

Preliminary Report on the 2010-2011 New Doctoral Recipients

Richard Cleary, James W. Maxwell, and Colleen Rose

This report presents a statistical profile of recipients of doctoral degrees awarded by departments in the mathematical sciences at universities in the United States during the period July 1, 2010, through June 30, 2011. All information in the report was provided over the summer and early fall of 2011 by the departments that awarded the degrees. The report includes a preliminary analysis of the fall 2011 employment plans of 2010-2011 doctoral recipients and a demographic profile summarizing characteristics of citizenship status, sex, and racial/ethnic group. This preliminary report will be updated by the Report on the 2010-2011 New Doctorates to reflect subsequent reports of additional 2010-2011 doctoral recipients from the departments that did not respond in time for this report, along with additional information provided by the doctoral recipients themselves. A list of the nonresponding departments is on page 530.

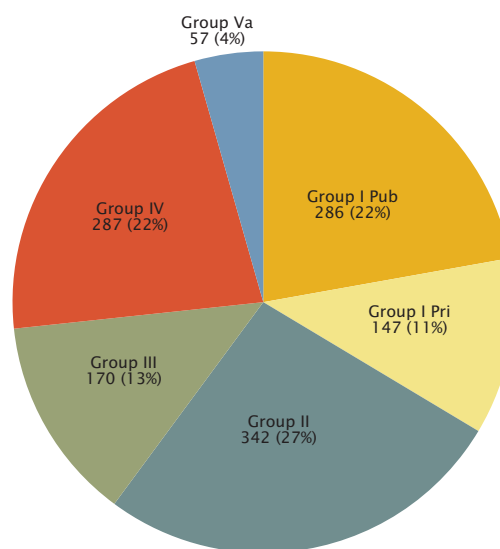
Detailed information, including tables which traditionally appeared in this report, is available on the AMS website at www.ams.org/annual-survey/.

Doctoral Degrees Awarded

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

The preliminary count for new Ph.D.s awarded is 1,289. This is down 186 from last year's preliminary count of 1,475. However, based on the data collected it appears the number of Ph.D.s being awarded is still increasing. The 206 departments that have responded so far this year report awarding 1,289 doctoral degrees. Last year the same set of departments reported awarding 1,225, a 5.2% increase. This strongly suggests that when the reports from the 96 departments that have yet to respond are included, the final count of 2010-2011 newdocs will exceed the record setting figure of 1,632 reported last year. (See page 299 for a list of departments still to respond.)

26% (336) of the new Ph.D.s had a dissertation in statistics/biostatistics, followed by algebra/number theory and applied mathematics with 16% (211) and 15% (198), respectively.

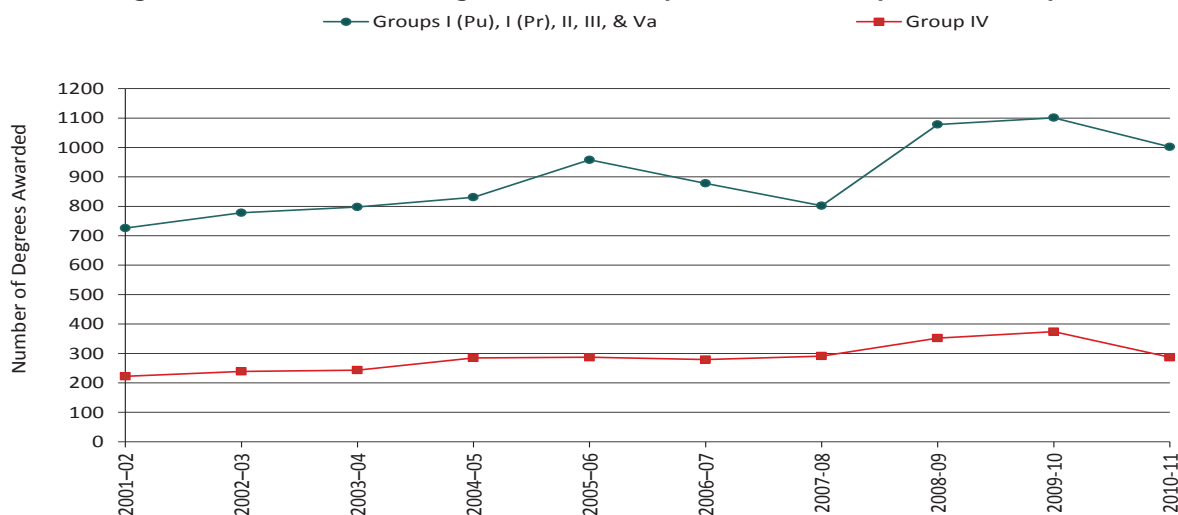


Total Degrees Awarded: 1,289

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Doctoral Degrees Awarded

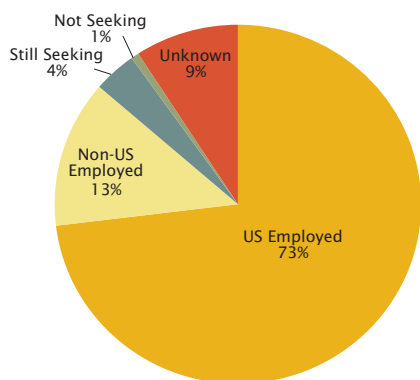
Figure A.2: New Doctoral Degrees Awarded by Combined Groups, Preliminary Counts



Employment of New Doctoral Recipients

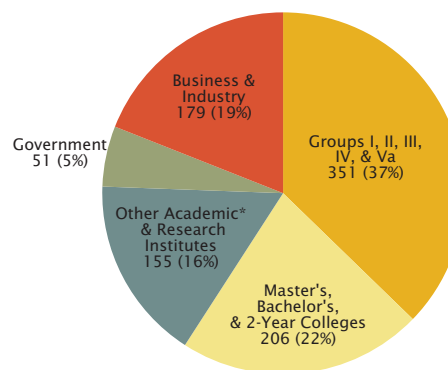
The overall preliminary unemployment rate is 4.9%, down from 9.9% last year. The employment plans are known for 1,172 of the 1,289 new doctoral recipients. The number of new doctoral recipients employed in the U.S. is 942, down 66 from last year's preliminary number. Employment in the U.S. decreased in all categories except "Master's, Bachelor's, & 2-Year Colleges" and "Business and Industry" which increased 3% and 2%, respectively. The number of new Ph.D.s taking positions in government has dropped to 51 this year. Academic hiring of new doctoral recipients decreased to 712, compared to 768 last year.

Figure E.1: Employment Status



- 9% of new Ph.D.s are working at the institution which granted their degree, the same as last year.
- 54% (511) of those employed in the U.S. are U.S. citizens, up from 53% last year.
- 75% (432) of non-U.S. citizens known to have employment are employed in the U.S.; the remaining 99 non-U.S. citizens are either employed outside of the U.S. or unemployed.
- 13% of new Ph.D.s are employed outside of the U.S. compared to 11% last year.

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



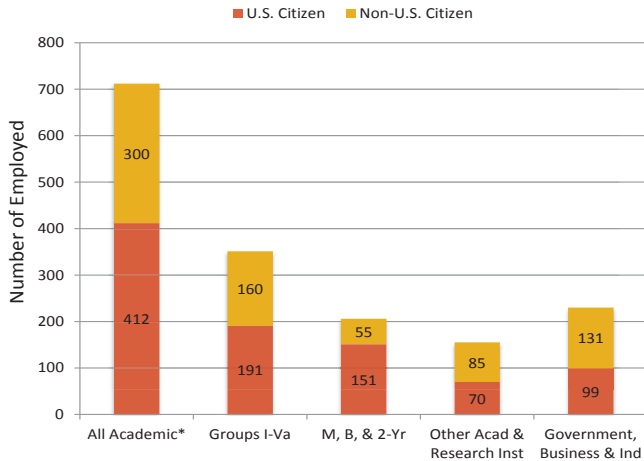
Total U.S. Employed: 942

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

- Positions in Business & Industry increased slightly for new recipients from Groups I-II, and decreased slightly for new recipients from Groups III-Va.

Employment of New Doctoral Recipients

Figure E.3: Employment in the U.S. by Type of Employer and Citizenship

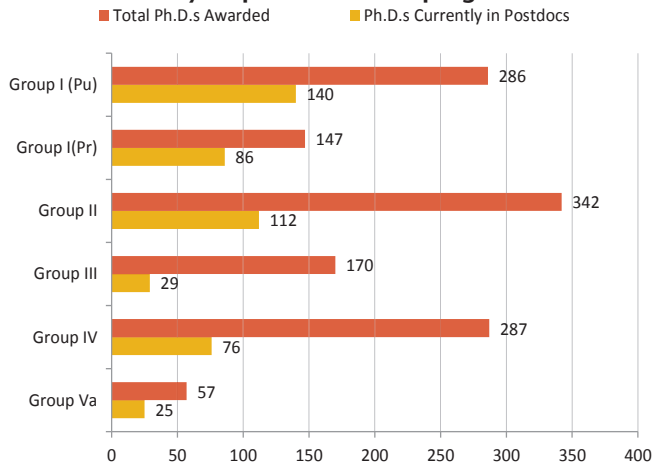


*Includes Groups I-Va, M, B, 2-Yr, other academic and research institutes/nonprofit.

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

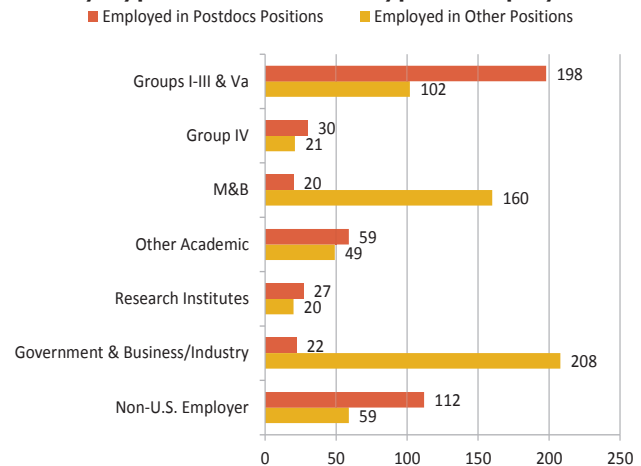
- 86% (521) are employed in the U.S., of these:
 - 38% are employed in Ph.D.-granting departments
 - 44% are employed in all other academic positions
 - 19% are employed in government, business and industry positions

Figure E.4: New Ph.D.s Hired into Postdocs by Department Groupings



- 36% (468) of the new Ph.D.s are reported to be in postdoc positions.
- 24% of the new Ph.D.s in postdoc positions are employed outside the U.S.
- 47% of the new Ph.D.s having U.S. academic employment are in postdocs; the same as last year.
- 65% of the new Ph.D.s employed in Groups I-Va are in postdoc positions, 32% of these postdocs received their Ph.D.s from Group I (Pu) institutions.
- 59% of the new Ph.D.s in Group I (Pr) are employed in postdocs, while only 17% of new Ph.D.s awarded by Group III are in postdocs; last year figures were 55% and 13%, respectively.

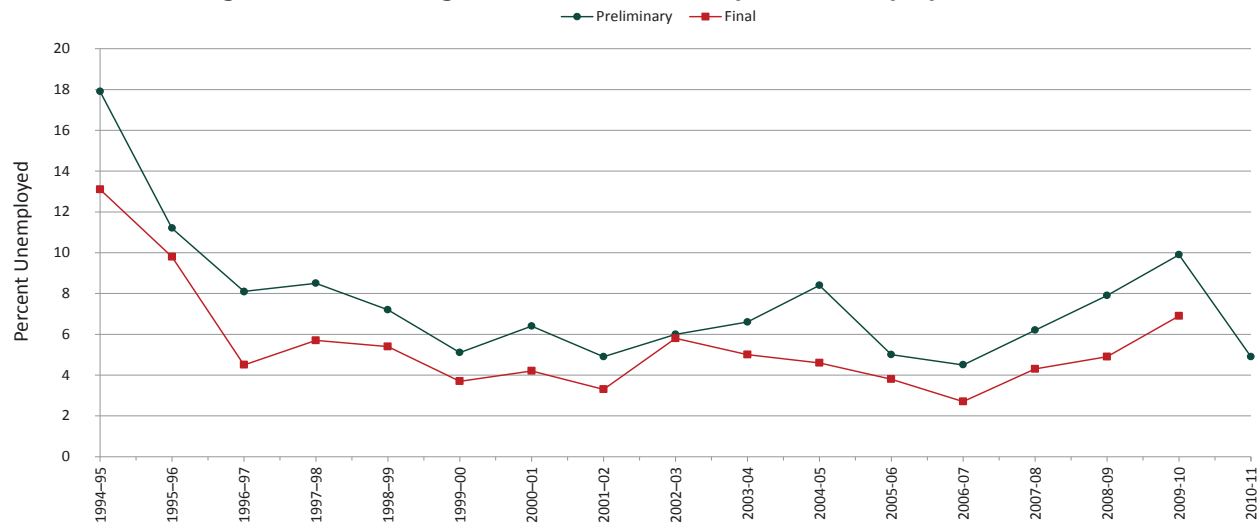
Figure E.5: New Ph.D. Employment by Type of Position and Type of Employer



- Unemployment among those whose employment status is known is 4.9%, down from 9.9% for fall 2010.
- Group I (Pu) reported highest unemployment at 8.5%.
- Group I (Pr) reported the lowest unemployment at 2.8%.
- 6.4% of U.S. citizens are unemployed, compared to 10.3% in fall 2010.
- 3.1% of non-U.S. citizens are unemployed; the rates by visa status are 3.6% for those with a temporary visa and no non-U.S. citizens with a permanent visa were reported as unemployed.

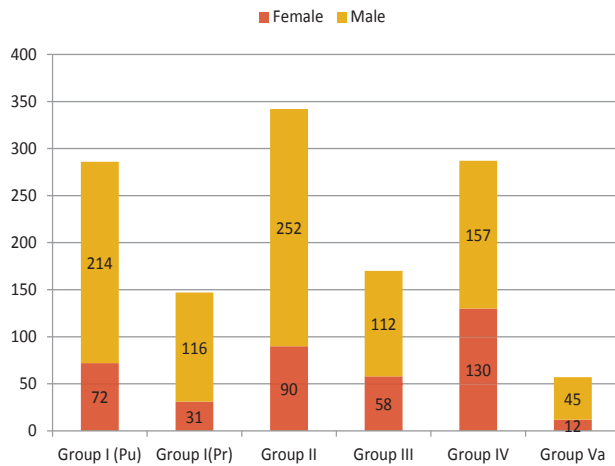
Employment of New Doctoral Recipients

Figure E.6: Percentage of New Doctoral Recipients Unemployed 1994-2011



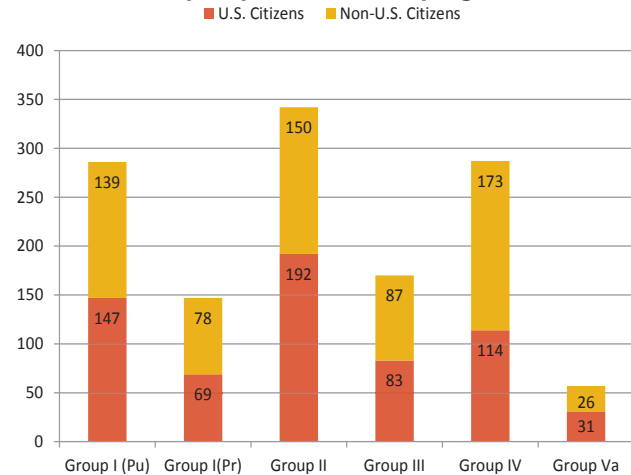
Demographics of New Doctoral Recipients

Figure D.1: Gender of Doctoral Recipients by Department Groupings



• Females account for 30% (393) of the 1,289 Ph.D.s; last year's figure was 32%.

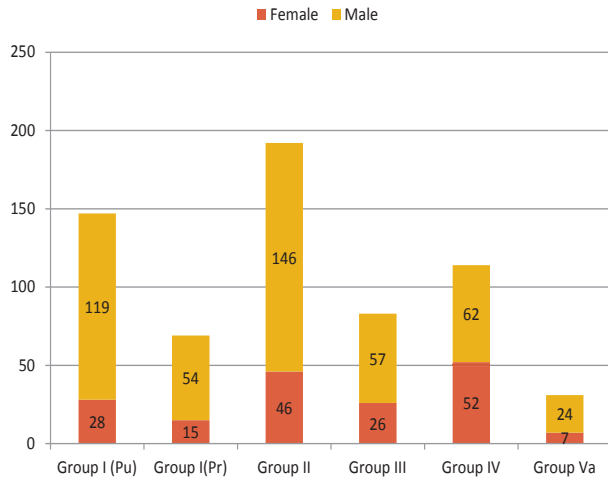
Figure D.2: Citizenship of Doctoral Recipients by Department Groupings



• 49% (636) of Ph.D.s are U.S. citizens; last year's figure was also 49%.

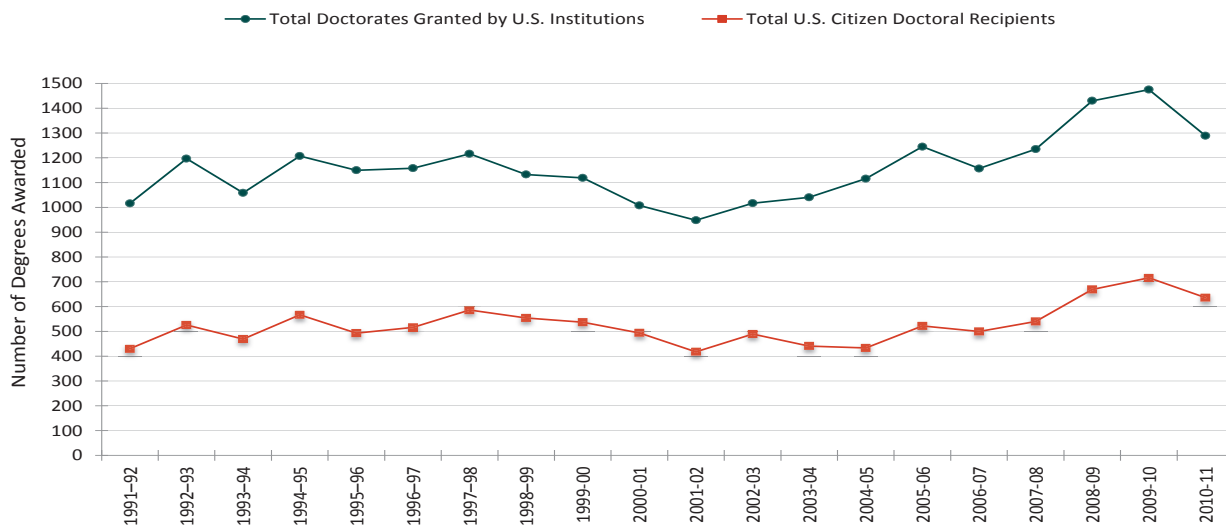
Demographics of New Doctoral Recipients

Figure D.3: Gender of U.S. Citizen Doctoral Recipients by Department Groupings



- 27% (174) of the U.S. citizens are female; last year's figure was 30%.
- Among the U.S. citizens: 4 are American Indian or Alaska Native, 32 are Asian, 21 are Black or African American, 11 are Hispanic or Latino, 3 are Native Hawaiian or Other Pacific Islander, 552 are White, and 12 are of unknown race/ethnicity.

Figure D.4: U.S. Citizen Doctoral Recipients Preliminary Counts



Female New Doctoral Recipients

For the first time in three years, the proportion of female new doctoral recipients has dropped slightly to 30% (393), based on preliminary counts. For 2008 - 2010 this proportion was 32% and the number of females receiving Ph.D.s increased from 388 in 2008 to 472 in 2010. The unemployment rate for females is 4%, compared to 5.4% for males and 4.9% overall.

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

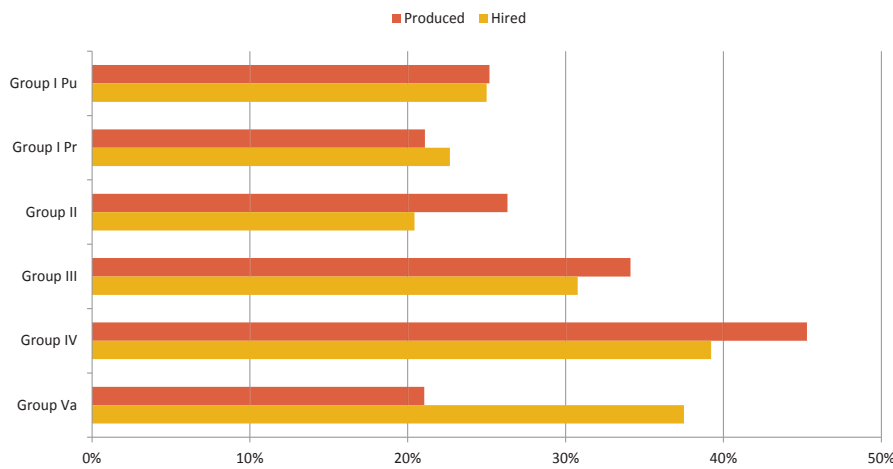
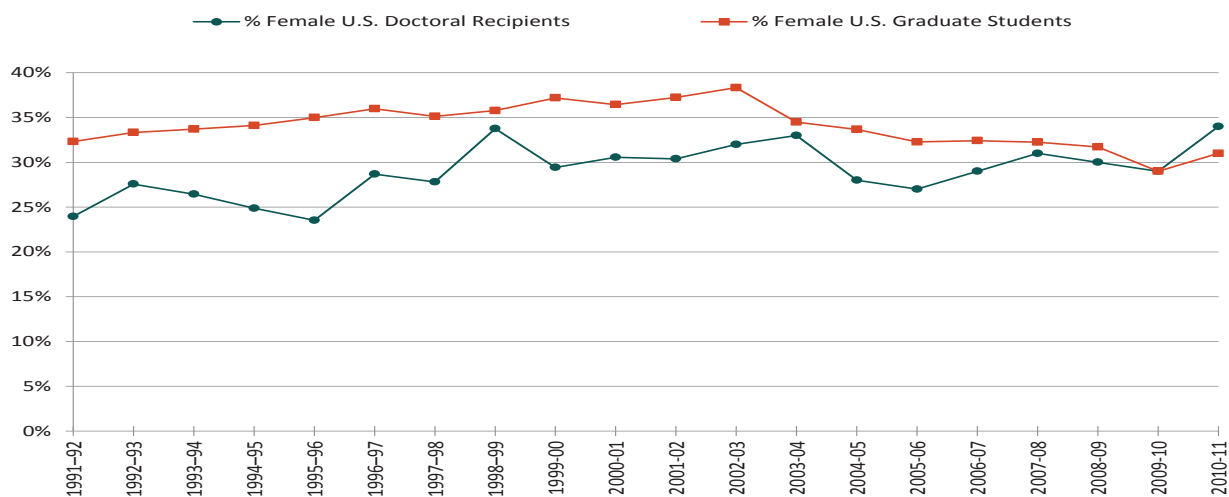


Table F.1: Number of Female New Doctoral Recipients Produced by and Hired by Department Groupings

	Females Produced	Females Hired
Group I Pu	72	18
Group I Pr	31	17
Group II	90	19
Group III	58	16
Group IV	130	20
Group Va	12	3

- 36% of those hired by Group B were women (down from 44% last year) and 36% of those hired by Group M were women (down from 43% last year).
- 26% of those reporting having postdoc positions (468) are women.
- 60% of the women employed in Groups I-Va are in postdoc positions.

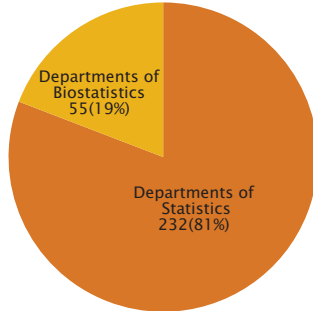
Figure F.2: Females as a Percentage of U.S. Citizen Doctoral Recipients



Ph.D.s Awarded in Group IV (Statistics/Biostatistics)

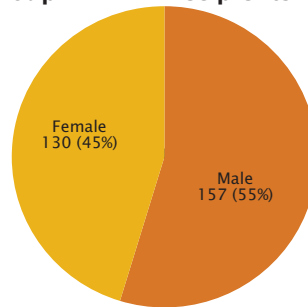
This section contains information about new doctoral recipients in Group IV. Group IV produced 287 new doctorates, of which all but 4 had dissertations in statistics/biostatistics. This is a 6% decrease over the number reported for fall 2010 of 374. In addition, Groups I-III and Va combined had 53 Ph.D. recipients with dissertations in statistics. In Group IV, 114 (40%) of the new doctoral recipients are U.S. citizens (while in the other groups 52% are U.S. citizens). While the unemployment rate for new Ph.D.s with dissertations in statistics or probability has decreased to 3.4%, the unemployment among the Group IV new Ph.D.s is 2.9%.

Figure S.1: Ph.D.s Awarded in Group IV



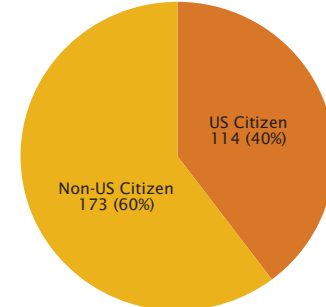
- 22% of all Ph.D.s awarded were in Group IV.
- Females account for 43% of statistics and 56% of biostatistics Ph.D.s awarded.

Figure S.2: Gender of Group IV Ph.D. Recipients



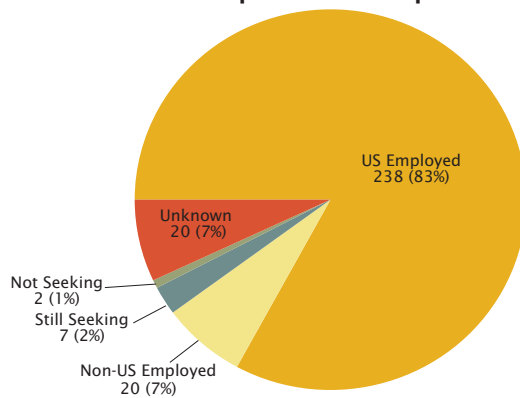
- Females accounted for 45% of the 287 Ph.D.s in statistics/biostatistics, compared to all other groups combined, where 26% (263) are female.

Figure S.3: Citizenship of Group IV Ph.D. Recipients



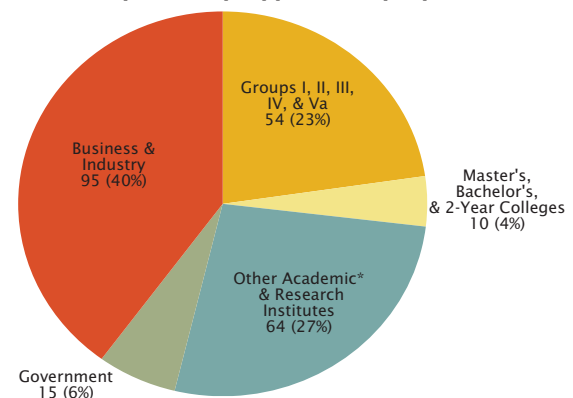
- 46% of of Group IV U.S. citizens are females, while in all other groups 23% are females.

Figure S.4: Employment Status of Group IV Ph.D. Recipients



- 2.9% of Group IV Ph.D.s are unemployed compared to 5.6% among all other groups. This is down from 4.2% last year.
- Unemployment among new Ph.D.s with dissertations in statistics/probability is 3.1%, down from 6%. Among all other dissertation groupings 4.6% are unemployed.

Figure S.5: U.S. Employed Group IV Ph.D. Recipients by Type of Employer



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

- 33% of Group IV Ph.D.s are employed in Business/Industry, compared to 12% in all other groups.
- 39% of those hired by Group IV were females, compared to 24% in all other groups.

Other Information

Survey Response Rates

Doctorates Granted Departmental Response Rates

Group I (Pu)	22 of 25 including 0 with no degrees
Group I (Pr)	14 of 23 including 0 with no degrees
Group II	49 of 56 including 1 with no degrees
Group III	57 of 82 including 9 with no degrees
Group IV	74 of 93 including 3 with no degrees
Statistics	33 of 58 including 2 with no degrees
Biostatistics	17 of 35 including 1 with no degrees
Group Va	16 of 24 including 1 with no degrees

Previous Annual Survey Reports

The 2009 First, Second, and Third Annual Survey Reports were published in the *Notices of the AMS* in the February, August, and November 2009 issues, respectively. These reports and earlier reports, as well as a wealth of other information from these surveys, are available on the AMS website at www.ams.org/annual-survey/survey-reports.

Acknowledgements

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.

Other Sources of Data

Visit the AMS website at www.ams.org/annual-survey/other-sources for a listing of additional sources of data on the mathematical sciences.

Group Descriptions

Group I is composed of 48 departments with scores in the 3.00–5.00 range. Group I Public and Group I Private are Group I departments at public institutions and private institutions, respectively.

Group II is composed of 56 departments with scores in the 2.00–2.99 range.

Group III contains the remaining U.S. departments reporting a doctoral program, including a number of departments not included in the 1995 ranking of program faculty.

Group IV contains U.S. departments (or programs) of statistics, biostatistics, and biometrics reporting a doctoral program.

Group Va is applied mathematics/applied science.

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.

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

About the Annual Survey

The Annual Survey series, begun in 1957 by the American Mathematical Society, is currently under the direction of the Data Committee, a joint committee of the American Mathematical Society, the American Statistical Association, the Mathematical Association of America, and the Society of Industrial and Applied Mathematics. The current members of this committee are Pam Arroyo, Richard Cleary (chair), Steven R. Dunbar, Susan Geller, Abbe H. Herzig, Ellen Kirkman, Joanna Mitro, James W. Maxwell (ex officio), Bart S. Ng, Douglas Ravel, and Marie Vitulli. The committee is assisted by AMS survey analyst Colleen A. Rose. In addition, the Annual Survey is sponsored by the Institute of Mathematical Statistics. Comments or suggestions regarding this Survey Report may be directed to the committee.

Doctoral Degrees Not Yet Reported

The following mathematical sciences, statistics, biostatistics, and applied mathematics departments have not yet responded with their doctoral degrees awarded. Every effort will be made to collect this information for inclusion in the New Doctoral Recipients Report which will be published in the August 2012 issue of *Notices of the AMS*.

Departments yet to respond can obtain copies of the Doctorates Granted survey forms on the AMS website at www.ams.org/annual-survey/surveyforms, by sending email to ams-survey@ams.org, or by calling 1-800-321-4267, ext. 4189.

Group I (Public)

Graduate Center, City University of New York
University of California, Los Angeles
University of Minnesota-Twin Cities

Group I (Private)

Brandeis University
California Institute of Technology
Johns Hopkins University, Baltimore
New York University, Courant Institute
Princeton University
Rensselaer Polytechnic Institute
Stanford University
University of Notre Dame
Yale University

Group II

Clemson University
Dartmouth College
Polytechnic Institute of New York University
Texas Tech University
University of California, Riverside
University of Miami

Group III

Bryn Mawr College
College of William & Mary
Colorado School of Mines
Delaware State University
Drexel University
George Mason University
Indiana University-Purdue University Indianapolis
Marquette University
Michigan Technical University
Missouri University of Science and Technology
Northern Illinois University
Oakland University
Oklahoma State University
Texas Christian University
University of Arkansas at Fayetteville
University of Central Florida
University of Delaware
University of Kansas
University of Missouri-Kansas City
University of Missouri-St. Louis
University of Nevada
University of New Mexico
University of North Carolina at Greensboro
University of Toledo
University of Vermont
Utah State University

Group IV (Statistics)

Baylor University
Carnegie Mellon University
Colorado State University
Cornell University
George Washington University
Harvard University
Kansas State University
Michigan State University
New York University, Stern School of Business
North Dakota State University, Fargo
Northwestern University
Rutgers University-New Brunswick
University of Alabama-Tuscaloosa
University of California, Berkeley
University of California, Los Angeles
University of California, Riverside
University of California, Santa Barbara
University of Florida
University of Iowa
University of Kentucky
University of Michigan
University of Missouri-Columbia
University of North Carolina at Chapel Hill
Western Michigan University
Yale University

Group IV (Biostatistics)

Boston University School of Public Health
Case Western Reserve University
Columbia University
Cornell University
Louisiana State University, Health Science Center
Medical College of Wisconsin
The University of Albany, SUNY
Medical University of South Carolina
Tulane University
University of California, Los Angeles
University of Cincinnati, Medical College
University of Colorado, Denver
University of Massachusetts, Amherst
University of Michigan
University of North Carolina at Chapel Hill
University of Pittsburgh
University of South Carolina
Virginia Commonwealth University

Group Va (Applied Mathematics)

Arizona State University
Illinois Institute of Technology
Louisiana Technology University
Princeton University
State University of New York at Stony Brook
University of California-Merced
University of Louisville
University of Texas at Austin