

Number of Physics Faculty

Results from the 2008 Survey of Physics Degree-Granting Departments

Rachel Ivie, Arnell Ephraim & Susan White

**REPORTS ON
PHYSICS &
ASTRONOMY
FACULTY**

**Number of Physics
Faculty (10/2009)**

Number of Astronomy
Faculty (12/2009)

Minorities among Physics &
Astronomy Faculty (2/2010)

Hiring in Physics &
Astronomy Departments
(4/2010)

Women Faculty in Physics
& Astronomy (6/2010)

Physics Faculty Numbers Show Little Change

9,100 full-time equivalent (FTE) faculty members were employed by 763 physics degree-granting departments during the 2008-09 academic year. Both the number of FTE faculty and the number of departments have changed little since 2006-07. The data are provided in Table 1.

Table 1

**Total Full-Time Equivalent (FTE) Faculty
in Physics Departments
by Highest Degree Awarded**

Highest Degree Awarded	Year		
	1998	2006	2008
PhD	4,900 (183)	5,400 (184)	5,400 (189)
Master's	800 (72)	850 (66)	800 (63)
Bachelor's	2,500 (502)	2,900 (510)	2,900 (511)
TOTAL	8,200 (757)	9,150 (760)	9,100 (763)

(Number of Departments given in parentheses)

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

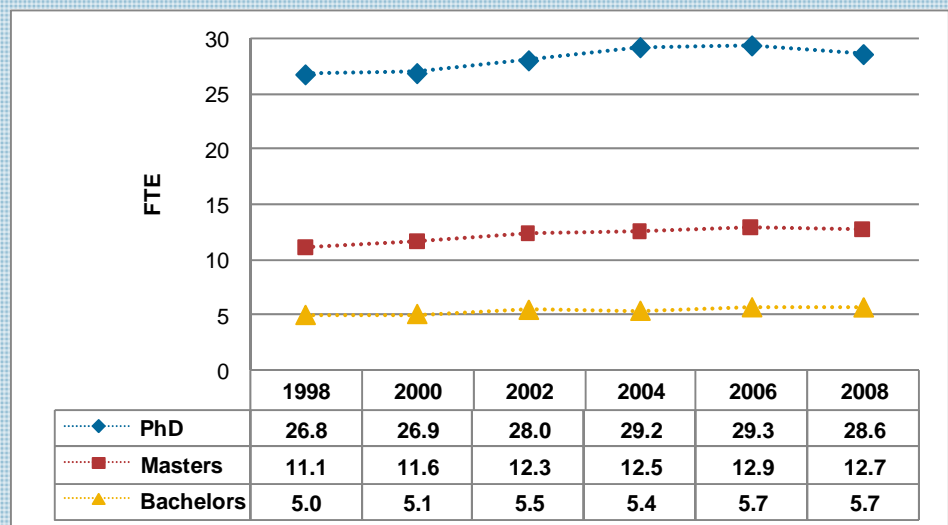
**THE 2008 SURVEY OF
PHYSICS DEGREE-
GRANTING
DEPARTMENTS**

During the spring semester of 2008, we contacted all of the departments in the US that offered at least a bachelor's degree in physics. These reports describe our findings.

Figure 1 depicts the average number of FTE faculty members per physics degree-granting department over the last ten years. As with the total faculty numbers, there is steady growth through 2002 to 2004; the numbers then become relatively stable. It is interesting to note the effect of graduate degrees on the number of faculty members: the average number of faculty members more than doubles as the highest degree awarded moves from a bachelor's to a master's and then a doctorate.

Figure 1

FTE Physics Faculty per Department by Highest Degree Awarded



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

The average number of FTE physics positions has grown at about 1% per year.

Overall, the average FTE per department has grown from 10.8 FTE faculty members in 1998 to 11.9 faculty members in 2008; this represents a 1% compounded annual average growth rate. The average FTE per department at bachelor's and master's departments has grown faster than that at PhD-granting departments: a 1.3% compounded annual average for the former versus 0.7% for the latter. Of course, some of the apparent slower growth in the PhD-granting departments is directly attributable to the slight dip in 2008. This dip may simply be the result of unfilled positions, or it may reflect more fundamental changes as schools and departments adapt to tighter budgets in light of the general economic conditions. The 2010 survey results will shed more light on these trends.

Temporary & Non-Tenure Track Faculty

In 2004, about one faculty member in five was employed in a temporary or non-tenure track position; this held true across all department types. By 2008, the situation had improved in PhD-granting departments, with about one faculty member in seven employed in a temporary or non-tenure track position. These data are detailed in Table 2.

Table 2

Percent of Full-Time Equivalent Physics Faculty Employed in Temporary or Non-Tenure Track Positions by Highest Degree Awarded

Type of Department	2000	2002	2004	2006	2008
PhD	11	14	18	15	13
Master's	16	19	19	20	20
Bachelor's	19	22	21	22	20
Overall	14	17	19	18	16

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

In 2004, about one faculty member in five was employed in a temporary or non-tenure track position.

As schools adjust to reduced budgets, there are competing factors that will affect the percentage of temporary and non-tenure track faculty. Since these are typically the easiest positions to cut, these numbers might decline. Alternatively, these are also typically less expensive faculty positions, so these numbers might increase.

Distribution of Physics Faculty by Highest Degree Awarded

Table 3 depicts the distribution of physics faculty by the highest degree the department awards. As with the average number of faculty previously shown in Figure 1, the median number of faculty also exhibits the doubling phenomenon, with the median number of faculty doubling each time the level of the highest degree awarded increases. The largest department includes 76 faculty members, and the largest master's-granting department is about the same size as the largest bachelor's-granting department.

The largest department includes 76 faculty members, and the largest master's-granting department is about the same size as the largest bachelor's-granting department.

Table 3

	PhD	Master's	Bachelor's
Number of Departments	189	63	511
Median Number of Faculty	25	12	5
Number of Faculty in Smallest Third of Departments	4-20	3-11	1-4
Number of Faculty in Middle Third of Departments	21-31	11-14	4-6
Number of Faculty in Largest Third of Departments	32-76	14-27	6-24

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

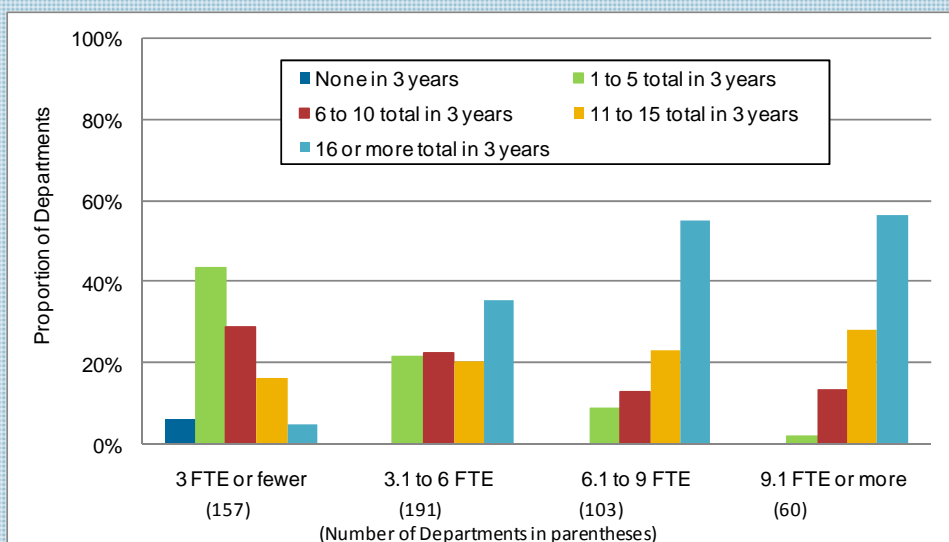
Faculty by Number of Bachelor's Degrees Awarded

Because it is their primary focus, bachelor's departments are much more efficient than doctoral departments at producing physics bachelor's. There were 167 physics bachelor's departments that awarded 16 or more degrees in the 3 academic years 2006, 2007, and 2008 combined. 80% had 9 or fewer FTE faculty. On the other hand, 57 doctoral departments each awarded fewer than 20 bachelor's degrees in these three years. 65% had more than 15 FTE faculty.

Figures 2 and 3 show the relationship between the number of faculty members and the number of bachelor's degrees awarded from 2006 through 2008.

Figure 2

Total Number of Bachelor's Degrees Awarded, 2006 through 2008 by Number of FTE Faculty for Departments offering a Bachelor's as the Highest Degree

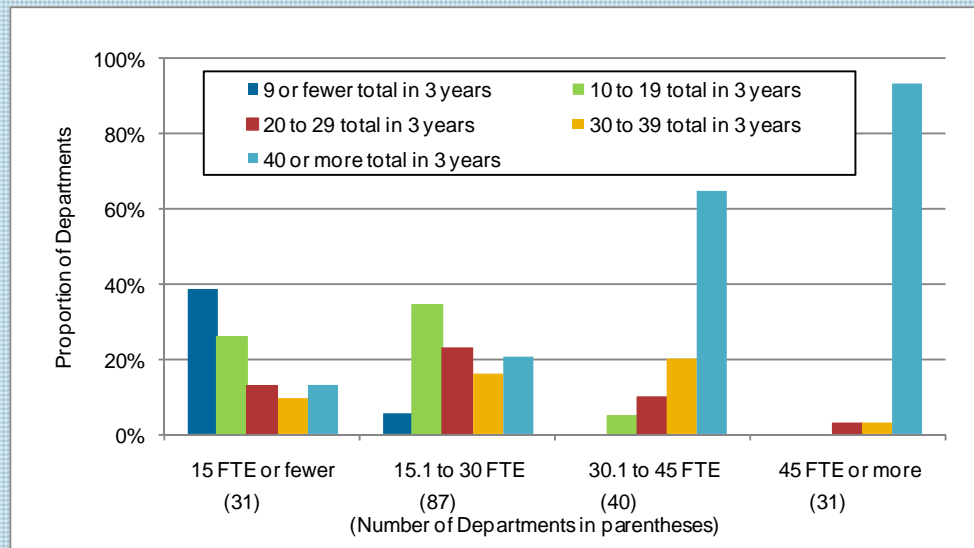


<http://www.aip.org/statistics>

Over half of the physics bachelor's departments with at least 6.1 FTE faculty members awarded at least 11 degrees between 2006 & 2008.

Figure 3

**Total Number of Bachelor's Degrees Awarded, 2006 through 2008
by Number of FTE Faculty
for Departments offering a PhD as the Highest Degree**



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

Virtually all of the PhD-granting departments with more than 45 FTE awarded at least 40 bachelor's degrees between 2006 & 2008.

Survey Methodology

Between March 20 and July 8, 2008, we contacted each of the 763 departments that award at least a bachelor's degree in physics by e-mail, mail, and certified mail. Up to seven follow-up contacts were made for departments that had not yet responded. We received responses from 713 departments (93%). We offer our sincere gratitude to the responding departments. Without your help, we could not track these data.