

Women among Physics & Astronomy Faculty

Results from the 2010 Survey of Physics Degree-Granting Departments

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Representation of Women Continues to Grow

The percentage of women among physics faculty members continues to rise, reaching 14% overall in 2010. Likewise, the percentage of women in each academic rank continues to rise. However, the rank with the largest number of faculty members, full professors, is less than 10% female (Table 1). As our previous reports have shown, the main reason for the low representation of women among full professors of physics is the low representation of women among physics doctorates in the past (Ivie and Ray, 2005).

Table 1

Percentage of Physics Faculty Members Who Are Women

	Year			
	1998	2002	2006	2010
by Academic Rank	(%)	(%)	(%)	(%)
Full Professor	3	5	6	8
Associate Professor	10	11	14	15
Assistant Professor	17	16	17	22
Instructor / Adjunct	*	16	19	21
Other ranks	13	15	12	18
by Highest Degree Offered by Department	(%)	(%)	(%)	(%)
PhD	6	7	10	12
Master's	9	13	14	15
Bachelor's	11	14	15	17
OVERALL	8	10	12	14

The year in the table refers to the spring semester; for example, 2010 represents the 2009-10 academic year.

* These data were not collected in this survey year.

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

**REPORTS ON
PHYSICS
FACULTY**

Number of Physics Faculty
(4/2012)

**Women among Physics &
Astronomy Faculty**
(8/2013)

**THE 2010 ACADEMIC
WORKFORCE SURVEY**

During the spring semester of 2010, we contacted all of the departments in the US that offered at least a bachelor's degree in physics or astronomy.

Departments that grant PhDs in physics have a lower percentage of women faculty than departments that do not grant graduate degrees in physics (Table 1). PhD-granting physics departments tend to be larger, however, and in fact have more women in terms of number than bachelor's-granting physics departments. The average number of faculty members in PhD-granting departments was 29.2 in 2010, compared to 5.1 for bachelor's granting departments. In 2010, approximately 5600 FTE faculty members worked in PhD-granting physics departments. Approximately 670 of these were women. In bachelor's departments, there were 2960 FTE faculty members in 2010, and approximately 500 of these were women.

Women among Newly-Hired Physics Faculty

In physics, women continue to be hired as assistant professors, as well as instructors and adjuncts (Table 2), at well above their availability rate among doctoral recipients, which was 18% in 2007. This reflects not only physics departments' willingness to hire women, but women's own desires and abilities to take these academic jobs over jobs in other sectors.

Table 2

Percentage of Newly-Hired Physics Faculty Who Are Women

by Academic Rank	Year		
	2006	2008	2010
	(%)	(%)	(%)
Full Professor	9	10	20
Associate Professor	8	20	14
Assistant Professor	25	22	29
Instructor / Adjunct	23	23	24
OVERALL	22	21	26

The year in the table refers to the spring semester; for example, 2010 represents the 2009-10 academic year.

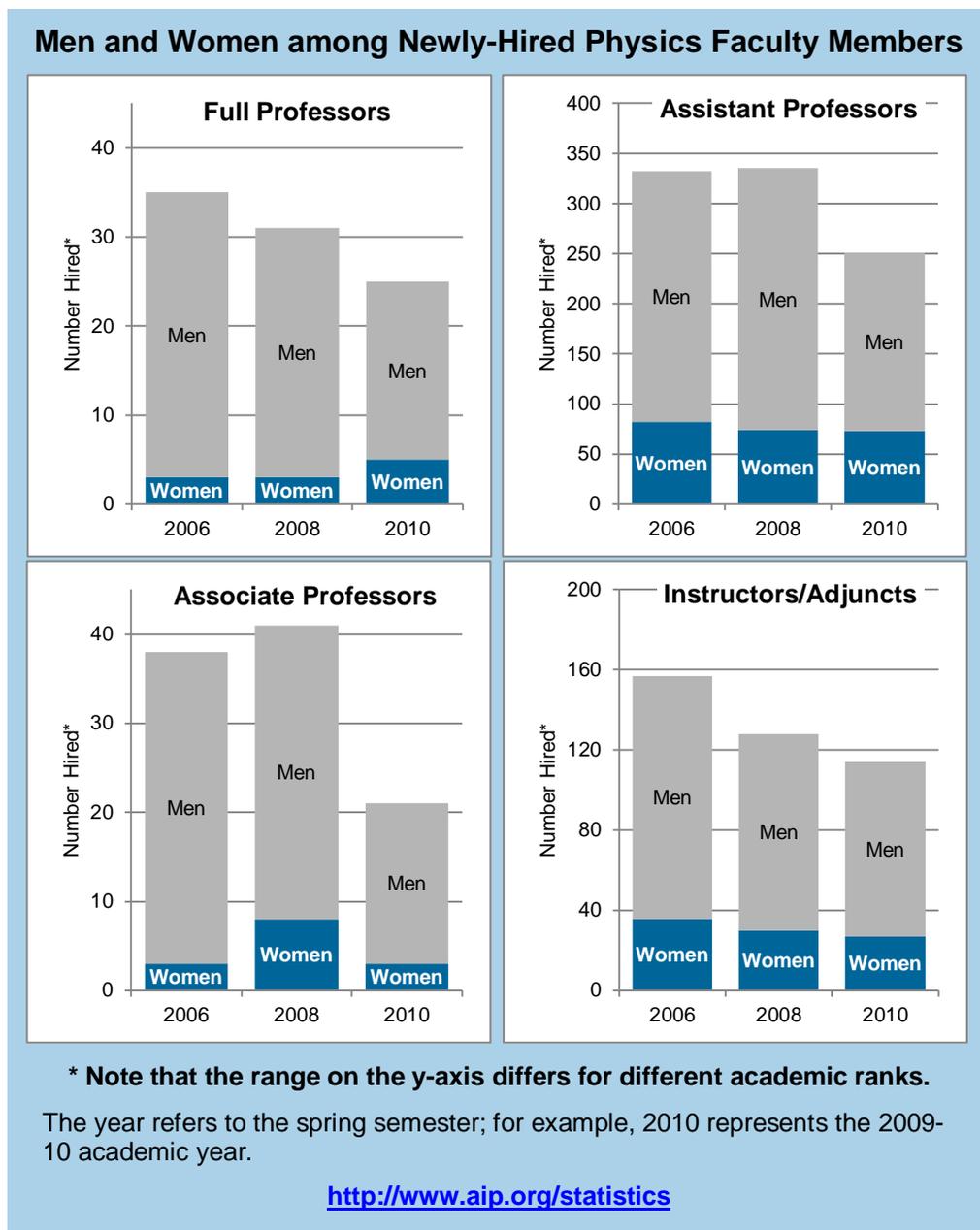
<http://www.aip.org/statistics>

The proportion of women among newly-hired physics faculty members continues to rise.

The percentage of women among newly hired full professors has increased quite a bit (Table 2), but this is an artifact of the lower number of male full professors hired in 2010, the first year that we collected data after the recession of 2008. Our 2008 data reflect faculty members who started in the academic year 2007-08, before the recession. In fact, there were fewer new male hires at all ranks in 2009-10 than in 2007-08 (Figure 1 on the next page). In spite of the smaller number of male new hires, the total number of women hired has remained about the same

since 2006. There were an exceptionally large number of female associate professors hired for 2007-08 for reasons that are not clear.

Figure 1



Even though the total number of faculty members hired has dropped, the number of women has remained relatively constant since 2006.

Number of Women in Physics Departments

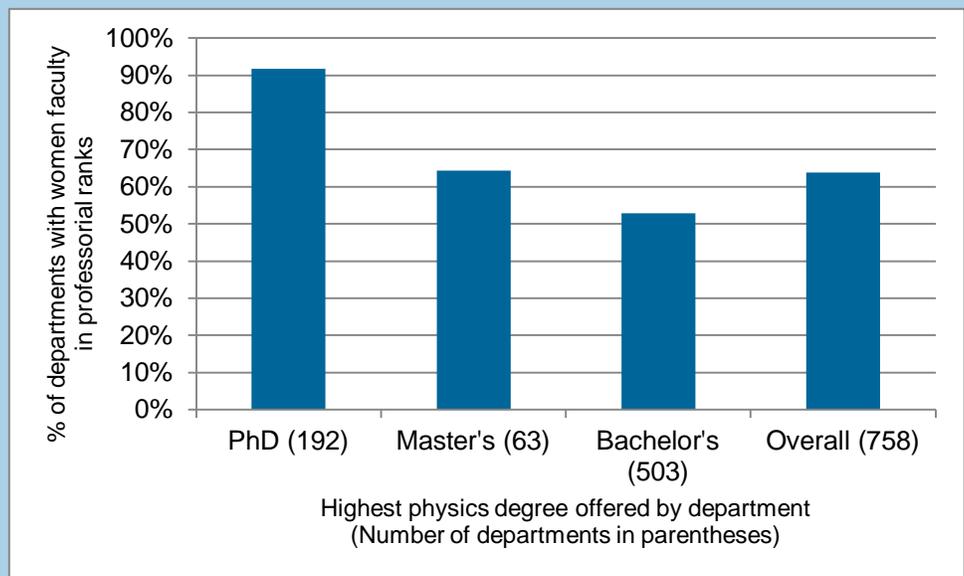
There continue to be some physics departments that have no women on their faculties (Figure 2). The percentage is higher at bachelor's-granting departments than at PhD-granting departments, largely because of the small number of faculty members at most bachelor's-granting departments. About 47% of bachelor's-granting departments

had no women faculty members, while one percent of the bachelor's-granting departments had *only* women faculty members. We show in another report that the main reasons for departments not having any women is the total number of faculty members in the single department and the overall proportion of women among all current physics faculty (White and Ivie, 2013).

Partly because of the large size of PhD-granting departments, these departments are more likely to have multiple women faculty members. In fact, in 2010, about 15% of PhD physics departments had 5 or more women faculty members and only 8% had no women at all. Figure 3 (next page) depicts the number of women faculty members in PhD-granting departments.

Figure 2

Proportion of Physics Departments with Women Faculty by Highest Degree Granted, 2009-10 Academic Year

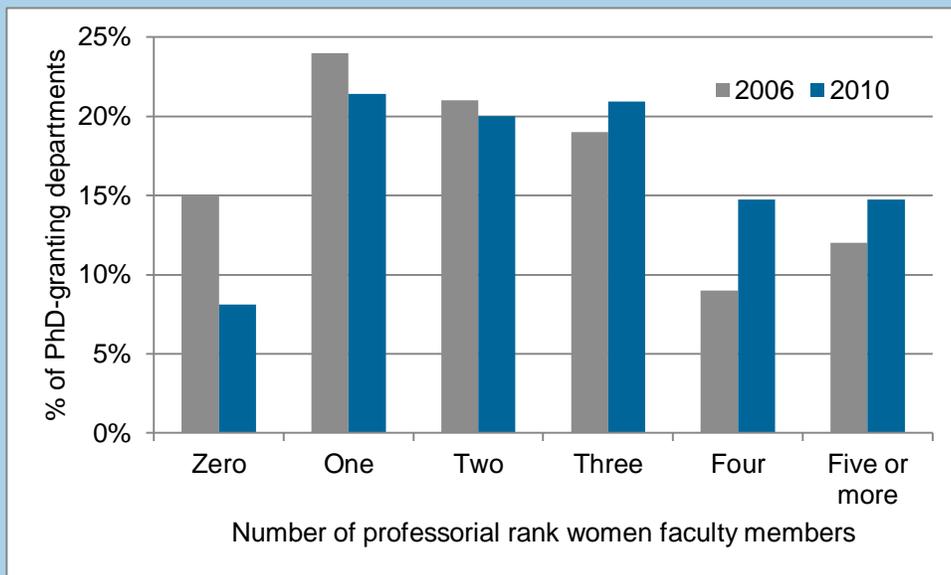


<http://www.aip.org/statistics>

Bachelor's-granting departments have, on average, fewer faculty members; thus, it is not surprising that a higher proportion of these departments have no women faculty members.

Figure 3

**Percentage of PhD-Granting Physics Departments
by Number of Women Faculty Members**



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

The year refers to the spring semester; for example, 2010 represents the 2009-10 academic year.

About 15% of the PhD-granting physics departments had at least five women faculty members during the 2009-10 academic year.

Women in Astronomy Departments

Overall, 19% of the faculty members in departments that grant degrees only in astronomy are women, which is larger than the percentage of female physics faculty members (14%) in physics departments.* (See Table 3 on the following page.) The percentage of women astronomy faculty members also varies by rank, with full professors having the lowest percentage. As with physics, the reasons for this have to do with the lower percentage of women receiving degrees in the past. In astronomy departments, women are represented among assistant professors (30%) at about the same rate as PhD recipients, which was about 33% in 2007. There are astronomy faculty members in physics departments, and about 20% of these are women.

* Astronomy also has a greater proportion of women among degree recipients than physics does (Nicholson and Mulvey, 2011).

Table 3

**Percentage of Astronomy Faculty Who Are Women
in Departments which offer an Astronomy degree and no Physics degree**

by Academic Rank	Year		
	2003	2006	2010
	(%)	(%)	(%)
Full Professor	10	11	15
Associate Professor	23	24	22
Assistant Professor	23	28	30
Instructor / Adjunct	15	15	*
Other Ranks	15	21	17
OVERALL	14	17	19

* Too few to report

The year refers to the spring semester; for example, 2010 represents the 2009-10 academic year.

The representation of women among faculty in astronomy departments has consistently been about 5 percentage points higher than that of women among faculty in physics departments.

References

- Ivie, Rachel and Ray, Kim Nies. 2005. *Women in Physics and Astronomy, 2005*. AIP, College Park, MD.
- Nicholson, Starr and Mulvey, Patrick. 2011. *focus on Astronomy Enrollments and Degrees*. AIP, College Park, MD.
- White, Susan and Ivie, Rachel. 2013. *Number of Women in Physics Departments: A Simulation Analysis*. AIP, College Park, MD.

Survey Methodology

Between March and July 2010, we contacted each of the 796 departments that awarded at least a bachelor's degree in physics or astronomy by e-mail, mail, and certified mail. Follow-up contacts were made for departments that had not yet responded. We received responses from 744 departments (93%). We offer our sincere gratitude to the responding departments. Without your help, we could not track these data.