DOCUMENT RESUME

ED 446 474 HE 033 228

AUTHOR Ivie, Rachel; Stowe, Katie
TITLE Academic Workforce Report, 1997-98. AIP Report.
INSTITUTION American Inst. of Physics, College Park, MD. Education and Employment Statistics Div.
REPORT NO AIP-R-392.3
PUB DATE 1999-05-00
NOTE 14p.
PUB TYPE Numerical/Quantitative Data (110) -- Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Faculty; Employment Patterns; *Employment Statistics; Faculty Recruitment; Higher Education; Labor Turnover; *Physics; Retirement; Statistical Data; Tables (Data); Universities; Women Faculty

ABSTRACT

This report issued by the American Institute of Physics presents data on various aspects of the physics academic workforce. For the school year 1997-98, the institute measured the number of physics faculty, number of women faculty, turnover rates, retirement rates, new hires, frozen positions, and faculty recruitment efforts. Data suggest that the academic workforce in physics has remained relatively steady. Overall, the data indicate stability in hiring and turnover and in the physics faculty population as a whole, although individual departments have experienced change. The number of FTE (full-time equivalent) faculty in physics departments that grant Ph.D.s and Bachelor's degrees was relatively constant; however, the number of master's degree-granting departments has decreased. Overall, physics departments employed slightly more physicists in 1998 than in 1996. Women faculty in physics departments increased in number; almost half of physics departments employed at least one female member in 1998. Turnover rate has remained steady, and the retirement rate increased slightly. The number of departments hiring new faculty increased. Eleven tables presenting statistical data on the physics workforce are included. (HB)

AMERICAN INSTITUTE OF PHYSICS

AIP REPORT

One Physics Ellipse
College Park, MD 20740-3843

EDUCATION AND EMPLOYMENT
STATISTICS DIVISION

Tel. (301) 209-3070

By Rachel Ivie
Katie Stowe

AIP Pub. Number R-392.3

May 1999

1997-98 ACADEMIC WORKFORCE REPORT

AMERICAN INSTITUTE OF PHYSICS

AIP REPORT

One Physics Ellipse
College Park, MD 20740-3843

EDUCATION AND EMPLOYMENT
STATISTICS DIVISION

Tel. (301) 209-3070

By Rachel Ivie
Katie Stowe

AIP Pub. Number R-392.3

May 1999

1997-98 ACADEMIC WORKFORCE REPORT

HIGHLIGHTS

- Degree-granting physics departments in the U.S. employed 8350 full-time equivalent physicists during the spring of 1998. This is a slight increase over the number of physicists employed by these types of departments in 1996.
- Women's representation in physics departments increased from 6% to 8%. In 1998, 48% of physics departments had at least one woman faculty member.
- The turnover rate of 3.6% for tenured and tenure-track faculty was virtually unchanged since 1994-95.
- The retirement rate during the two academic years 1996-97 and 1997-98 was 2.6% per year. Forty-three percent of the retirements were due to a retirement incentive program.
- The departments hired about 500 new faculty members for the 1997-98 academic year (including temporary and part-time faculty). Postdoc was the most common previous position for new faculty members at departments that grant graduate degrees.
- The departments recruited for about 375 tenured and tenure-track faculty positions for 1998-99. Twenty percent of these anticipated positions were due to department growth.

Member Societies: The American Physical Society • Optical Society of America • Acoustical Society of America • The Society of Rheology • American Association of Physics Teachers
nerican Crystallographic Association • American Astronomical Society • American Association of Physicists in Medicine • American Vacuum Society • American Geophysical Union

During the 1990s, the academic workforce in physics appears to have been relatively stable. The number of physics faculty increased slightly but steadily. The turnover rate for tenured and tenure-track physicists is about the same now as it was in the mid-1990s. However, this stability hides important changes that have happened to many individual departments. For example, some departments report that declining enrollment is threatening their degree-granting status, but other departments report that they are growing. Some departments have positions open that they are not allowed to fill, while other departments are becoming more selective in their hiring and are able to let positions remain vacant while searching for the perfect candidate. While the overall statistics show stability, many individual departments are going through significant changes.

A sizable percentage of Ph.D. physicists work in academia, and this sector is often used as an indicator of the health of the entire discipline. Thus, we have measured this workforce every two years since 1986. The Academic Workforce Survey counts physicists doing research or teaching in physics departments that grant physics degrees, but excludes postdocs and physicists working in other departments. In March 1998, we sent this survey to the chairs of the 757 physics departments that grant at least a bachelor's degree in physics. We received 647 responses to the survey, for a response rate of 85%. We are indebted to each of the departments that responded to this survey. As in the past, this year's survey examined the number of faculty, vacancies, retirements, frozen positions, new hires, and recruitments. As in 1994, we collected information about the number of women on physics faculties.

NUMBER OF FACULTY

We asked each department to report its number of full-time equivalent (FTE) teaching or research positions in physics or astronomy on March 1, 1998. In addition to the 647 responses we received, we estimated the number of FTE faculty for 75 additional departments from other sources. We estimate that all degree-granting physics departments employed 8,350 full-time equivalent physicists during the spring of 1998 (see Table 1). Most of these physicists worked in the 183 departments that grant a Ph.D. in physics. This survey did not attempt to count all physicists working in colleges and universities. We did not include postdocs, physicists working in departments that do not grant physics degrees, and physicists who conduct research in university institutes but are not included in departments' FTE count.

Table 1. Estimated Number of Full-Time Equivalent Physics Faculty and Mean Number of Faculty, 1994, 1996, 1998

Type of Department		1994	1996*	1998
Ph.D.	FTE	4900	4900	5000
	Mean	27	27	27
Master's	FTE	800	900	850
	Mean	10	11	12
Bachelor's	FTE	2500	2500	2500
	Mean	5	5	5
Total				
	FTE	8200	8300	8350
	Mean	11	11	11

Source: AIP 1998 AWF Report

*Revised since the 1996 report was published.

Since 1994, the average number of FTE faculty at departments that grant Ph.D.s and bachelor's degrees in physics was constant. Departments that grant bachelor's degrees as their highest physics degree had an average of about five FTE faculty from 1994 to 1998. Departments that grant Ph.D.s in physics had an average of about 27 FTE faculty during this time. The exception to this constancy was among departments that grant a master's degree as their highest physics degree. In 1994, master's departments had an average of about ten FTE faculty. By 1998, master's departments had an average of about 12 FTE faculty. However, the number of departments that grant master's degrees as their highest physics degree decreased significantly, from 80 in 1996 to 72 in 1998.

WOMEN FACULTY

The representation of women on physics faculties increased, particularly at the lower ranks and at departments that do not grant graduate degrees in physics. In 1994, 12% of assistant professors were women; by 1998, 17% of assistant professors were women (Table 2). Only 7% of faculty members at bachelor's departments in 1994 were women. By 1998, this percentage increased to 11%.

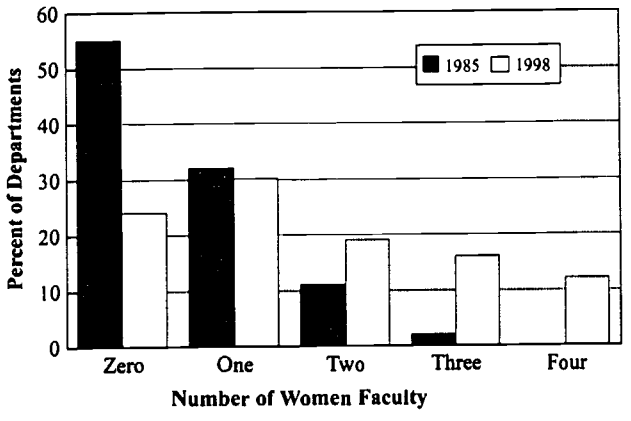
Table 2. Percent of Faculty Positions in Physics That Were Held by Women, 1994 and 1998

		1994 (%)	1998 (%)
Academic Rank	Full Professor	3	3
	Associate Professor	8	10
	Assistant Professor	12	17
	Other Ranks	8	13
Type of Department	Ph.D.	5	6
	Master's	7	9
	Bachelor's	7	11
	Total	6	8

Source: AIP 1998 AWF Report

Overall, more physics departments had women faculty members than was true a few years ago. In 1985, 45% of Ph.D. physics departments had at least one woman on their faculties. In 1998, 76% of Ph.D. physics departments had at least one woman faculty member (Figure 1). The number of master's and bachelor's departments that had women on their faculties also increased (Figure 2), although data for these departments are only available since 1994. By 1998, half of the master's departments and 39% of the bachelor's departments had at least one woman faculty member.

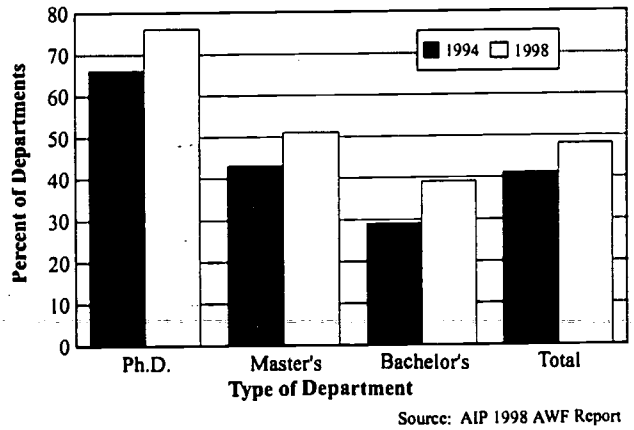
Figure 1. Number of Women Faculty in Ph.D. Physics Departments, 1985 and 1998



Note: For the 1985 data category, "Three" represents three or more.
Source: AIP Statistics Division

Although Ph.D. departments had a smaller percentage of women faculty members than bachelor's departments (Table 2), more Ph.D. physics departments had women on their faculties (Figure 2). This means that a larger number of women physicists worked at Ph.D. departments than at bachelor's departments. In fact, nearly 30% of Ph.D. departments now have three or more women on their faculties.

Figure 2. Percent of Physics Departments with Women at Any Rank, 1994 and 1998



Source: AIP 1998 AWF Report

Table 3. Estimated Tenured and Tenure-Track Physics Faculty Turnover

	Type of Department			
	Ph.D.	Master's	Bachelor's	Total
Number of Departments, 1998	183	72	502	757
Percent of Depts. With Vacancies, 1996-97	48	41	22	29
Estimated Vacant Positions, 1996-97	145	41	113	299
Estimated Turnover, 1996-97	2:9	4.8	4.5	3.6
Estimated Turnover, 1994-95	3.6	4.0	3.8	3.7

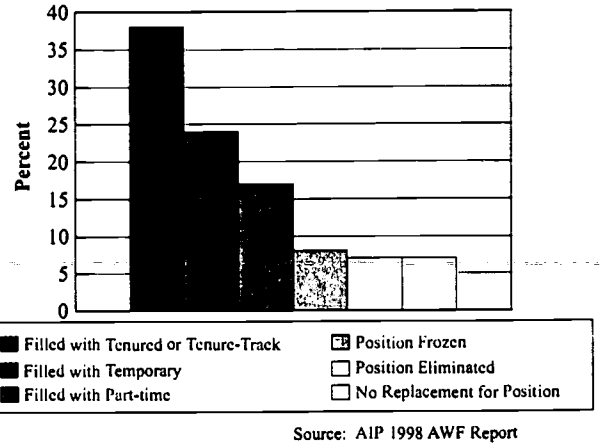
Source: AIP 1998 AWF Report

TURNOVER 1996-97

We estimate that about 300 tenured and tenure-track faculty left their positions in the academic year 1996-97 (Table 3). This resulted in a turnover rate of 3.6%, which was virtually unchanged since 1994-95. Departments that grant a Ph.D. in physics had a somewhat lower turnover rate of 2.9% in 1996-97, while master's and bachelor's departments reported turnover rates of 4.8% and 4.5% respectively.

We asked the departments to indicate the status of these vacancies at the beginning of the 1998 spring semester or quarter. Almost 40% of these positions had been filled with tenured or tenure-track faculty members (Figure 3). Temporary or part-time faculty members filled another two-fifths of the positions. Fifteen percent of the positions had been either frozen or eliminated. The departments had not filled, frozen, or eliminated the remaining 7% of the vacant positions. In most cases, other faculty had taken over the work of these positions.

Figure 3. Status of 1996-97 Physics Vacancies During Spring 1998



Source: AIP 1998 AWF Report

Table 4. Estimated Annual Retirement Rates for Physics Faculty During Two Academic Years, 1996-97 and 1997-98

	Type of Department			
	Ph.D.	Master's	Bachelor's	Total
Estimated Number of Retirements per Year	105	29	61	195
Estimated Percent of Departments with Retirements per Year	29	26	11	16
Estimated Annual Retirement Rate	2.3	3.8	2.7	2.6

Source: AIP 1998 AWF Report

RETIREMENTS

During the 1996-97 and 1997-98 academic years, an estimated 195 faculty retired each year, for an overall annual retirement rate of 2.6% (Table 4). This was an apparent increase from the annual retirement rate of 2.2% during 1994-95 and 1995-96. However, we phrased the question differently in the current survey than in the past. Previously, we asked how many openings resulted from retirements. Many department chairs commented that having a faculty member retire did not necessarily create an opening. In the current survey, we asked simply how many retirements there had been during 1996-98. During 1996-98, master's departments had the highest annual retirement rate at 3.8%. The annual retirement rate for bachelor's departments was 2.7% and for Ph.D. departments was 2.3%. The departments reported that 43% of the retirements were due to a retirement incentive program.

The departments said that administration would allow them to fill 74% of the positions vacated by the 1996-98 retirements. They also said that they would try to fill 78% of the vacant positions with tenured or tenure-track faculty members. Some departments explained that although they could not yet fill a position, they intended to fill it eventually.

In the current survey, we asked the departments if they expected any openings from retirements during 1998-99 and 1999-2000. We estimate that 2.3% of the current FTE positions will be open due to retirements each year during these two academic years. This anticipated annual retirement rate is lower than the actual annual retirement rate for 1996-97 and 1997-98, but this does not necessarily mean that retirements will go down. One difference is that we asked for anticipated *openings* due to retirement, which is different from asking about anticipated retirements. In addition, departments may have difficulty anticipating retirements, especially when a large percentage of retirements result from incentive programs.

NEW HIRES FOR 1997-98

We estimate that the departments hired 512 new faculty members (including tenured, tenure-track, part-time, and temporary full-time) for the 1997-98 academic year (Table 5). The percentage of departments hiring new faculty members increased from 38% in 1995-96 to 45% in 1997-98. However, the percentage of departments hiring tenured or tenure-track faculty members remained at about 25% in both years. The average number of tenured and tenure-track hires per hiring department remained at about 1.3 in 1995-96 and in 1997-98. It would appear that there was an increase in part-time and temporary hiring, but we believe the apparent increase was probably due to a change in the questionnaire. In the current survey, we asked departments to provide information on people hired as part-time *and* as temporary, full-time faculty members. Previously, the questionnaire only asked for information on people hired as temporary faculty members and did not specifically mention part-time hires. Therefore, the

Table 5. Estimated Number of Physics Faculty Hired, 1997-98				
	Type of Department			
	Ph.D.	Master's	Bachelor's	Total
All Faculty	208	46	258	512
Tenured and Tenure-Track	137	23	104	264
Percent of Departments Hiring any Faculty	63	41	39	45
Percent of Departments Hiring Tenured and Tenure-Track	48	27	19	26

Source: AIP 1998 AWF Report

departments may have reported more part-time hires during this survey than they did in the past.

Employment status. Overall, 46% of the new hires were tenure-track positions (Table 6). Ph.D. departments reported hiring larger percentages of tenured and tenure-track faculty members than master's and bachelor's departments. Likewise, master's and bachelor's departments reported hiring more part-time faculty members than Ph.D. departments. In addition, nearly 30% of the new faculty members hired at bachelor's departments were temporary full-time, while the percentage of temporary full-time new hires was much lower at graduate departments.

The greater occurrence of temporary and part-time hires at master's and bachelor's departments may be an artifact of department size. Larger departments, such as Ph.D. departments, probably have different replacement strategies than smaller departments. For example, large Ph.D. departments probably have at least one faculty member on sabbatical leave in any given year and may even be able to make tenure-track hires to cover those on leave. Smaller bachelor's departments, on the other hand, must replace a faculty member on leave with a temporary or part-time faculty member, and thus report hiring more of these kinds of faculty members.

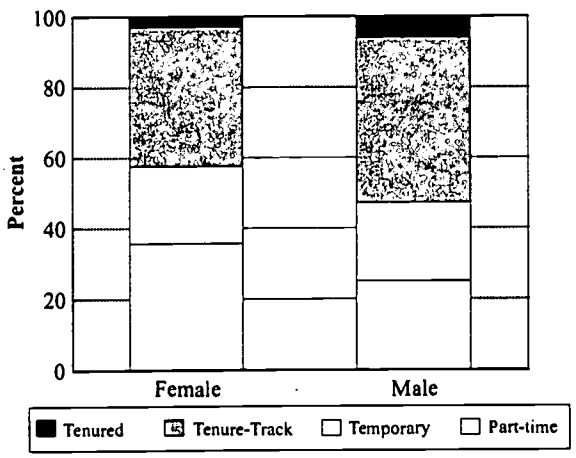
In 1995-96, 50% of all new hires (including temporary faculty) were at Ph.D. departments. In 1997-98, 50% of all new hires (including part-time and temporary full-time) were at bachelor's departments. Again, this was the first year that we asked specifically about part-time hires, and the increase in hires at bachelor's departments was probably because bachelor's departments reported more part-time and temporary hires than Ph.D. departments.

Table 6. Employment Status of New Hires in Physics Departments, 1997-98				
	Type of Department			
	Ph.D.	Master's	Bachelor's	Total
	(%)	(%)	(%)	(%)
Tenured	9	3	3	6
Tenure-Track	57	47	37	46
Temporary	16	14	29	22
Part-time	18	36	31	26

Source: AIP 1998 AWF Report

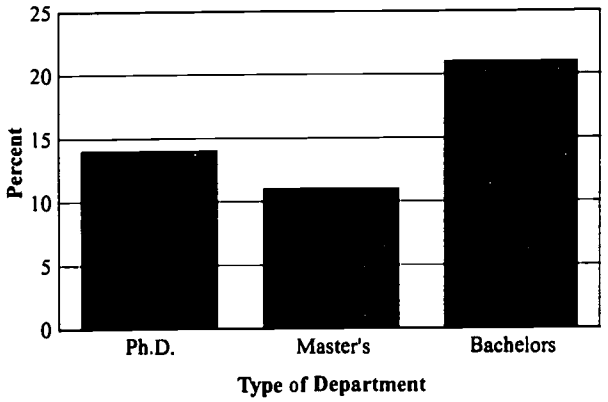
Women. Seventeen percent of the new hires were women. However, 34% of the women hired were part-time, while 24% of the men hired were part-time (Figure 4). Likewise, 54% of the men hired were tenured or tenure-track, while 44% of the women were tenured or tenure-track. Bachelor's departments reported hiring the largest percentage of women (Figure 5), which coincided with their large percentage of part-time hires. However, master's departments, which had a similar percentage of part-time hires, had the lowest percentage of female new hires, at 11%.

Figure 4. Employment Status and Gender of New Physics Faculty Hires for 1997-98



Source: AIP 1998 AWF Report

Figure 5. Percentage of New Physics Faculty Members Who Are Women, 1997-98



Source: AIP 1998 AWF Report

Previous position. Among the faculty hired at departments that grant graduate degrees in physics, the most common previous position was a postdoc. About one-third of the new hires at these departments were postdocs immediately before being hired (Table 7). Although not the most common, postdoc was still a common previous position among those hired at bachelor's departments. Fourteen percent of the new hires at bachelor's departments had held postdocs before being hired. Research scientist was the second most common previous position among those hired at graduate departments and was important for those hired at the bachelor's level. Faculty members who held appointments at other colleges and universities

Table 7. Most Common Previous Positions of New Physics Faculty Hired for 1997-98

Type of Department		
Ph.D. (%)	**Master's** (%)	**Bachelor's** (%)
Postdoc (33)	Postdoc (30)	Grad Student (24)
Research Scientist (30)	Research Scientist (27)	Professor--Any Rank (21)
Professor--Any Rank (18)	Grad Student (20)	Postdoc (14)
Graduate Student (7)	Professor--Any Rank (10)	Research Scientist (11)

Source: AIP 1998 AWF Report

Table 8. Most Common Specializations of New Physics Faculty Hired for 1997-98

Type of Department			
Ph.D. (%)	**Master's** (%)	**Bachelor's** (%)	**Total** (%)
Condensed Matter (29)	Condensed Matter (20)	Condensed Matter (20)	Condensed Matter (24)
Elementary Particles (18)	Elementary Particles (16)	Astronomy/Astrophysics (17)	Astronomy/Astrophysics (15)
Astronomy/Astrophysics (12)	Astronomy/Astrophysics (16)	AMO (15)	Elementary Particles (14)
AMO (9)	Nuclear Physics (12)	Elementary Particles (10)	AMO (11)
Nuclear Physics (9)		Nuclear Physics (9)	Nuclear Physics (10)

Source: AIP 1998 AWF Report

accounted for many of the new hires: 18% at Ph.D. departments, 10% at master's departments, and 21% at bachelor's departments. Among those hired at bachelor's departments, the most common previous position was graduate student (24%). However, graduate students accounted for a lower percentage of new hires at master's and Ph.D. departments, and in fact were only 7% of new hires at Ph.D. departments.

Overall, 8% of new hires were instructors, adjunct, or part-time in their previous jobs. Only 27% of these new faculty members obtained tenure-track positions for their new jobs. However, 62% of the new faculty members who had been visiting faculty at their previous positions were hired as tenured or tenure-track faculty members at their next jobs.

Specialization of new faculty members. Condensed matter continued to be the most prevalent area of specialization for new hires. About one-fourth of all new hires specialized in condensed matter for their Ph.D.s (Table 8). Other common specialties of new hires were astronomy/astrophysics, elementary particles, nuclear physics, and atomic, molecular and optical physics (AMO). There were only slight variations among the types of departments. One notable exception was that no master's department hired anyone in AMO.

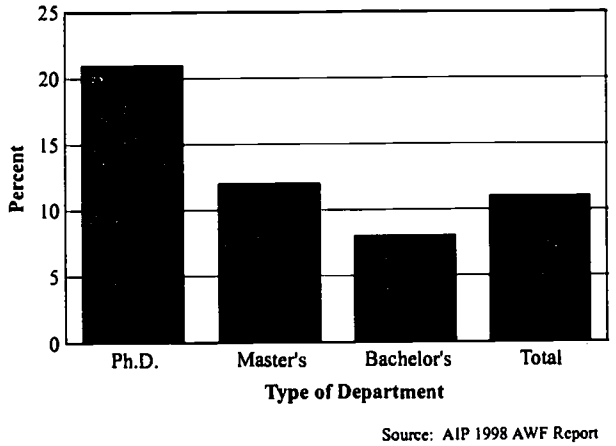
Years since Ph.D., previous employer, and location of Ph.D. The majority (51%) of new hires at Ph.D. departments earned their Ph.D. in the U.S. before 1994 (Table 9). Of these, most were previous employees of U.S. academic institutions. About one-fourth of the new hires at Ph.D. departments were recent U.S. Ph.D.s (earned in 1994 or later), and nearly one-fourth earned a Ph.D. outside the U.S.

The new hires at bachelor's departments were somewhat different from the new hires at Ph.D. departments. At bachelor's departments, the majority (57%) of new faculty members were recent Ph.D.s (earned in 1994 or later), although a sizable percentage (38%) earned their Ph.D.s before 1994 (Table 9).

Table 9. Backgrounds of New Physics Faculty Hired, 1997-98

	Type of Department	
	PhD (%)	**Bachelor's** (%)
Earned Ph.D. in U.S. Before 1994		
Previous Employer:		
U.S. Academic Institution	32	32
Industry, National Lab, Other	19	6
Earned Ph.D. in U.S. Since 1994	26	57
Earned Ph.D. outside U.S., any Year	23	4

Figure 6. Physics Departments with Frozen Positions, 1998-99



Source: AIP 1998 AWF Report

Most of the pre-1994 Ph.D.s previously worked at U.S. academic institutions. Faculty members who earned their Ph.D.s outside the U.S. were only a small percentage of the new hires at bachelor's departments.

FROZEN POSITIONS 1998-99

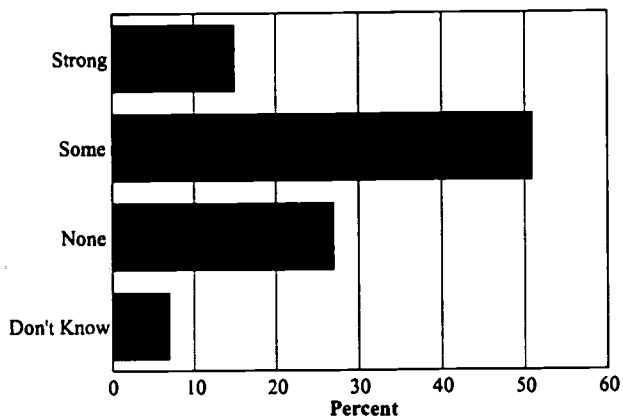
Eleven percent of the departments reported frozen positions for 1998-99, which means that they temporarily could not fill vacant positions. We estimate that during 1998-99, there were 123 frozen positions in all degree-granting physics departments.

Departments that grant Ph.D.s had a higher percentage of frozen positions than departments that grant master's and bachelor's degrees in physics (Figure 6). Over half the departments said that the frozen positions were due to financial or budgetary considerations. The next two most frequently given reasons for frozen positions were declining enrollments and too many retirements, at 12% each.

We asked the departments to indicate the likelihood that they would lose a position if someone in their department left or retired. Fifteen percent of the departments said that there was a strong possibility of losing a position (Figure 7). Fifty-one percent said that there was a possibility, although not a strong one, of losing a position. Twenty-seven percent said there was no possibility of losing the position, and the remainder (7%) did not know. Departments that grant a bachelor's degree as their highest physics degree were more confident that they would not lose a position than departments that grant graduate degrees.

In addition, we asked the departments if any of their faculty members had delayed retirement in order to avoid losing a position. Only 5% of the departments said that this had happened in their department.

Figure 7. Perceived Likelihood of Losing a Physics Position When a Vacancy Occurs

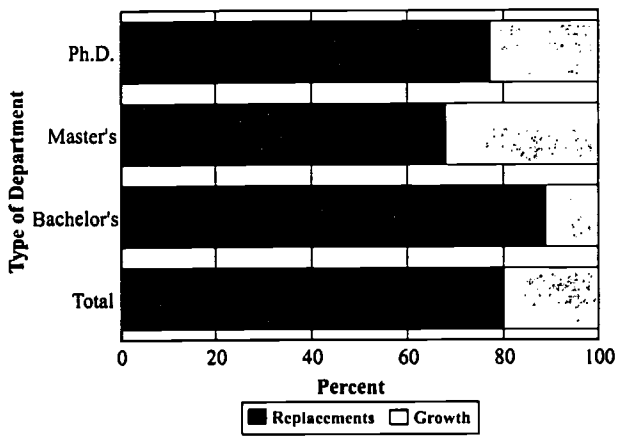


Source: AIP 1998 AWF Report

RECRUITMENT FOR 1998-99

Although some departments had vacancies that were frozen, many departments were hiring replacements, and in some cases, departments reported that they recruited for positions that were the result of department growth. Thirty-four percent of the departments said that they recruited for an estimated 373 tenure-track and tenured positions for 1998-99. The majority of these positions (54%) were at departments that grant Ph.D.s in physics. Overall, 20% of the departments' anticipated positions were due to department growth (new positions), while the rest were replacements for current faculty (Table 8).

Figure 8. Source of Recruited Positions in Physics Departments, 1998-99



Source: AIP 1998 AWF Report

Master's degree departments had the largest percentage of positions due to department growth, indicating that average number of FTE faculty at these departments will continue to grow.

In general, departments recruited more experimentalists than theorists. Departments were more selective and recruited in fewer areas of specialization this year than in the previous survey year. For example, departments indicated that they had considered candidates in an average of 1.7 areas of specialization this year, but in the 1996 survey, they indicated an average of 2.2 areas.

Among Ph.D. departments, condensed matter was still the most popular recruiting sub-field, although fewer reported that they recruited in condensed matter than in previous survey years (Table 10). Ph.D. departments also recruited a smaller percentage of candidates in nuclear physics and plasma physics than in previous survey years. This year, almost none of the Ph.D. departments indicated that teaching ability was the most important consideration in hiring.

Table 10. Sub-fields Considered by Ph.D. Physics Departments Seeking Candidates: 1992, 1994, 1996, and 1998*

	1992 (%)	1994 (%)	1996 (%)	1998 (%)
Condensed Matter Exp.	62	56	55	38
Condensed Matter Theory	35	33	30	24
AMO Experimental	31	28	23	22
Astronomy/Astrophysics	24	22	33	20
Elementary Particle Exp.	27	27	19	15
Elem. Particle Theory	22	21	14	10
AMO Theory	13	11	12	9
Sub-field not Important	6	9	7	7
Biophysics**	–	–	6	6
Nuclear Experimental	19	18	15	5
Nuclear Theory	9	9	6	2
Plasma	6	7	6	2
Teaching	2	4	10	1

Source: AIP 1998 AWF Report

*Departments could select more than one sub-field, so columns do not total 100%.
**Data not available before 1996.

Departments that grant bachelor's degrees as their highest physics degrees continued to recruit mainly for teaching ability rather than specialization in a particular area (Table 11). However, a smaller percentage of these departments reported recruiting for teaching ability than in previous survey years. Among the bachelor's departments that recruited a particular sub-field, condensed matter experimental and AMO experimental were the most popular. Fewer bachelor's departments recruited in nuclear experimental, condensed matter theory, elementary particle experimental, and AMO theory than in previous survey years.

Table 11. Sub-fields Considered by Bachelor's Physics Departments Seeking Candidates: 1992, 1994, 1996, and 1998*

	1992 (%)	1994 (%)	1996 (%)	1998 (%)
Teaching	73	62	61	51
Sub-field not Important	18	28	26	24
Condensed Matter Exp.	27	29	20	20
AMO Experimental	23	20	26	18
Astronomy/Astrophysics	10	13	10	8
Nuclear Experimental	6	8	10	3
Condensed Matter Theory	6	11	9	3
Elementary Particle Exp.	6	5	5	0
AMO Theory	6	6	5	0

Source: AIP 1998 AWF Report

*Departments could select more than one sub-field, so columns do not total 100%.

EDUCATION AND EMPLOYMENT STATISTICS DIVISION PUBLICATIONS

The Education and Employment Statistics Division collects data on the composition and dynamics of the scientific labor force and the education system. Below is a list of the Division's current publications along with a brief description of each. Unless otherwise indicated, single copies can be downloaded for free at our website *www.aip.org/statistics* or by writing to:

American Institute of Physics
Education and Employment Statistics Division
One Physics Ellipse
College Park, MD 20740-3843
(301) 209-3070 E-mail: stats@aip.org
www.aip.org/statistics

When applicable, all orders must be prepaid. Please make your checks payable to the American Institute of Physics.

** *1997-98 Academic Workforce Report (May 1999)* - ***NEW*** - A detailed analysis of faculty openings and new hires in universities and four-year colleges.

**1997 Bachelor's Degree Recipients Report (Sept. 1998)* - A summary of the characteristics and career goals of physics and astronomy bachelors' degree recipients.

Directory of Two-Year College Physics Programs & Staff: 1996-1997 (1997) - First comprehensive nationwide roster of two-year college physics programs and faculty.

Enrollments and Degrees Report (March 1999)* - ***NEW* - An examination of academic enrollments and degrees conferred in physics and astronomy programs nationwide.

1997 Graduate Student Report (May 1999)* - ***NEW - A summary of the characteristics and career goals of physics and astronomy graduate students.

**1997 Initial Employment Report: Follow-Up of 1996 Physics Degree Recipients (July 1998)* - A description of the initial employment search and eventual employment of physics and astronomy degree recipients.

Physicists in Government (April 1997) - An examination of the common career paths of Sigma Pi Sigma members with bachelors, masters and PhDs employed in FFR&DCs, federal agencies, state and local government and the active military.

****Physics in the High Schools IV (Maintaining Momentum: High School Physics for a New Millennium, 1997) (Summer '99)* - ***NEW*** - An analysis and interpretation of information collected in a nationwide survey of teachers of physics at the secondary level.

Physics in the Two-Year Colleges (Oct. 1998) - ***NEW*** - First comprehensive study of physics programs and faculty in the two-year colleges.

The Physics Bachelors as a Passport to the Workplace: Recent Research Results (July 1996) - An examination of the common career paths of physics bachelors and the effectiveness of the physics curriculum in preparing students for diverse careers. Only available at our web site at www.aip.org/statistics/trends/trends/htm.

**Roster of Astronomy Departments with Enrollment and Degree Data, 1997 (Sept. 1998)* - Detailed data for astronomy degree-granting departments in the U.S.

**Roster of Physics Departments with Enrollment and Degree Data, 1997 (Sept. 1998)* - Detailed data for physics degree-granting departments in the U.S.

1998 Salaries: Society Membership Survey (April 1999)* - ***NEW - An analysis of the effect of factors such as geographic location, employment sector, gender, years from degree, and degree level on salary levels and salary increases. **$15** for a single copy, **$10** each for multiple copies.

** *1998: Salaries Summary Report (April 1999)* - ***NEW*** - A two-page summary which gives overall trends and salaries.

What Are Masters Doing? (Sept. 1996) - An examination of the common career paths of Sigma Pi Sigma members who obtained their master's degrees.

* Published annually ** Published biennially *** Published triennially

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

☑ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").