

## ANNUALSURVEY

# Report on the 2015-2016 New Doctoral Recipients 

Amanda L. Golbeck, Thomas H. Barr, and Colleen A. 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, 2015 through June 30, 2016. Information in this report was provided by 298 of the 322 doctoral-granting departments surveyed, with additional information provided by the individual new doctoral recipients. Readers should keep in mind that the drops seen in the Statistics and Biostatistics groups are likely the result of nonresponse; 23 (10 Statistics \& 13 Biostatistics) of 105 departments did not respond in time for the publication of this report.

The 2015-2016 Report on Employment Experiences of New Doctoral Recipients immediately following this report provides an analysis of the fall 2016 employment plans, of the 730 PhD recipients who responded to this survey, and a demographic profile summarizing characteristics of their citizenship status, gender, and racial/ethnic group.

Detailed information, including tables not appearing in this report, is available on the AMS website at www.ams.org/ annual-survey.

## Doctoral Degrees Awarded

In mathematical sciences 1,921 PhDs were awarded by 279 doctoral-granting departments; 19 of these departments awarded no doctoral degrees.

The highest percentage, 30\% (575) of the new PhDs had a dissertation in statistics/biostatistics, followed by algebra/number theory with $15 \%$ (279) and applied mathematics with $13 \%$ (248).

Comparing PhDs awarded in 2015-16 to 2014-15 the number of PhDs awarded:

- Increased about $1 \%$ from 1,901 to 1,921. Of the 272 departments that responded both this year and last year the number of PhDs awarded decreased to 1,871 from 1,901
- Increased in all groups except Applied Math, Statistics, and Biostatistics
- Increased 22\% in Math Public Small, 28\% in Math Private Small, $10 \%$ in Math Private large, and less than 3\% in both Math Public Large and Medium
- Decreased 7\% in Applied Math, 16\% in Statistics, and 9\% in Biostatistics

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


Total Degrees Awarded: 1,921
*See page 781 for a description of the department groupings.

## ANNUAL SURVEY

Figure A.2: New PhDs Awarded by Group


Comparing PhDs awarded in 2015-16 with those awarded in 2005-06:

- PhDs awarded have increased more than $48 \%$ over the last 10 years.
- Degrees awarded by Doctoral Math and by Statistics/Biostatistics combined have increased $47 \%$ and $42 \%$, respectively.


## Employment

The overall US unemployment rate for the new doctoral recipients is $5.9 \%$, essentially the same as the $6.1 \%$ in $2014-15$. (Details on the calculations are on page 781.) The employment plans are known for 1,746 of the 1,921 new doctoral recipients. The number of new doctoral recipients employed in the US is 1,449 , essentially the same as last year. Among those new PhDs employed in Doctoral Math departments, $68 \%$ are in postdoc positions, down from $75 \%$ last year. The number of new PhDs taking positions in Business \& Industry is 495; last year's count was 492. All groups except Math Public Medium, Statistics and Biostatistics showed an increase in Business \& Industry.

Figure E.1: Employment Status


- $52 \%$ (757) of those who are employed in the US are US citizens, up from $50 \%$ last year.
- $\quad 79 \%$ (692) of non-US citizens whose employment status is known are employed in the US, the remaining 179 non-US citizens are either employed outside of the US or are unemployed.
- $8 \%(133)$ of the new PhDs who are employed are working at the institution that granted their degree, down from 9\% last year. These individuals constitute $15 \%$ of total US academic employed.
- $57 \%$ of those still seeking employment in the US are US citizens.

Figure E.2: US 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.

- US academic hiring increased $2 \%$ to 884 compared to 864 last year.
- Government hiring decreased 21\% (from 88 to 70 ); all doctoral-granting groups except Math Public Medium, Math Private Large, Math Private Small, and Applied Math showed decreases in the number of PhDs taking positions in this sector.


## ANNUAL SURVEY

Figure E.3: Employment in the US by Type of Employer and Citizenship Total: 1,449


- Total known to be employed: 1,642
- 35\% (576) of the new PhDs that are employed are reported to be in postdoc positions, down $5 \%$ from 603 in 2014-15.
- $52 \%$ of the new PhDs awarded by the Math Private Large group are employed in postdocs, while only $16 \%$ of new PhDs awarded by the Math Public Small group and $17 \%$ of PhDs awarded by the Statistics group are in postdocs.
- $48 \%$ of the new PhDs having US academic employment are in postdocs, down from $51 \%$ last year.

Figure E.4: PhDs Employed in Postdocs by Degree-Granting Department Group

- Number of PhDs in Postdocs


Of the US citizens whose employment status is known, $87 \%$ (757) are employed in the US, and of these:

- $32 \%$ are employed in PhD -granting departments
- $36 \%$ are employed in all other academic categories
- $33 \%$ are employed in government, business and industry

Looking at Figure E.5, we see that:

- $22 \%$ of the new PhDs in postdoc positions are employed outside the US; the same percentage as last year.
- $68 \%$ of the new PhDs employed in Doctoral Math departments are in postdoc positions, down from 75\% last year.

Figure E.5: New PhDs Employment by Citizenship, Type of Position, and Type of Employer


[^0]
## ANNUAL SURVEY

Figure E. 6 displays the US unemployment rate for new doctorates; details on the calculations are on page 781.
Figure E.6: Percentage of New Doctoral Recipents Unemployed 2006-15*


Among new doctorates reported to be in the US and whose employment status is known:

- Overall unemployment is 5.9\%.
- $6.4 \%$ of US citizens are unemployed, compared to $6.7 \%$ in fall 2015.
- $5.3 \%$ of non-US citizens are unemployed, essentially the same as the 2015 rate.
- New doctorates from the Math Public Small Group reported the highest unemployment rate at $13.7 \%$, essentially unchanged from 13.1\% last year.
- New doctorates from the Biostatistics Group reported the lowest unemployment at 2.3\%.

Figure E.7: Percentage of Employed New PhDs by Type of Employer


* Includes other academic departments and research institutes/other non-profits.
- US academic hiring increased to $54 \%$, while US nonacademic hiring has dropped to $34 \%$.
- Non-US academic hiring has dropped to 10\% (a five-year low).
- Detailed information on new PhDs employed in the US by degree-granting department group is available on the AMS website at www.ams.org/annual-survey.


## Demographics

Gender and citizenship were known for all 1,921 new PhDs reported for 2015-16. The percentage of US citizens is $49 \%$, up from $46 \%$ last year. Females accounted for $27 \%$ of the US citizen total, down from $31 \%$ last year. Non-US citizens receiving a PhD decreased to $51 \%$ from $54 \%$ last year. $10 \%$ (66) of the non-US citizens employed in the US have permanent visa status, almost unchanged from 9\% last year.

Figure D.1: Gender of Doctoral Recipients by Degree-Granting Grouping


- Females account for $30 \%$ (577) of $1,921 \mathrm{PhDs}$, down from $31 \%$ last year.
- Two individuals gender-identified as neither male or female.

Figure D.3: Gender of US Citizen Doctoral Recipients by Degree-Granting Grouping


- $51 \%$ of the males, $44 \%$ of the females, and $100 \%$ of the neither are US citizens.
- Females accounted for $27 \%$ of the US citizens.
- Among the US citizens: 2 are American Indian or Alaska Native, 75 are Asian, 29 are Black or African American, 45 are Hispanic or Latino, 7 are Native Hawaiian or Other Pacific Islander, 754 are White, and 25 are of unknown race/ethnicity.
- Math Public Large awarded the highest number (23) of PhDs to US citizen minorities, while Biostatistics awarded the smallest number (2), followed by Statistics with 3.

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


- $57 \%$ of all the PhDs awarded by the Math Public Medium group were to US citizens, while only $30 \%$ of the PhDs awarded by the Statistics group were to US citizens.
- All groups except Math Private Large, Statistics, and Biostatistics awarded more PhDs to US citizens than Non-US citizens.

Figure D.4: Citizenship of New PhD Recipients, 2010-16


Looking at the last six years, we see that:

- The proportion of PhDs awarded to US citizens is at a five-year high, $49 \%$ (937). While this is a 7\% increase from last year, it is the same percentage as in fall 2010-11.
- Non-US citizen counts decreased $4 \%$ to 984 from 1,021 last year. While this is the first year-to-year drop in six-years the non-US citizen count has increased $16 \%$ over that in 2010-11.


## Female New Doctoral Recipients

The proportion of female new doctoral recipients is $30 \%$ essentially unchanged from $31 \%$ last year. Of the 1,049 new PhDs hired into academic positions, 31\% (320) were women, compared with $30 \%$ as last year. Twenty-six percent of those hired into postdoc positions were women, with $42 \%$ of the women in postdocs being US citizens, down from $45 \%$ last year. The US unemployment rate for females is $6.0 \%$, compared to $5.9 \%$ for males and $5.9 \%$ overall.

Figure F.1: Females as a Percentage of New Doctoral Recipients Produced by and Hired by Department Grouping


- $32 \%$ of those hired into US academic positions were female (up from $31 \%$ last year).
- $42 \%$ of those hired by the Bachelor's Group were women (same as last year), $38 \%$ of those hired by the Master's Group were women (up from $26 \%$ last year), and $22 \%$ of those hired by the PhD Math groups combined were women.
- $40 \%$ of those hired into Research Institutes/Other non-profit positions were women (up from $26 \%$ last year).
- $33 \%$ of those hired into Government positions were women (down from $42 \%$ last year).
- $60 \%$ of the women employed in all doctoral groups are in postdoc positions, compared to $69 \%$ of males employed in these groups.

Figure F.2: Females as a Percentage of US Citizen Doctoral Recipients and Graduate Students


## ANNUALSURVEY

## PhDs Awarded by Statistics and Biostatistics (Stat/Biostat) Departments

This section contains information about new doctoral recipients in 59 statistics and 46 biostatistics departments. Stat/Biostat produced 466 new doctorates, all of whom had dissertations in statistics/biostatistics. This is a $13 \%$ decrease in the number reported for fall 2015, which was 538. In addition, Math Public, Math Private and Applied Math departments combined had 110 PhD recipients with dissertations in statistics. 34\% (160) of the new PhDs awarded by Stat/Biostat are US citizens (while in the other groups combined, $53 \%$ are US citizens). The unemployment rate amount US citizens with new Stat/Biostat PhDs is $3.0 \%$, essentially the same as in 2014-15..

Figure S.1: PhDs Awarded by Statistics/Biostatistics Departments

Figure S.2: Gender of PhD Recipients from Statistics/Biostatistics Departments

- Females accounted for $42 \%$ of • the 466 PhDs in Stat/Biostat, compared to Doctoral Math, where 26\% are female.


Figure S.3: Citizenship of
PhD Recipients from Statistics/Biostatistics Departments


- $24 \%$ of all mathematical sciences PhDs awarded were in the Stat/ Biostat group.
- Females account for 39\% of Statistics and $47 \%$ of Biostatistics PhDs awarded.

$38 \%$ of Stat/Biostat US citizen PhD recipients are females, while in Doctoral Math $25 \%$ of the US citizens are females.

Figure S.4: Employment Status of PhD Recipients from Statistics/Biostatistics Departments


Total PhDs Awarded: 466

- $3.2 \%$ of Stat/Biostat PhDs are unemployed, (compared to 6.8\% among Doctoral Math), unchanged from 2014-15.
- Unemployment among new PhDs with dissertations in statistics/biostatistics is 4.2\%, up from 3.4\%. Among all other dissertation groupings, $5.6 \%$ are unemployed.

Figure S.5: US-Employed PhD Recipients from Statistics/Biostatistics Departments by Type of Employer

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

## Total US Employed: 366

- $49 \%$ of Stat/Biostat PhDs are employed in Business/Industry, compared to 22\% in Math.
- $42 \%$ of those hired by Stat/Biostat were females, compared to $27 \%$ in Math.


## Remarks on US Unemployment Rate Calculations

In the unemployment calculations provided in this report, the individuals employed outside the US 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 US labor market experienced by the new doctoral recipients. This change tends to increase the rate of unemployment over that reported in prior years.

Another small change from prior years is that, 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 method. One can view a comparison of the unemployment rates using the earlier method and the currentmethod 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-MAASIAM 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 PhDs awarded between 2000 and 2010, based on their reports to the Annual Survey during this period. Furthermore, doctorate-granting
departments which self-classify their PhD 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 www. ams.org/ notices/201209/rtx120901262p.pdf.

Department Grouping Response Rates

| Doctorates Granted |
| :--- |
| Departmental Response Rates by Grouping   <br> Math Public Large 26 of 26 including 0 with no degrees <br> Math Public Medium 40 of 40 including 0 with no degrees <br> Math Public Small 62 of 64 including 8 with no degrees <br> Math Private Large 24 of 24 including 0 with no degrees <br> Math Private Small 28 of 29 including 1 with no degrees <br> Applied Math 30 of 30 including 2 with no degrees <br> Statistics 49 of 59 including 4 with no degrees <br> Biostatistics 33 of 46 including 4 with no degrees <br> Total 298 of 322 including 19 with no degrees |

As of press time for this issue of Notices, the following departments had not responded to the survey. Therefore, any PhDs which may have been awarded by these departments are not included in this report.

## Mathematics Departments

Yeshiva University

## Statistics Departments

George Washington University
Michigan State University
North Carolina State University
Oklahoma State University
University of Arizona
University of California, Davis
University of California, Los Angeles
University of California, Santa Barbara
University of Virginia
Western Michigan University

## Biostatistics Departments

## Brown University

Columbia Univesity
Georgia Southern University, College of Public Health
Saint Louis University College for Public Health \& Social Justice
University of Cincinnati, Medical College
University of Colorado, Denver
University of Illinois at Chicago
University of Kentucky
University of Louisville
University of Oklahoma, Health Science Center
University of South Carolina
University of South Florida
Virginia Commonwealth University, Medical Center

## Department Groupings

In this report, Mathematical Sciences departments are those in four-year institutions in the US that refer to themselves with a name that incorporates (with a few exceptions) "Mathematics" or "Statistics" in some form. For instance, the term includes, but is not limited to, departments of "Mathematics," "Mathematical Sciences," "Mathematics and Statistics," "Mathematics and Computer Science," "Applied Mathematics," "Statistics," and "Biostatistics." Also, Mathematics (Math) refers to departments that (with exceptions) have "mathematics" in the name; Stat/Biostat refers to departments that incorporate (again, with exceptions) "statistics" or "biostatistics" in the name but do not use "mathematics." The streamlining of language here militates against the possible objection to foreshortening the full subject names.

Starting with reports on the 2012 AMS-ASA-IMS-MAASIAM Annual Survey of the Mathematical Sciences, the Joint Data Committee implemented a new method for grouping 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 PhDs awarded between 2000 and 2010, based on their reports to the Annual Survey during that period.

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 www.ams.org/journa1s/ notices/201209/rtx120901262p.pdf.

Math Public Large consists of departments with the highest annual rate of production of PhDs , ranging between 7.0 and 24.2 per year.
Math Public Medium consists of departments with an annual rate of production of PhDs, ranging between 3.9 and 6.9 per year.
Math Public Small consists of departments with an annual rate of production of PhDs of 3.8 or less per year.
Math Private Large consists of departments with an annual rate of production of PhDs, ranging between 3.9 and 19.8 per year.
Math Private Small consists of departments with an annual rate of production of PhDs 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.
Masters contains US departments granting a master's degree as the highest graduate degree.
Bachelors contains US departments granting a baccalaureate degree only.
Doctoral Math contains all US math public, math private, and applied math mathematics departments granting a PhD as the highest graduate degree.
Mathematics (Math) contains all US Math Public, Math Private, and Applied Math, Masters, and Bachelors Groups above.
Stat/Biostat contains all doctoral-degree-granting statistics and biostatistics departments.
Listings of the actual departments that compose these groups are available on the AMS website at www. ams . org/ annual-survey/groups.

## Doctoral Degrees Conferred 2015-2016

## Supplementary List

The following list supplements the list of thesis titles published in the February 2017 Notices, pages 281-301.

## TEXAS

## Southern Methodist University (1)

Statistical Sciences

Chang, Po-Yao, Self-shrinkers to the mean curvature flow asymptotic to isoparametric cones.

## Ohio

## University of Toledo

## Mathematics and Statistics

Karki, Manoj, Invariant Riemannian metrics in four dimensional Lie groups.
Liu, Gang, A new approach to ANOVA methods for autocorrelated data.
Mei, Jingning, Inference for autoregressive coefficients and error distribution.
Pokharel, Krishna, An isospectral flow for complex upper Hessenberg matrices.
Tang, Lin, Efficient inference for periodic autoregressive coefficients with polynomial spline smooth approach.

## PENNSYLVANIA

## Bryn Mawr College (1)

Mathematics
Bryant,Kathryn,Sliceimpliesmutantribbonforodd, stranded pretzel knots.

## VIRGINIA

## George Mason University ${ }_{(2)}$

Mathematical Sciences
Locke, Rachel, Multiplication operators in discrete settings of an infinite graph and the discrete Zygmund space.
Stephens, Thomas, Topological methods for evolution equations.

## TEXAS

## Southern Methodist University (1)

## Statistical Sciences

Liao, Yijie, Marginal posterior distribution of regression parameters for the Cox model under Dirichlet and gamma process priors.


# Report on the 2015-2016 Employment Experiences of the New Doctoral Recipients 

Amanda L. Golbeck, Thomas H. Barr, and Colleen A. Rose

This report provides information on employment gathered from a subset of the 2014-15 new PhDs on the 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; the US unemployment among this group is $2.8 \%$. Of the 698 who reported being employed, $4 \%$ are part-time and $25 \%$ indicated they were actively looking for new employment.

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.


## ANNUALSURVEY

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

|  |  |  |  |  | Temporary |  | Temporary Postdocs |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Perm <br> Total | \% | Temp Total | \% | Perm Not Avail | \% of Temp Total | Total | \% of Temp Total | Perm Not Avail | \% of Temp Postdocs | $\#(\%)$ <br> 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 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 fiveyear period.

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


* Includes research institutes and other non-profits

Looking at those employed in education 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 Educ are currently looking for another position.

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


Looking at those employed in government 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.

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


Looking at those employed by type of Business/Industry 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.


## ANNUALSURVEY

Figure EE.7. Age Distribution of New PhD Respondents

■ Male Female ■ Neither


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 <br> 9-10-Month Starting Salaries ${ }^{\dagger}$ (in thousands of dollars)



[^1]

[^2]

## 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 $\mathrm{Q}_{3}$ to the largest data value below $\mathrm{Q}_{3}+1.5 \mathrm{IQR}$, and lower whiskers from $\mathrm{Q}_{1}$ down to the smallest data value below $\mathrm{Q}_{1}-1$.5IQR. Data points falling between $\mathrm{Q}_{3}+1.5 \mathrm{IQR}$ and $\mathrm{Q}_{3}+3 \mathrm{IQR}$ or $\mathrm{Q}_{1}-1.5 \mathrm{IQR}$ and $\mathrm{Q}_{3}-3 \mathrm{IQR}$ are designated as outliers and plotted as circles (o). Data outside the range $\mathrm{Q}_{1}+3 \mathrm{IQR}$ to $\mathrm{Q}_{3}+3$ IQR 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 | $\mathbf{7 3 0}$ of $\mathbf{1 6 5 6}$ | $44 \%$ |

## 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 | $\mathbf{7 3 0}$ | $\mathbf{1 0 0 \%}$ |

Table A.1: Field of Thesis of 2015-2016 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 <br> Analysis/ <br> Approxi- <br> mations | Linear <br> Nonlinear Optim./ <br> Control | Differential, Integral, \& Difference Equations | Math. Educ. | Other/ Unknown | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Math Public Large | 91 | 40 | 60 | 45 | 16 | 13 | 0 | 49 | 36 | 9 | 65 | 2 | 0 | 426 |
| Math Public Medium | 62 | 23 | 30 | 27 | 9 | 36 | 0 | 53 | 31 | 4 | 25 | 6 | 4 | 310 |
| Math Public Small | 39 | 22 | 16 | 21 | 13 | 28 | 0 | 37 | 21 | 7 | 16 | 21 | 2 | 243 |
| Math Private Large | 69 | 15 | 48 | 22 | 17 | 8 | 0 | 35 | 7 | 1 | 18 | 0 | 1 | 241 |
| Math Private Small | 15 | 7 | 25 | 10 | 3 | 2 | 0 | 11 | 9 | 0 | 12 | 0 | 3 | 97 |
| Applied Mathematics | 3 | 0 | 1 | 9 | 4 | 21 | 2 | 63 | 10 | 4 | 16 | 1 | 4 | 138 |
| Statistics | 0 | 0 | 0 | 0 | 1 | 289 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 290 |
| Biostatistics | 0 | 0 | 0 | 0 | 0 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 0 | 176 |
| Total | 279 | 107 | 180 | 134 | 63 | 397 | 178 | 248 | 114 | 25 | 152 | 30 | 14 | 1921 |
| Female | 70 | 22 | 33 | 30 | 8 | 58 | 82 | 78 | 28 | 10 | 32 | 20 | 5 | 576 |
| Male | 209 | 85 | 146 | 104 | 55 | 239 | 96 | 170 | 86 | 15 | 119 | 10 | 9 | 1343 |
| Neither | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey
Table D.1: Gender and Citizenship of 2015-2016 New Doctoral Recipients by Degree-Granting Department

|  |  | Citi | Status |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Gender | U.S. | Non-U.S. | Total |
| Math Public Large | Male <br> Female <br> Neither | $\begin{gathered} 192 \\ 50 \\ 0 \end{gathered}$ | $\begin{gathered} 148 \\ 36 \\ 0 \end{gathered}$ | $\begin{gathered} 340 \\ 86 \\ 0 \end{gathered}$ |
| Math Public Medium | Male <br> Female <br> Neither | $\begin{gathered} 132 \\ 45 \\ 0 \end{gathered}$ | $\begin{gathered} 93 \\ 40 \\ 0 \end{gathered}$ | $\begin{gathered} 225 \\ 85 \\ 0 \end{gathered}$ |
| Math Public Small | Male <br> Female <br> Neither | $\begin{gathered} 84 \\ 41 \\ 0 \end{gathered}$ | $\begin{gathered} 82 \\ 36 \\ 0 \end{gathered}$ | $\begin{gathered} 166 \\ 77 \\ 0 \end{gathered}$ |
| Math Private Large | Male <br> Female <br> Neither | $\begin{gathered} 91 \\ 17 \\ 1 \end{gathered}$ | $\begin{gathered} 94 \\ 38 \\ 0 \end{gathered}$ | $\begin{gathered} 185 \\ 55 \\ 1 \end{gathered}$ |
| Math Private Small | Male <br> Female <br> Neither | $\begin{gathered} 39 \\ 13 \\ 1 \end{gathered}$ | $\begin{gathered} 27 \\ 17 \\ 0 \end{gathered}$ | $\begin{gathered} 66 \\ 30 \\ 1 \end{gathered}$ |
| Applied Math | Male <br> Female <br> Neither | $\begin{gathered} 46 \\ 25 \\ 0 \end{gathered}$ | $\begin{gathered} 42 \\ 25 \\ 0 \end{gathered}$ | $\begin{gathered} 88 \\ 50 \\ 0 \end{gathered}$ |
| Statistics | Male <br> Female <br> Neither | $\begin{gathered} 63 \\ 26 \\ 0 \end{gathered}$ | $\begin{gathered} 116 \\ 85 \\ 0 \end{gathered}$ | $\begin{gathered} 179 \\ 111 \\ 0 \end{gathered}$ |
| Biostatistics | Male <br> Female <br> Neither | $\begin{gathered} 37 \\ 34 \\ 0 \end{gathered}$ | $\begin{gathered} 57 \\ 48 \\ 0 \end{gathered}$ | $\begin{gathered} 94 \\ 82 \\ 0 \end{gathered}$ |
| Total by Gender | Male <br> Female <br> Neither | $\begin{gathered} \hline \hline 684 \\ 251 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline \hline 659 \\ 325 \\ 0 \end{gathered}$ | $\begin{gathered} \hline 1343 \\ 576 \\ 2 \\ \hline \end{gathered}$ |
| Total |  | 937 | 984 | 1921 |

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey
Table D.2: U.S. Citizen Doctoral Recipients,
Fall 2006 to Fall 2016

| Year | Total Doctorates <br> Granted by U.s. <br> Institutions | Total U.S. Citizen <br> Doctoral Total | $\%$ |
| :---: | :---: | :---: | :---: |
| $2006-07$ | 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 | $47 \%$ |
| $2013-14$ | 1926 | 920 | $48 \%$ |
| $2014-15$ | 1901 | 880 | $46 \%$ |
| $2015-16$ | 1921 | 937 | $49 \%$ |

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table D.3: Gender of U.S. Citizen Doctoral Recipients,
Fall 2006 to Fall 2016

| Year | Total U.S. Citizen <br> Doctoral <br> Recipients | Male | Female | Neither | \% Female |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $2006-07$ | 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 |  | $27 \%$ |
| $2013-14$ | 920 | 664 | 256 |  | $28 \%$ |
| $2014-15$ | 880 | 636 | 244 |  | $28 \%$ |
| $2015-16^{*}$ | 937 | 684 | 251 | 2 | $27 \%$ |

* Total US Citizen Doctoral Recipient counts includes two individual whose gender was reported as neither female or male.


## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table D.4: Gender, Race/Ethnicity \& Citizenship of
2015-2016 New Doctoral Recipients, July 1, 2015- June 30, 2016

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MEN |  |  |  |  | WOMEN |  |  |  |  | Neither |  |  |  |  | TOTAL |
|  | Citizenship |  |  |  | Total | US | Citizenship |  |  | Total | Citizenship |  |  |  | Total |  |
|  |  |  | Non-US |  |  |  | Non-US |  |  |  | US | Non-US |  |  |  |  |
|  | US | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  |
| Am Ind/Alas | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Asian | 52 | 30 | 416 | 20 | 518 | 23 | 22 | 203 | 14 | 262 | 0 | 0 | 0 | 0 | 0 | 780 |
| Bl/Afr Am | 18 | 7 | 12 | 2 | 39 | 11 | 2 | 1 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 53 |
| Hisp/Lat | 34 | 2 | 35 | 1 | 72 | 11 | 1 | 8 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 92 |
| Haw/Pac Is | 5 | 0 | 1 | 0 | 6 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 9 |
| White | 551 | 14 | 102 | 3 | 670 | 201 | 8 | 56 | 5 | 270 | 2 | 0 | 0 | 0 | 2 | 942 |
| Unknown | 22 | 2 | 9 | 3 | 36 | 3 | 1 | 2 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 43 |
| TOTAL | 684 | 55 | 575 | 29 | 1343 | 251 | 34 | 271 | 20 | 576 | 2 | 0 | 0 | 0 | 2 | 1921 |

All Math Public Groups Combined
Doctorate Granting Departments of Mathematics


All Math Private Groups Combined
Doctorate Granting Departments of Mathematics


## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Math Public Large Group
Doctorate Granting Departments of Mathematics

|  | 26 of 26 |  |  |  | departments responding |  |  | 10 |  |  | with no degrees) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MEN |  |  |  |  | WOMEN |  |  |  |  | Neither |  |  |  |  | TOTAL |
|  | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total |  |
|  |  |  | Non-US |  |  | US | Non-US |  |  |  | US | Non-US |  |  |  |  |
|  | US | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  |
| Am Ind/Alas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Asian | 16 | 4 | 84 | 6 | 110 | 2 | 2 | 17 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 132 |
| BI/Afr Am | 4 | 1 | 1 | 0 | 6 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 9 |
| Hisp/Lat | 11 | 0 | 14 | 0 | 25 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 |
| Haw/Pac Is | 5 | 0 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |
| White | 153 | 4 | 28 | 3 | 188 | 44 | 2 | 10 | 1 | 57 | 0 | 0 | 0 | 0 | 0 | 245 |
| Unknown | 3 | 0 | 0 | 2 | 5 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 7 |
| TOTAL | 192 | 9 | 128 | 11 | 340 | 50 | 5 | 28 | 3 | 86 | 0 | 0 | 0 | 0 | 0 | 426 |

Math Public Medium Group
Doctorate Granting Departments of Mathematics

|  | 40 |  | of 40 |  | departments responding |  |  |  |  | 0 | with no degrees) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MEN |  |  |  |  | WOMEN |  |  |  |  | Neither |  |  |  |  | TOTAL |
|  | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total |  |
|  |  |  | Non-US |  |  | US | Non-US |  |  |  | US | Non-US |  |  |  |  |
|  | US | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  |
| Am Ind/Alas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Asian | 1 | 2 | 67 | 0 | 70 | 2 | 2 | 24 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 98 |
| BI/Afr Am | 3 | 1 | 3 | 0 | 7 | 4 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hisp/Lat | 11 | 0 | 4 | 1 | 16 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 19 |
| Haw/Pac Is | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| White | 114 | 2 | 12 | 0 | 128 | 35 | 2 | 9 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 174 |
| Unknown | 3 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| TOTAL | 132 | 5 | 86 | 2 | 225 | 45 | 4 | 36 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 310 |

Math Public Small Group
Doctorate Granting Departments of Mathematics


Math Private Large Group
Doctorate Granting Departments of Mathematics


Math Private Small Group
Doctorate Granting Departments of Mathematics

|  | 28 |  | of | 29 | departments responding |  |  |  |  | $1 \quad 1$ | with no degrees) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MEN |  |  |  |  | WOMEN |  |  |  |  | Neither |  |  |  |  | TOTAL |
|  | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total |  |
|  |  |  | Non-US |  |  | US | Non-US |  |  |  | US | Non-US |  |  |  |  |
|  | US | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  |
| Am Ind/Alas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Asian | 1 | 2 | 15 | 2 | 20 | 0 | 1 | 10 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 31 |
| Bl/Afr Am | 4 | 0 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Hisp/Lat | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Haw/Pac Is | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| White | 31 | 0 | 3 | 0 | 34 | 13 | 3 | 2 | 1 | 19 | 1 | 0 | 0 | 0 | 1 | 54 |
| Unknown | 3 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 39 | 2 | 23 | 2 | 66 | 13 | 4 | 12 | 1 | 30 | 1 | 0 | 0 | 0 | 1 | 97 |

## Applied Mathematics Group

Doctorate Granting Departments of Applied Mathematics


Statistics Group
Doctorate Granting Departments of Statistics


Biostatistics Group
Doctorate Granting Departments of Biostatistics

|  |  | 33 |  | 46 | departments responding |  |  |  |  | 4 | with no degrees) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MEN |  |  |  |  | WOMEN |  |  |  |  | Neither |  |  |  |  | TOTAL |
|  | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total | Citizenship |  |  |  | Total |  |
|  | US | Non-US |  |  |  | US | Non-US |  |  |  | US | Non-US |  |  |  |  |
|  |  | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  | Perm | Temp | Unk |  |  |
| Am Ind/Alas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Asian | 10 | 5 | 38 | 5 | 58 | 9 | 5 | 31 | 6 | 51 | 0 | 0 | 0 | 0 | 0 | 109 |
| Bl/Afr Am | 0 | 2 | 1 | 1 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hisp/Lat | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| Haw/Pac Is | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| White | 27 | 2 | 1 | 0 | 30 | 23 | 0 | 3 | 1 | 27 | 0 | 0 | 0 | 0 | 0 | 57 |
| Unknown | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| TOTAL | 37 | 9 | 42 | 6 | 94 | 34 | 5 | 36 | 7 | 82 | 0 | 0 | 0 | 0 | 0 | 176 |

Table D.5: Profile of PhDs Awarded to Underrepresented Minorities (URMs)*
by Degree Granting Group and Citizenship, July 1, 2015 - June 30, 2016

|  | Number of PhDs Awarded to US Citizens \& Permanent Residents | Underrespresented Minorities |  | Number of PhDs awarded to URMs | As \% of Total URMs | URMs as \% of PhDs awarded to US Citizens \& Permanent Residents within Group |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | US Citizens | Permanent Resident |  |  |  |
| Math Public Large | 256 | 23 | 2 | 25 | 26\% | 9.8\% |
| Math Public Medium | 186 | 21 | 1 | 22 | 23\% | 11.8\% |
| Math Public Small | 138 | 9 | 2 | 11 | 12\% | 8.0\% |
| Math Private Large | 114 | 7 | 1 | 8 | 8\% | 7.0\% |
| Math Private Small | 59 | 4 | 0 | 4 | 4\% | 6.8\% |
| Applied Math | 74 | 14 | 0 | 14 | 15\% | 18.9\% |
| Statistics | 114 | 3 | 4 | 7 | 7\% | 6.1\% |
| Biostatistics | 85 | 2 | 2 | 4 | 4\% | 4.7\% |
| Total | 1026 | 83 | 12 | 95 | 100\% |  |

* Underrepresented minorites include any person, who is a U.S. Citizen or Permanent Resident, who is Black or African American, Hispanic or Latino, American Indian, Alaska Native, Native Hawaiian or Other Pacfic Islander.


## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Figure D.6: 2015-2016 PhDs Awarded by Department Groupings, US Citizens and Perment Residents, and Underrepresented Minorities

Total number of Phds awarded
PhDs awarded to underrepresented minorities*
PhDs awarded to US citizens and permanent residents



* Underrepresented minorites include any person, who is a US. Citizen or Permanent Resident, who is Black or African American, Hispanic or Latino, American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander.


## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table F.1: Number and Percentage of 2015-16 New Female PhDs Produced by and Hired by Doctoral-Granting Department Grouping

|  | Math Public Large | Math Public Medium | Math Public Small | Math Private Large | Math Private Small | Applied Math | Statistics | Biostatistics | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Females Produced | 86 | 85 | 77 | 55 | 30 | 50 | 111 | 82 | 576 |
| Percentage ${ }^{1}$ | 20\% | 27\% | 32\% | 23\% | 31\% | 36\% | 38\% | 47\% | 30\% |
| Female Hired | 24 | 16 | 19 | 20 | 9 | 5 | 12 | 7 | 112 |
| Percentage ${ }^{2}$ | 21\% | 14\% | 17\% | 18\% | 8\% | 4\% | 11\% | 6\% | 19\% |
| Percentge of Produced Hired ${ }^{3}$ | 28\% | 19\% | 25\% | 36\% | 30\% | 10\% | 11\% | 9\% |  |

${ }^{1}$ Females as a percentage of total produce.
${ }^{2}$ Females as a percentage of total female hires.
${ }^{3}$ Females hired as a percentage of females produce by department grouping.

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table F.2: Employment Status of 2015-16 Female New Doctoral Recipeints
by Citizenship Status

| Type of Employer | US Citizen | Non-US Citizens |  |  | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Permenant Visa | Temporary Visa | Unknown Visa |  |
| US Employer | 219 | 24 | 195 | 17 | 455 |
| US Academic | 159 | 11 | 104 | 8 | 282 |
| Math Public | 40 | 1 | 41 | 4 | 86 |
| Math Private | 39 | 5 | 38 | 2 | 84 |
| Applied Math | 87 | 2 | 32 | 1 | 122 |
| Statistics | 27 | 0 | 24 | 1 | 52 |
| Biostatistics | 6 | 0 | 6 | 0 | 12 |
| NonPhD | 96 | 9 | 40 | 1 | 146 |
| RI/NP | 9 | 1 | 12 | 2 | 24 |
| US Nonacad | 60 | 13 | 91 | 9 | 173 |
| NonUS Employer | 8 | 2 | 30 | 1 | 41 |
| NonUS Acad | 8 | 1 | 28 | 1 | 38 |
| NonUS Nonacad | 0 | 1 | 2 | 0 | 3 |
| Not Seeking | 3 | 2 | 0 | 0 | 5 |
| Seeking | 8 | 4 | 17 | 0 | 29 |
| Subtotal | 238 | 32 | 242 | 18 | 530 |
| Unk US | 13 | 2 | 6 | 0 | 21 |
| Unk NonUS | 0 | 0 | 23 | 2 | 25 |
| Total | 251 | 34 | 271 | 20 | 576 |

## Annual Survey of the Mathematical Sciences

www.ams.org/ annual-survey

Table F.3: Employment Status of 2015-2016 Female New Doctoral Recipients
by Type of Degree-Granting Department

| Type of Employer | Math Public Large | Math Public Medium | Math <br> Public <br> Small | Math Private Large | Math Private Small | Applied Math | Statistics | Biostatistics | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Math Public Large | 15 | 2 | 1 | 5 | 1 | 0 | 0 | 0 | 24 |
| Math Public Medium | 4 | 5 | 3 | 4 | 0 | 0 | 0 | 0 | 16 |
| Math Public Small | 0 | 4 | 9 | 1 | 2 | 0 | 2 | 1 | 19 |
| Math Private Large | 6 | 0 | 0 | 11 | 1 | 0 | 2 | 0 | 20 |
| Math Private Small | 5 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 9 |
| Applied Mathematics | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 5 |
| Statistics | 0 | 0 | 0 | 1 | 1 | 1 | 6 | 3 | 12 |
| Biostatistics | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 |
| Master's | 2 | 5 | 9 | 0 | 0 | 1 | 3 | 0 | 20 |
| Bachelor's | 11 | 22 | 17 | 2 | 5 | 7 | 5 | 0 | 69 |
| Two-Year Colleges | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| Other Academic Dept. | 6 | 6 | 4 | 5 | 2 | 9 | 10 | 9 | 51 |
| Research Institute/Other Notprofit | 1 | 4 | 1 | 3 | 0 | 1 | 5 | 9 | 24 |
| Government | 2 | 6 | 3 | 0 | 0 | 1 | 3 | 8 | 23 |
| Business and Industry | 12 | 12 | 10 | 10 | 5 | 19 | 55 | 27 | 150 |
| Non-US Academic | 13 | 4 | 6 | 7 | 5 | 1 | 2 | 0 | 38 |
| Non-US Nonacademic | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| Not Seeking Employment | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 5 |
| Still Seeking Employment | 4 | 6 | 6 | 1 | 3 | 3 | 5 | 1 | 29 |
| Unknown (US) | 0 | 2 | 3 | 2 | 1 | 2 | 5 | 6 | 21 |
| Unknown (non-US)* | 3 | 3 | 1 | 2 | 2 | 1 | 3 | 10 | 25 |
| Total | 86 | 85 | 77 | 55 | 30 | 50 | 111 | 82 | 576 |

# Annual Survey of the Mathematical Sciences 

www.ams.org/ annual-survey

Figure F.3: 2015-2016 New Female PhDs in Postdocs by Degree-Granting Department


## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table E.1: Employment Status of 2015-2016 Doctoral Recipients in the Mathematical Sciences by Type of Degree-Granting Department

| Type of Employer | Math <br> Public <br> Large | Math <br> Public Medium | Math <br> Public <br> Small | Math Private Large | Math Private Small | Applied Math | Statistics | Biostatistics | Total | Female | Male | Neither |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Math Public Large | 58 | 22 | 5 | 28 | 3 | 3 | 0 | 0 | 119 | 24 | 94 | 1 |
| Math Public Medium | 17 | 25 | 7 | 8 | 3 | 2 | 1 | 0 | 63 | 16 | 47 | 0 |
| Math Public Small | 12 | 11 | 34 | 3 | 4 | 2 | 3 | 1 | 70 | 19 | 51 | 0 |
| Math Private Large | 28 | 5 | 0 | 41 | 1 | 2 | 3 | 0 | 80 | 20 | 60 | 0 |
| Math Private Small | 14 | 6 | 2 | 2 | 6 | 0 | 1 | 0 | 31 | 9 | 22 | 0 |
| Applied Mathematics | 5 | 3 | 0 | 2 | 1 | 11 | 0 | 0 | 22 | 5 | 17 | 0 |
| Statistics | 1 | 0 | 0 | 2 | 1 | 1 | 25 | 6 | 36 | 12 | 24 | 0 |
| Biostatistics | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 22 | 32 | 7 | 25 | 0 |
| Master's | 10 | 14 | 19 | 2 | 2 | 2 | 4 | 0 | 53 | 20 | 33 | 0 |
| Bachelor's | 31 | 50 | 42 | 6 | 14 | 11 | 9 | 1 | 164 | 69 | 94 | 1 |
| Two-Year Colleges | 3 | 3 | 15 | 0 | 2 | 0 | 1 | 0 | 24 | 6 | 18 | 0 |
| Other Academic Dept | 18 | 16 | 12 | 13 | 5 | 17 | 26 | 24 | 131 | 51 | 80 | 0 |
| Research Institute/ Other Nonprofit | 8 | 9 | 4 | 6 | 2 | 2 | 12 | 16 | 59 | 24 | 35 | 0 |
| Government | 10 | 13 | 7 | 4 | 5 | 11 | 10 | 10 | 70 | 23 | 47 | 0 |
| Business and Industry | 96 | 56 | 38 | 54 | 14 | 56 | 133 | 48 | 495 | 150 | 345 | 0 |
| Non-US Academic | 55 | 25 | 22 | 32 | 11 | 3 | 15 | 2 | 165 | 38 | 127 | 0 |
| Non-US Nonacademic | 9 | 1 | 2 | 7 | 1 | 3 | 4 | 1 | 28 | 3 | 25 | 0 |
| Not Seeking Employment | 2 | 5 | 1 | 1 | 0 | 0 | 1 | 3 | 13 | 5 | 8 | 0 |
| Still Seeking Employment | 21 | 21 | 15 | 7 | 10 | 5 | 9 | 3 | 91 | 29 | 62 | 0 |
| Unknown (US) | 12 | 16 | 8 | 9 | 4 | 6 | 12 | 15 | 82 | 21 | 61 | 0 |
| Unknown (non-US)* | 16 | 9 | 10 | 14 | 8 | 1 | 11 | 24 | 93 | 25 | 68 | 0 |
| Total | 426 | 310 | 243 | 241 | 97 | 138 | 290 | 176 | 1921 | 576 | 1343 | 2 |
| Female | 86 | 85 | 77 | 55 | 30 | 50 | 111 | 82 | 576 |  |  |  |
| Male | 340 | 225 | 166 | 185 | 66 | 88 | 179 | 94 | 1343 |  |  |  |
| Neither | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |  |  |  |

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table E.2: Employment Status of 2015-2016 Doctoral Recipients in the Mathematical Sciences
by Type of Degree-Granting Department with Citizenship

| Type of Employer | Math <br> Public <br> Large | Math <br> Public Medium | Math <br> Public <br> Small | Math <br> Private <br> Large | Math Private Small | Applied Math | Statistics | Biostatistics | Total | US Citizen | Non-US <br> Citizen |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Math Public Large | 58 | 22 | 5 | 28 | 3 | 3 | 0 | 0 | 119 | 58 | 61 |
| Math Public Medium | 17 | 25 | 7 | 8 | 3 | 2 | 1 | 0 | 63 | 38 | 25 |
| Math Public Small | 12 | 11 | 34 | 3 | 4 | 2 | 3 | 1 | 70 | 44 | 26 |
| Math Private Large | 28 | 5 | 0 | 41 | 1 | 2 | 3 | 0 | 80 | 37 | 43 |
| Math Private Small | 14 | 6 | 2 | 2 | 6 | 0 | 1 | 0 | 31 | 20 | 11 |
| Applied Mathematics | 5 | 3 | 0 | 2 | 1 | 11 | 0 | 0 | 22 | 14 | 8 |
| Statistics | 1 | 0 | 0 | 2 | 1 | 1 | 25 | 6 | 36 | 15 | 21 |
| Biostatistics | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 22 | 32 | 14 | 18 |
| Master's | 10 | 14 | 19 | 2 | 2 | 2 | 4 | 0 | 53 | 24 | 29 |
| Bachelor's | 31 | 50 | 42 | 6 | 14 | 11 | 9 | 1 | 164 | 134 | 30 |
| Two-Year Colleges | 3 | 3 | 15 | 0 | 2 | 0 | 1 | 0 | 24 | 15 | 9 |
| Other Academic Dept. | 18 | 16 | 12 | 13 | 5 | 17 | 26 | 24 | 131 | 70 | 61 |
| Research Institute/Other Nonprofit | 8 | 9 | 4 | 6 | 2 | 2 | 12 | 16 | 59 | 27 | 32 |
| Government | 10 | 13 | 7 | 4 | 5 | 11 | 10 | 10 | 70 | 62 | 8 |
| Busisness and Industry | 96 | 56 | 38 | 54 | 14 | 56 | 133 | 48 | 495 | 185 | 310 |
| Non-US Academic | 55 | 25 | 22 | 32 | 11 | 3 | 15 | 2 | 165 | 54 | 111 |
| Non-US Nonacademic | 9 | 1 | 2 | 7 | 1 | 3 | 4 | 1 | 28 | 4 | 24 |
| Not Seeking Employment | 2 | 5 | 1 | 1 | 0 | 0 | 1 | 3 | 13 | 8 | 5 |
| Still Seeking Employment | 21 | 21 | 15 | 7 | 10 | 5 | 9 | 3 | 91 | 52 | 39 |
| Unknown (US) | 12 | 16 | 8 | 9 | 4 | 6 | 12 | 15 | 82 | 60 | 22 |
| Unknown (non-US)* | 16 | 9 | 10 | 14 | 8 | 1 | 11 | 24 | 93 | 2 | 91 |
| Total | 426 | 310 | 243 | 241 | 97 | 138 | 290 | 176 | 1921 | 937 | 984 |
| US Citizen | 242 | 177 | 125 | 109 | 53 | 71 | 89 | 71 | 937 |  |  |
| Non-US Citizen | 184 | 133 | 118 | 132 | 44 | 67 | 201 | 105 | 984 |  |  |

Table E.3: Employment Status of 2015-2016 New Doctoral Recipeints by Citizenship Status

| Type of Employer | US Citizen | Non-US Citizens |  |  | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Permenant Visa | Temporary Visa | Unknown Visa |  |
| US Employer | 757 | 66 | 588 | 38 | 1449 |
| US Academic | 510 | 36 | 322 | 16 | 884 |
| Math Public | 140 | 4 | 101 | 7 | 252 |
| Math Private | 57 | 0 | 54 | 0 | 111 |
| Applied Mathematics | 14 | 0 | 7 | 1 | 22 |
| Statistics | 15 | 1 | 19 | 1 | 36 |
| Biostatistics | 14 | 1 | 15 | 2 | 32 |
| NonPhD | 243 | 23 | 103 | 3 | 372 |
| RI/NP | 27 | 7 | 23 | 2 | 59 |
| US Nonacademic | 247 | 30 | 266 | 22 | 565 |
| NonUS Employer | 58 | 8 | 121 | 6 | 193 |
| NonUS Academic | 54 | 7 | 99 | 5 | 165 |
| NonUS Nonacademic | 4 | 1 | 22 | 1 | 28 |
| Not Seeking | 8 | 2 | 3 | 0 | 13 |
| Seeking | 52 | 8 | 31 | 0 | 91 |
| Subtotal | 875 | 84 | 743 | 44 | 1746 |
| Unknown US | 60 | 5 | 17 | 0 | 82 |
| Unknown NonUS | 2 | 0 | 86 | 5 | 93 |
| Total | 937 | 89 | 846 | 49 | 1921 |

Table E.4: Employment Status of 2015-2016 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 <br> Analysis/ <br> Approxi- <br> mations | Linear Nonlinear Optim./ Control | Differential, <br>  <br> Difference <br> Equations | Math. Educ. | Other/ Unknown | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Math Public Large | 27 | 12 | 18 | 6 | 4 | 3 | 0 | 16 | 11 | 1 | 20 | 0 | 1 | 119 |
| Math Public Medium | 11 | 8 | 11 | 5 | 2 | 4 | 0 | 11 | 1 | 0 | 9 | 0 | 1 | 63 |
| Math Public Small | 17 | 10 | 5 | 5 | 1 | 9 | 1 | 5 | 3 | 0 | 6 | 7 | 1 | 70 |
| Math Private Large | 16 | 3 | 20 | 10 | 8 | 2 | 0 | 7 | 3 | 0 | 11 | 0 | 0 | 80 |
| Math Private Small | 6 | 4 | 3 | 3 | 0 | 1 | 0 | 4 | 3 | 0 | 6 | 0 | 1 | 31 |
| Applied Mathematics | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 6 | 6 | 0 | 5 | 0 | 1 | 22 |
| Statistics | 0 | 0 | 0 | 0 | 3 | 27 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Biostatistics | 0 | 0 | 0 | 0 | 0 | 10 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| Master's | 10 | 4 | 3 | 4 | 2 | 11 | 0 | 3 | 3 | 3 | 3 | 7 | 0 | 53 |
| Bachelor's | 38 | 17 | 18 | 21 | 1 | 13 | 1 | 20 | 6 | 1 | 17 | 10 | 1 | 164 |
| Two-Year Colleges | 7 | 0 | 3 | 4 | 0 | 2 | 0 | 1 | 2 | 0 | 2 | 2 | 1 | 24 |
| Other Academic Dept. | 10 | 1 | 10 | 7 | 1 | 33 | 24 | 29 | 7 | 1 | 4 | 2 | 2 | 131 |
| Research Institute/ Other Nonprofit | 5 | 0 | 3 | 2 | 1 | 13 | 16 | 12 | 1 | 2 | 3 | 1 | 0 | 59 |
| Government | 3 | 5 | 2 | 4 | 0 | 15 | 10 | 14 | 10 | 2 | 5 | 0 | 0 | 70 |
| Busisness and Industry | 41 | 10 | 29 | 28 | 17 | 177 | 50 | 76 | 30 | 10 | 23 | 0 | 4 | 495 |
| Non-US Academic | 44 | 18 | 25 | 15 | 6 | 17 | 2 | 9 | 9 | 2 | 17 | 0 | 1 | 165 |
| Non-US Nonacademic | 1 | 1 | 5 | 1 | 1 | 4 | 1 | 4 | 5 | 0 | 5 | 0 | 0 | 28 |
| Not Seeking Employment | 3 | 0 | 0 | 2 | 2 | 1 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 13 |
| Still Seeking Employment | 16 | 5 | 8 | 6 | 8 | 18 | 3 | 12 | 5 | 2 | 7 | 1 | 0 | 91 |
| Unknown (US) | 14 | 3 | 9 | 3 | 2 | 20 | 15 | 9 | 4 | 0 | 3 | 0 | 0 | 82 |
| Unknown (non-US)* | 9 | 6 | 8 | 6 | 3 | 17 | 24 | 10 | 4 | 1 | 5 | 0 | 0 | 93 |
| Total | 279 | 107 | 180 | 134 | 63 | 397 | 178 | 248 | 114 | 25 | 152 | 30 | 14 | 1921 |
| Female | 70 | 22 | 33 | 30 | 8 | 158 | 82 | 78 | 28 | 10 | 32 | 20 | 5 | 576 |
| Male | 209 | 85 | 146 | 104 | 55 | 239 | 96 | 170 | 86 | 15 | 119 | 10 | 9 | 1343 |
| Neither | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |

Table E.5: 2015-2016 New PhDs Employed in the US 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* | 134 | 72 | 48 | 84 | 18 | 20 | 8 | 1 | 385 |
| Statistics \& Biostatistics | 1 | 0 | 0 | 2 | 1 | 1 | 35 | 28 | 68 |
| Master's, Bachelor's, and 2-Year Colleges | 44 | 67 | 76 | 8 | 18 | 13 | 14 | 1 | 241 |
| Other Academic and Research Institutes | 26 | 25 | 16 | 19 | 7 | 19 | 38 | 40 | 190 |
| Government | 10 | 13 | 7 | 4 | 5 | 11 | 10 | 10 | 70 |
| Business and Industry | 96 | 56 | 38 | 54 | 14 | 56 | 133 | 48 | 495 |
| Total | 311 | 233 | 185 | 171 | 63 | 120 | 238 | 128 | 1449 |

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


## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table E.6: Summary of New PhDs Employed in the US
by Type of Employer and Citizenship

| US Employer |  | Cit izenship |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | US | Non-US |  |  |
| Academic |  | 510 | 374 | 884 |  |
|  | All Doctoral Mathematics* | 211 | 174 |  | 385 |
|  | Statistics \& Biostatistics | 29 | 39 |  | 68 |
|  | Masters, Bachelors, \& 2-Year | 173 | 68 |  | 241 |
|  | Other Academic \& Research Instititues | 97 | 93 |  | 190 |
|  | Government, Business \& Industry | 247 | 318 | 565 |  |
|  | Total | 757 | 692 | 1449 |  |

* Includes Doctoral Mathematics: Public Large, Public Medium, Public Small,

Private Large, Private Small, and Applied Math.

## Annual Survey of the Mathematical Sciences

## www.ams.org/annual-survey

Table E.7: Percentage of Employed New PhDs by Type of Employer

|  | Employed in US |  | Employed Outside the US |  |
| :---: | :---: | :---: | :---: | :---: |
|  | US Academic* | US Nonacademic | Non-US Academic | Non-US Nonacademic |

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

Figure E.8: New PhDs Employed in US Academic and US Business/Industry \& Government by Degree-Granting Department Group, 2012-2016

| Year | Math Public Large |  | Math Public Medium |  | Math Public Small |  | Math Private Large |  | Math Private Small |  | Applied Math |  | Statistics |  | Biostatistics |  | TOTAL |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government | Academic | Business/ Industry \& Government |
| Fall 2012 | 201 | 67 | 153 | 57 | 107 | 29 | 103 | 34 | 42 | 5 | 66 | 27 | 132 | 116 | 90 | 52 | 894 | 387 |
| Fall 2013 | 206 | 78 | 165 | 56 | 126 | 37 | 107 | 39 | 37 | 12 | 55 | 27 | 113 | 141 | 69 | 47 | 878 | 437 |
| Fall 2014 | 198 | 70 | 187 | 60 | 108 | 39 | 120 | 40 | 58 | 14 | 69 | 27 | 122 | 158 | 64 | 45 | 926 | 453 |
| Fall 2015 | 209 | 105 | 167 | 70 | 101 | 31 | 111 | 51 | 38 | 15 | 53 | 56 | 117 | 168 | 68 | 84 | 864 | 580 |
| Fall 2016 | 205 | 106 | 164 | 69 | 140 | 45 | 113 | 58 | 44 | 19 | 53 | 67 | 95 | 143 | 70 | 58 | 884 | 565 |

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table E.9: Academic Positions in the US Filled by New PhDs
by Type of Hiring Department, Fall 2012 to Fall 2016

| Year | Math Public | Math Private | Applied Math | Statistics | Biostatistics | $\begin{aligned} & \text { Master's } \\ & \text { and } \\ & \text { Bachelor's } \end{aligned}$ | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall 2012 | 208 | 110 | 20 | 51 | 39 | 218 | 248 | 894 |
| Fall 2013 | 247 | 97 | 16 | 45 | 35 | 208 | 230 | 878 |
| Fall 2014 | 237 | 108 | 17 | 48 | 24 | 227 | 265 | 926 |
| Fall 2015 | 233 | 88 | 28 | 47 | 36 | 210 | 222 | 864 |
| Fall 2016 | 252 | 111 | 22 | 36 | 32 | 217 | 214 | 884 |

Annual Survey of the Mathematical Sciences
www.ams.org/annual-survey

Table E.10: Number of New PhDs Taking US Academic Positions by Type of Degree-Granting Department, Fall 2012 to Fall 2016

| Year | Math Public Large | Math Public Medium | Math Public Small | Math Private Large | Math Private Small | Applied Math | Statistics | Biostatistics | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall 2012 | 201 | 153 | 107 | 103 | 42 | 66 | 132 | 90 | 894 |
| Fall 2013 | 206 | 165 | 126 | 107 | 37 | 55 | 113 | 69 | 878 |
| Fall 2014 | 198 | 187 | 108 | 120 | 58 | 69 | 122 | 64 | 926 |
| Fall 2015 | 209 | 167 | 101 | 111 | 38 | 53 | 117 | 68 | 864 |
| Fall 2016 | 205 | 164 | 140 | 113 | 44 | 53 | 95 | 70 | 884 |

## Annual Survey of the Mathematical Sciences

www.ams.org/annual-survey

Table E.11: Number of New PhDs Taking Positions in Business and Industry in the US by Type of Degree-Granting Department, Fall 2012 to Fall 2016

| Year | Math Public Large | Math Public Medium | Math Public Small | Math Private Large | Math Private Small | Applied Math | Statistics | Biostatistics | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall 2012 | 57 | 46 | 23 | 30 | 4 | 34 | 105 | 41 | 340 |
| Fall 2013 | 57 | 47 | 29 | 31 | 10 | 37 | 128 | 42 | 381 |
| Fall 2014 | 54 | 48 | 33 | 37 | 12 | 44 | 145 | 36 | 409 |
| Fall 2015 | 90 | 57 | 21 | 50 | 12 | 47 | 150 | 65 | 492 |
| Fall 2016 | 96 | 56 | 38 | 54 | 14 | 56 | 133 | 48 | 495 |

www.ams.org/ annual-survey

Figure E.12: Percentage of New Doctoral Recipients Unemployed 1992-2016



# 1995-2016 Starting Salaries of New Doctoral Recipients 

## 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 $\mathrm{Q}_{3}$ to the largest data value below $\mathrm{Q}_{3}+1.5 \mathrm{IQR}$, and lower whiskers from $\mathrm{Q}_{1}$ down to the smallest data value above $\mathrm{Q}_{1}-1.5$ IQR. Data points falling between $\mathrm{Q}_{3}+1.5 \mathrm{IQR}$ and $\mathrm{Q}_{3}+3 \mathrm{IQR}$ or $\mathrm{Q}_{1}-1.5 \mathrm{IQR}$ and $\mathrm{Q}_{3}-3 \mathrm{IQR}$ are designated as outliers and plotted as circles (o). Data outside the range $\mathrm{Q}_{1}-3 \mathrm{IQR}$ to $\mathrm{Q}_{3}+3 \mathrm{IQR}$ are designated as extreme outliers and plotted as stars (*).

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

| Ph.D. Year | Min | $\mathrm{Q}_{1}$ | Median | $\mathrm{Q}_{3}$ | Max | Reported Median in 2015 \$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1995 | 22.0 | 23.0 | 35.0 | 38.2 | 64.0 | 53.7 |
| 1998* | 14.0 | 34.0 | 37.0 | 41.0 | 70.0 | 54.2 |
| 2000 | 25.0 | 38.0 | 41.5 | 45.0 | 65.0 | 58.6 |
| 2005 | 28.0 | 43.0 | 46.5 | 50.6 | 100.2 | 58.4 |
| 2008 | 31.0 | 46.0 | 51.0 | 56.9 | 85.0 | 59.4 |
| 2009 | 32.0 | 46.9 | 51.5 | 58.0 | 100.0 | 59.5 |
| 2010 | 29.0 | 45.0 | 51.5 | 58.0 | 157.0 | 58.7 |
| 2011 | 28.8 | 45.0 | 50.0 | 57.0 | 197.0 | 55.8 |
| 2012 | 21.0 | 47.0 | 51.5 | 58.0 | 105.0 | 56.5 |
| 2013 | 20.0 | 48.0 | 53.2 | 60.0 | 156.2 | 57.4 |
| 2014 | 25.0 | 48.0 | 54.0 | 60.0 | 160.0 | 57.3 |
| 2015 | 24.0 | 50.0 | 55.0 | 62.0 | 110.0 | 57.7 |
| 2016 | 30.0 | 50.0 | 55.0 | 62.1 | 99.0 | 55.0 |
| 2012 M | 28.0 | 48.0 | 52.0 | 58.1 | 105.0 |  |
| 2012 F | 21.0 | 47.0 | 51.0 | 56.0 | 78.0 |  |
| 2013 M | 20.0 | 47.9 | 53.0 | 60.0 | 156.2 |  |
| 2013 F | 30.0 | 50.0 | 54.9 | 61.9 | 105.0 |  |
| 2014 M | 36.0 | 48.0 | 53.0 | 60.0 | 160.0 |  |
| 2014 F | 25.0 | 50.0 | 54.8 | 60.0 | 85.0 |  |
| 2015 M | 24.0 | 50.0 | 54.0 | 60.0 | 101.0 |  |
| 2015 F | 32.0 | 50.0 | 57.0 | 65.5 | 110.0 |  |
| 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 f | to rep |  |  |  |  |
| 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 |  |  |  |  |  |



Postdoctoral salaries are included from 1998 forward.

## Academic Postdoctorates Only <br> 9-10-Month Starting Salaries (in thousands of dollars)

| Ph.D. <br> Year | Min | $\mathrm{Q}_{1}$ | Median | $\mathrm{Q}_{3}$ | Max | Reported <br> Median in |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 2000 | 30.0 | 38.5 | 42.0 | 45.0 | 55.0 | 59.3 |
| 2005 | 31.0 | 45.0 | 46.0 | 50.0 | 61.5 | 57.8 |
| 2006 | 20.0 | 44.1 | 48.0 | 50.0 | 67.0 | 58.5 |
| 2007 | 25.0 | 45.0 | 48.3 | 55.0 | 65.0 | 57.3 |
| 2008 | 31.0 | 45.0 | 50.0 | 55.0 | 68.0 | 58.2 |
| 2009 | 36.0 | 47.9 | 51.5 | 57.1 | 68.0 | 59.5 |
| 2010 | 29.0 | 48.0 | 51.0 | 56.5 | 72.0 | 58.1 |
| 2011 | 30.0 | 48.0 | 52.0 | 59.0 | 142.0 | 58.1 |
| 2012 | 27.0 | 49.9 | 52.3 | 58.0 | 76.4 | 57.3 |
| 2013 | 30.0 | 48.0 | 53.0 | 60.0 | 76.0 | 57.2 |
| 2014 | 30.0 | 48.9 | 53.8 | 60.0 | 85.0 | 57.0 |
| 2015 | 33.6 | 51.3 | 57.0 | 63.4 | 84.0 | 59.8 |
| 2016 | 30.0 | 50.0 | 55.0 | 62.0 | 81.0 | 55.0 |
| 2012 M | 49.5 | 50.0 | 55.1 | 60.0 | 76.4 |  |
| 2012 F | 27.0 | 43.0 | 47.0 | 53.0 | 67.0 |  |
| 2013 M | 30.0 | 48.0 | 53.0 | 60.0 | 76.0 |  |
| 2013 F | 30.0 | 49.3 | 52.0 | 59.3 | 70.0 |  |
| 2014 M | 40.0 | 50.0 | 55.0 | 60.0 | 76.0 |  |
| 2014 F | 30.0 | 46.0 | 51.5 | 55.0 | 85.0 |  |
| 2015 M | 33.6 | 50.0 | 57.0 | 60.3 | 84.0 |  |
| 2015 F | 40.0 | 54.0 | 61.0 | 69.6 | 80.0 |  |
| 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 |  |  |  |  |  |



[^3]
## ANNUALSURVEY

## Academic Teaching/Teaching and Research 11-12-Month Starting Salaries* (in thousands of dollars)

| Ph.D. Year | Min | Q | Median | $\mathrm{Q}_{3}$ | Max | $\begin{aligned} & \text { Reported } \\ & \text { Median in } \\ & 2016 \$ \$ \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1995 | 30.0 | 35.4 | 41.0 | 47.8 | 60.0 | 62.9 |
| 1998* | 27.5 | 40.5 | 48.0 | 57.5 | 70.0 | 70.3 |
| 2000 | 30.0 | 40.0 | 48.5 | 60.0 | 117.0 | 68.4 |
| 2005 | 27.0 | 45.0 | 50.0 | 61.5 | 90.2 | 62.8 |
| 2008 | 40.0 | 50.0 | 56.0 | 75.3 | 140.0 | 65.2 |
| 2009 | 35.0 | 49.9 | 60.0 | 68.0 | 177.2 | 69.3 |
| 2010 | 38.0 | 50.0 | 57.0 | 80.0 | 120.0 | 65.0 |
| 2011 | 35.0 | 51.4 | 55.0 | 65.5 | 183.0 | 61.4 |
| 2012 | 30.0 | 50.0 | 60.0 | 65.0 | 120.0 | 65.8 |
| 2013 | 25.0 | 51.3 | 60.0 | 67.5 | 105.0 | 64.7 |
| 2014 | 39.0 | 48.0 | 54.0 | 65.0 | 87.0 | 57.3 |
| 2015 | 42.0 | 53.3 | 58.0 | 66.3 | 150.0 | 60.8 |
| 2016 | 43.7 | 53.8 | 58.1 | 77.0 | 150.0 | 58.1 |
| 2012 M | 30.0 | 50.0 | 60.0 | 68.0 | 120.0 |  |
| 2012 F | 39.0 | 50.8 | 60.0 | 62.0 | 82.0 |  |
| 2013 M | 25.0 | 54.5 | 60.0 | 68.0 | 105.0 |  |
| 2013 F | 39.2 | 50.3 | 55.0 | 65.8 | 105.0 |  |
| 2014 M | 30.0 | 52.0 | 60.0 | 65.5 | 166.0 |  |
| 2014 F | 50.0 | 55.0 | 65.0 | 80.0 | 100.0 |  |
| 2015 M | 42.0 | 52.3 | 56.5 | 64.3 | 150.0 |  |
| 2015 F | 42.1 | 55.0 | 60.0 | 80.0 | 106.7 |  |
| Total ( 25 male/15 female/1 neither) |  |  |  |  |  |  |
| 2016 M | 48.0 | 55.0 | 60.0 | 80.7 | 150.0 |  |
| 2016 F2016 N | 43.7 | 47.5 | 55.0 | 71.5 | 140.0 |  |
|  | too few to report |  |  |  |  |  |
| One year or less experience ( 25 male/14 female/1 neither) |  |  |  |  |  |  |
| 2016 M | 48.0 | 55.0 | 58.7 | 73.5 | 106.0 |  |
| 2016 F | 43.7 | 50.0 | 55.0 | 73.3 | 140.0 |  |
| 2016 N | too fe | o repo |  |  |  |  |

Academic Research Only 11-12-Month Starting Salaries (in thousands of dollars)

| Ph.D. <br> Year | Min | $\mathrm{Q}_{1}$ | Median | $\mathrm{Q}_{3}$ | Max | Reported <br> Median in <br> $2016 \$$ |
| :---: | :---: | :---: | :---: | :---: | ---: | :---: |
| 2000 | 30.0 | 36.5 | 40.0 | 52.9 | 100.0 | 56.4 |
| 2005 | 35.0 | 40.0 | 47.5 | 57.0 | 86.0 | 59.7 |
| 2006 | 30.0 | 45.0 | 50.0 | 60.0 | 84.0 | 60.9 |
| 2007 | 34.0 | 41.5 | 48.0 | 54.0 | 100.3 | 57.0 |
| 2008 | 30.5 | 45.0 | 50.0 | 57.7 | 100.0 | 58.2 |
| 2009 | 25.0 | 41.0 | 50.0 | 60.0 | 110.0 | 57.8 |
| 2010 | 30.0 | 44.0 | 51.5 | 61.5 | 105.5 | 58.7 |
| 2011 | 35.0 | 45.0 | 55.0 | 60.0 | 110.0 | 61.4 |
| 2012 | 28.0 | 46.0 | 55.0 | 60.6 | 112.2 | 60.3 |
| 2013 | 35.0 | 45.0 | 54.0 | 61.0 | 96.0 | 58.3 |
| 2014 | 39.0 | 48.0 | 55.0 | 65.0 | 103.0 | 58.3 |
| 2015 | 30.0 | 48.5 | 58.5 | 65.0 | 105.0 | 61.4 |
| 2016 | 42.0 | 50.0 | 60.0 | 63.7 | 94.0 | 60.0 |
| 2012 M | 30.0 | 46.5 | 54.5 | 60.0 | 87.0 |  |
| 2012 F | 28.0 | 46.5 | 55.0 | 80.0 | 112.2 |  |
| 2013 M | 35.0 | 45.0 | 52.8 | 60.3 | 95.0 |  |
| 2013 F | 41.0 | 45.0 | 55.0 | 65.0 | 96.0 |  |
| 2014 M | 39.0 | 48.0 | 54.0 | 65.0 | 103.0 |  |
| 2014 F | 42.0 | 48.0 | 55.0 | 61.6 | 87.0 |  |
| 2015 M | 30.0 | 49.0 | 60.0 | 68.0 | 100.0 |  |
| 2015 F | 43.0 | 49.0 | 55.0 | 62.5 | 105.0 |  |
| T014 42 |  |  |  |  |  |  |

Total (42 male/ 14 female/0 neither)

| 2016 M | 43.0 | 52.6 | 60.0 | 63.2 | 92.5 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 2016 F | 42.0 | 45.3 | 51.3 | 79.8 | 94.0 |

2016 N none to report
One year or less experience ( 40 male/13 female/0 neither)

| 2016 M | 43.0 | 51.9 | 60.0 | 61.8 | 92.5 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 2016 F | 42.0 | 46.0 | 51.3 | 63.3 | 78.0 |
| 2016 N | none to report |  |  |  |  |



[^4]Government 11-12 Month Starting Salaries (in thousands of dollars)


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

| $\begin{aligned} & \text { Ph.D. } \\ & \text { Year } \\ & \hline \end{aligned}$ | Min | $\mathrm{Q}_{1}$ | Median | $\mathrm{Q}_{3}$ | Max | Reported Median in 2016 \$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1995 | 28.8 | 48.0 | 56.8 | 69.0 | 125.0 | 87.1 |
| 2000 | 20.0 | 64.0 | 72.0 | 80.0 | 150.0 | 101.6 |
| 2005 | 51.0 | 75.5 | 87.0 | 97.8 | 200.0 | 109.3 |
| 2006 | 34.0 | 80.0 | 90.0 | 100.0 | 155.0 | 109.7 |
| 2007 | 40.0 | 78.0 | 90.0 | 100.0 | 250.0 | 106.8 |
| 2008 | 51.8 | 78.0 | 90.0 | 100.0 | 170.0 | 104.8 |
| 2009 | 42.0 | 74.6 | 90.0 | 100.0 | 235.0 | 104.0 |
| 2010 | 28.0 | 75.0 | 90.0 | 100.0 | 155.0 | 102.6 |
| 2011 | 50.0 | 85.0 | 94.3 | 102.3 | 190.0 | 105.3 |
| 2012 | 52.5 | 76.5 | 95.0 | 120.0 | 200.0 | 104.2 |
| 2013 | 30.0 | 85.0 | 100.0 | 110.0 | 280.0 | 107.9 |
| 2014 | 50.0 | 83.0 | 100.0 | 115.0 | 300.0 | 106.0 |
| 2015 | 60.0 | 92.5 | 110.0 | 125.0 | 170.0 | 115.4 |
| 2016 | 36.0 | 88.3 | 110.0 | 125.0 | 175.0 | 110.0 |
| 2012 M | 58.5 | 85.0 | 100.0 | 120.0 | 145.0 |  |
| 2012 F | 52.5 | 68.5 | 81.3 | 94.8 | 105.0 |  |
| 2013 M | 35.0 | 45.0 | 52.8 | 60.3 | 95.0 |  |
| 2013 F | 41.0 | 45.0 | 55.0 | 65.0 | 96.0 |  |
| 2014 M | 56.0 | 86.2 | 100.0 | 120.0 | 300.0 |  |
| 2014 F | 50.0 | 80.0 | 91.0 | 101.0 | 140.0 |  |
| 2015 M | 60.0 | 94.8 | 111.0 | 125.0 | 160.0 |  |
| 2015 F | 60.0 | 87.5 | 106.0 | 120.0 | 170.0 |  |

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 | 70.0 | 91.5 | 105.4 | 125.0 | 143.0 |
| :--- | :--- | :--- | :--- | :--- | :--- |

2016 N none to report



[^0]:    *Includes all Math Public, Math Private, and Applied Math departments.

[^1]:    $\dagger$ Includes postdoctoral salaries.

[^2]:    † A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience.

[^3]:    A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience.

[^4]:    Postdoctoral salaries are included from 1998 forward.

