

Physics Doctorates Initial Employment

Data from the degree recipient follow-up survey for the classes of 2011 and 2012

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REPORTS ON PHYSICS DOCTORATES

Physics Doctorates, One Year
Later (November 2014)

Physics Doctorates, Initial
Employment (December 2014)

New physics PhDs typically enter into one of three main employment types. For the classes of 2011 and 2012, the majority of PhD recipients accepted a postdoctoral appointment. Taking a postdoc has been the dominant post-degree outcome for physics PhDs since the class of 2001. About a third of physics PhDs accepted a potentially permanent position, while a smaller but significant proportion accepted “other temporary positions”.

Not all PhDs remained in the US after receiving their degrees. Among the new physics PhDs for whom we had post degree information, 11% of US citizens and 25% of non-US citizens left the country and are not included in this analysis.

Almost two thirds of new physics PhDs accepted temporary positions as either a postdoctoral fellow or other temporary position.

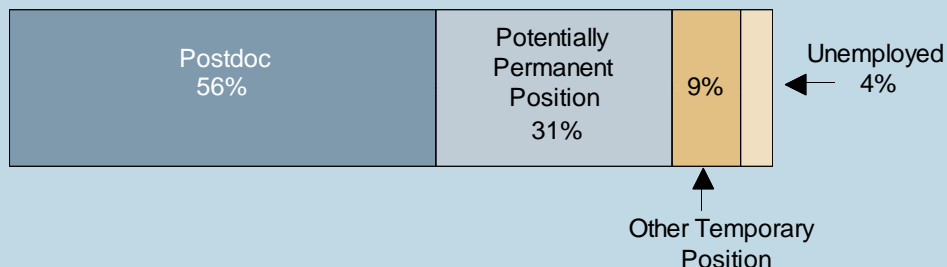
THE 2011 AND 2012 FOLLOW-UP SURVEYS OF PHYSICS DOCTORATES

Physics doctorate recipients were contacted in the winter following the academic year in which they receive their degree.

Figure 1

Employment Status of Physics PhDs One Year After Degree, Classes of 2011 & 2012 Combined

N=1,626



Note: Data only include US-educated physics PhDs who remained in the US after earning their degrees.

<http://www.aip.org/statistics>

Figure 2

Starting Salaries for Physics PhDs, Classes of 2011 & 2012 Combined

Potentially Permanent Positions

Government Lab
(N=17)

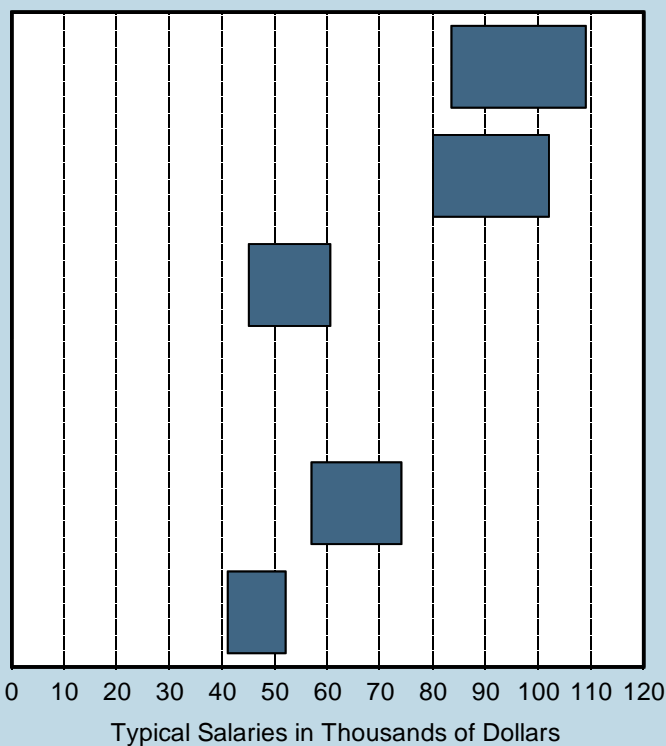
Private Sector
(N=127)

University &
4-year College
(N=42)

Postdocs

Government Lab
(N=86)

University
& UARI
(N=386)



Data only include US-educated PhDs who remained in the US after earning their degrees. The ranges of salaries represent the middle 50% i.e. between the 25th and 75th percentiles. Government Lab includes Federally Funded Research and Development Centers, e.g. Los Alamos National Laboratory. UARI is University Affiliated Research Institute. The data for PhDs holding potentially permanent positions in academia include salaries based on the 9-10 and 11-12 month commitments. "N" represents the number of individuals who were full-time employed and provided salary data.

<http://www.aip.org/statistics>

Postdocs at government labs had a higher starting salary than postdocs in academia.

The median starting salary for those employed in potentially permanent positions in the private sector was \$90,000.

The starting salaries of physics PhDs can range widely depending on their sector of employment and type of job. New PhDs working in potentially permanent positions at government labs had the highest starting median salaries at \$92,500. Physics PhDs employed in potentially permanently positions in academia had a typical starting salary range that was only modestly higher than those accepting postdocs in the same sector. Postdocs who were employed in government labs typically had significantly higher starting salaries (\$67,000) than their academic counterparts (\$45,000).

There is a strong relationship between the type of employment new PhDs accept and the sector in which they work. PhDs accepting postdocs were overwhelmingly employed in the academic sector, whereas the majority of PhDs accepting potentially permanent positions were employed in the private sector. A postdoctoral fellowship represents a period of continuing research and mentorship and the academic sector is well suited to provide such an environment. Potentially permanent positions are more diverse. Although two-thirds were concentrated in the private sector, some PhDs also took such positions in the academic and government sectors. The majority of PhDs accepting other temporary positions were employed as visiting professors or lecturers in two- or four-year institutions. The “other” sectors included nonprofit organizations and medical facilities.

Table 1

Employment Type of Physics PhDs by Employment Sector One Year After Degree, Classes of 2011 & 2012 Combined

Sector of Employment	Postdoc %	Potentially Permanent %	Other Temporary %	Overall %
Academic*	74	22	78	57
Private	1	64	14	23
Government	21	11	4	16
Other	4	3	4	4
	100%	100%	100%	100%
Number of resp.	859	485	140	1,484

Note: Data only include US-educated physics PhDs who remained in the US after earning their degrees.

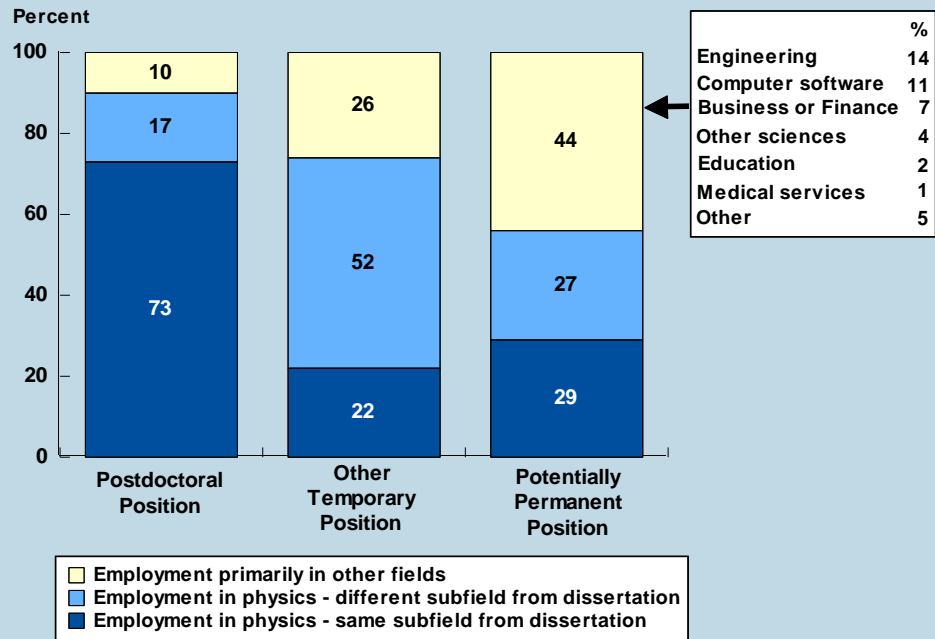
*Includes university affiliated research institutes.

<http://www.aip.org/statistics>

The majority of new PhDs in potentially permanent positions were employed in the private sector.

Figure 3

Employment Type of Physics PhDs One Year After Degree, Classes of 2011 & 2012 Combined



Nearly all physics PhDs are employed in a STEM field with physics being the dominant field.

Note: Employment in physics means an individual's primary or secondary employment field was in physics or astronomy. Data only include US-educated PhDs who remained in the US after earning their degrees.

<http://www.aip.org/statistics>

The type of initial employment accepted impacted whether or not physics PhDs were working in the subfield of their dissertation. Around three-quarters of those who took a postdoc continued to work in the subfield of the dissertation, while only 10% were working in a field outside of physics. PhDs in potentially permanent positions experienced the greatest diversity concerning the field in which they were working. Forty-four percent of the PhDs who accepted potentially permanent positions were working outside the field of physics, with the field of engineering comprising the largest portion of this group. Of those accepting "other temporary positions", about three quarters were employed in physics but many were employed in a field that differed from their dissertation. An overwhelming number of these were employed in academia, working as either visiting professors or lecturers teaching a variety of physics courses.

Survey Methodology

Each fall the Statistical Research Center conducts its Survey of Enrollments and Degrees, which asks all degree-granting physics and astronomy departments in the U.S. to provide information concerning the number of students they have enrolled and the counts of recent degree recipients. In connection with this survey, we ask for the names and contact information for their recent degree recipients. This degree recipient information is used to conduct our follow-up survey in the winter following the academic year in which they received their degrees. The data in this *focus on* comes from that follow-up survey.

Recent degree recipients can be very difficult to reach because they tend to move after receiving their degrees. Additionally, many departments do not provide or don't have accurate contact information for their alumni. To assist us in determining outcome information and to help obtain updated contact information, we contact the advisors of non-responding degree recipients when possible.

The follow-up surveys for the classes of 2011 and 2012 were administered in a web-based format. Non-responding doctorates were contacted up to four times with invitations to participate in the survey. The physics PhD classes of 2011 and 2012 consisted of 1,688 and 1,762 respectively. We received post-degree information on about 57% of these degree recipients. About 60% of these responses came from PhD recipients themselves, while the other 40% came from advisors. The information obtained from advisors is limited to subfield of dissertation, US citizenship, sex, employment status, sector of employment, and location (in or out of the US). PhDs who left the U.S. after receiving their degrees were not included in the analysis.

In this report, the notation "N" on figures represents the number of individuals for whom we had data on a particular item.

We thank the many physics and astronomy departments, degree recipients, and faculty advisors who made this publication possible.

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