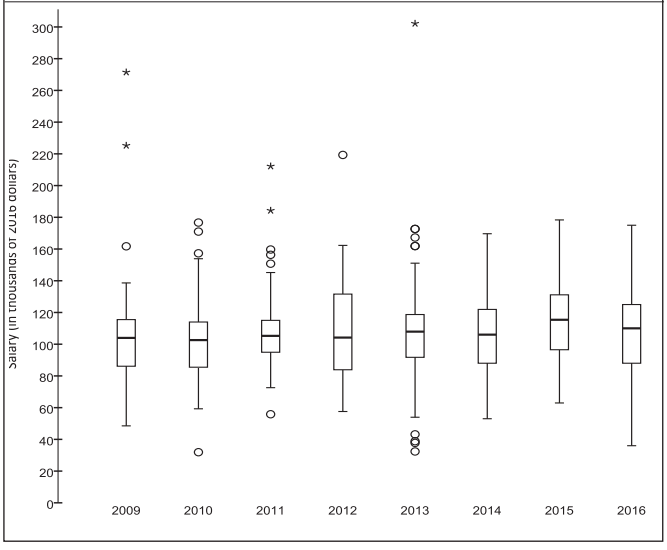
Government
11–12-Month Starting Salaries
(in thousands of dollars)

PhD Year	Min	Q_1	Median	Q_3	Max
Total (23 male/14 female/0 neither)					
2016 M	57.0	74.8	85.7	93.3	130.0
2016 F	68.5	86.8	98.2	101.1	112.0
2016 N	none to report				
One year or less experience (20 male/9 female/0 neither)					
2016 M	77.0	74.5	85.4	97.0	130.0
2016 F	68.5	81.0	98.0	98.2	112.0
2016 N	none to report				



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

PhD Year	Min	Q_1	Median	Q_3	Max
Total (102 male/49 female/0 neither)					
2016 M	36.0	86.8	110.0	125.0	175.0
2016 F	65.0	89.5	107.0	125.0	160.0
2016 N	none to report				
One year or less experience (76 male/39 female/0 neither)					
2016 M	45.0	84.2	106.5	125.0	175.0
2016 F	70.0	91.5	105.4	125.0	143.0
2016 N	none to 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, 2015–June 30, 2016 is designated as 2016. 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 2009 through 2016. Values plotted for 2009 through 2015 are converted to 2016 dollars using the implicit price deflator prepared annually by the Bureau of Economic Analysis, US 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). Upper whiskers extend from Q_3 to the largest data value below Q_3+1.5IQR, and lower whiskers from Q_1 down to the smallest data value above Q_1-1.5IQR. Data points falling between Q_3+1.5IQR and Q_3+3IQR or Q_1-1.5IQR and Q_3-3IQR are designated as outliers and plotted as circles (o). Data outside the range Q_1-3IQR to Q_3+3IQR are designated as extreme outliers and plotted as stars (*).

Response Rates

New PhD Recipient Response Rates by Granting Department Grouping

Granting Department Group	Number	Percent
Math Public Large	152 of 348	44%
Math Public Medium	130 of 305	43%
Math Public Small	103 of 218	47%
Math Private Large	112 of 215	52%
Math Private Small	41 of 84	49%
Applied Math	51 of 97	53%
Statistics	82 of 246	33%
Biostatistics	59 of 143	41%
Total	**730 of 1656**	**44%**

Distribution of New PhD Recipient Responses by Employer Type

Employer Type	Number	Percent
Math Public Large	49	7%
Math Public Medium	31	4%
Math Public Small	34	5%
Math Private Large	32	4%
Math Private Small	17	2%
Applied Math	7	1%
Statistics	11	2%
Biostatistics	16	2%
Masters	33	5%
Bachelors	96	13%
Two-Year institutions	14	2%
Other Academic	57	8%
Research Institute/Other Non-profit	33	5%
Government	37	5%
Business/Industry	157	22%
Non-US Academic	66	9%
Non-US Nonacademic	8	1%
Not Seeking (US)	5	1%
Still Seeking (US)	18	2%
Unknown (US)	1	0%
Non-US: Not seeking, Still seeking, Unknown	8	1%
Total	**730**	**100%**

Acknowledgments

The Annual Survey attempts to provide an accurate appraisal and analysis of various aspects of the academic mathematical sciences scene for the use and benefit of the community and for filling the information needs of the professional organizations. Every year, college and university departments in the United States are invited to respond. The Annual Survey relies heavily on the conscientious efforts of the dedicated staff members of these departments for the quality of its information. On behalf of the Data Committee and the Annual Survey Staff, we thank the many secretarial and administrative staff members in the mathematical sciences departments for their cooperation and assistance in responding to the survey questionnaires. For this EENDR report, we thank the PhD recipients responded to the survey. Their participation is vital to our provided accurate and timely information.

The Annual Survey is co-sponsored by the American Mathematical Society (AMS), the American Statistical Association (ASA), Institute for Mathematical Statistics (IMS), Mathematical Association of America (MAA), and the Society for Industrial and Applied Mathematics (SIAM).