



## Associate Professors: Time in Rank

Office of Planning and Institutional Assessment  
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### Executive Summary

This report examines time in rank for associate professors at Penn State in two ways: through a snapshot description of associate professors in fall 2006, and through a longitudinal analysis of how people have moved through the system.

#### Snapshot

There were about 900 associate professors at Penn State in fall 2006. They had just under seven years in rank, on average. The figure is somewhat lower for University Park (about six years) than for other campuses (about eight years). Average years in rank is also lower for females (about six years) than for males (about seven years), and lower for minorities (about five years) than non-minorities (about seven years).

#### Longitudinal analysis

Historically, over the past two decades, in any given year about 75 to 100 individuals have been appointed (through promotion or new hiring) to the rank of associate professor at Penn State. About 30 percent of each entering cohort of newly appointed associate professors has subsequently been promoted to the rank of professor by the start of their seventh year. Promotions begin to tail off after that point; nonetheless, close to half of new associate professors are eventually promoted. There is a noticeable plateau after about twelve years or so; relatively few associate professors are promoted after that many years in rank. Males, individuals at University Park, and minority faculty members have had higher rates of promotion from associate professor to professor than their counterparts.

#### Interpretation and implications

We know of no national datasets on associate professors' time in rank, so we are unable to benchmark Penn State's results against data from other research universities. We do know that data exchanges on a different but related matter – tenure success rates for new assistant professors – have suggested that Penn State's experience is typical of the pattern at other American research universities.

The data in this report provide an accurate general picture of associate professors' time in rank, but comparisons across sub-groups should be made with great caution. For example, it is plausible to compare the percentage of male and female associate professors promoted within six years, because the sixth or seventh year seems to be a milestone of sorts in the likelihood that an associate professor will be promoted. That comparison shows that historically a smaller proportion of females (17 percent) than males (29 percent) have been promoted within six years. However, it is just as reasonable to examine average years in rank. And for the current cohort of associate professors, females have lower average years in rank (about six) than males (about seven). So based just on those two bits of information, one could conclude either that males are more likely to be stuck in rank, or that females are.

Thus, this report is presented with a caution about overly simplistic interpretations. The data only portray part of the complex real-world interplay of individual and organizational decisions that affect faculty appointment, tenure, promotion, and career progress.

## Introduction

As part of its mission to be the nation's finest university in the integration of teaching, research, and service, Penn State recognizes the value of retaining faculty. In fact, Penn State's 2006-07 through 2008-09 strategic plan sets a goal of maintaining "the University's momentum in building a faculty of eminence through judicious hiring and tenure decisions, faculty development, appropriate rewards, and proactive retention practices" (Penn State, 2006, n.p.). The University's success in meeting this goal can be assessed in part by examining how well the University retains faculty, including through the promotion process.

The Office of Planning and Institutional Assessment has periodically tabulated and shared data on an important step in the promotion process for faculty members – that of moving from associate professor to professor rank. This report builds upon those prior annual tabulations and supplements a previous University Faculty Senate informational report on time in rank (Penn State, 2003) by examining trends in greater detail, for more faculty members, and over a longer timeframe.

## Background

The time it takes faculty to progress in rank and possible disparities in that progression among sub-groups of faculty have been discussed both nationally and at Penn State. The reasons for these disparities are complex and have been studied in relation to differences among academic disciplines, productivity levels, institutional characteristics, personal and family situations, and other explanatory factors. The promotion experiences of women and minority faculty have long been of interest to Penn State. The Commission for Women was established in 1981 and the Commission on Racial/Ethnic Diversity was established in 1989; an important role for both commissions is to serve as advocates for women and minorities in areas such as recruitment, retention issues, and workplace climate.

Previous research has found that women hold lower ranks than men, when differences in such factors as highest degree level, discipline, and type of institution are taken into account (Perna, 2001; Perna, 2005). These concerns received national attention in 2005, when the presidents of nine leading research universities issued a statement recognizing that female faculty members, especially in science and engineering disciplines, still faced obstacles to their full participation in the academic field (*Inside Higher Ed*, 2005). The American Association of University Professors (AAUP) has identified the lower proportion of female faculty – especially given their higher representation as Ph.D. recipients – as an issue that colleges and universities must address (AAUP, 2006). The AAUP report found that nationally women held just 24 percent of positions at the rank of professor in fall 2005. For comparison, at Penn State in fall 2006, women accounted for 18 percent of positions at that rank.

In 2005, minority faculty members represented 12 percent of full-time instructional professors at all degree-granting institutions in the nation (U.S. Department of Education, 2006). Researchers have found that some minority groups are less likely to hold the professor rank even after controlling for other factors such as educational attainment, experience, and research productivity (Perna, 2001). At Penn State, minority faculty members represented 13 percent of professors in full-time academic standing appointments in fall 2006.

We know of no national datasets on associate professors' time in rank, so we are unable to benchmark Penn State's information on this topic against data from other research universities. We do know that data exchanges on a different but related matter – tenure success rates for new assistant professors – show that Penn State is similar to other Association of American Universities and Big Ten universities in the rates at which it grants tenure (Dooris and Guidos, 2006).

The remainder of this report focuses on Penn State faculty members who were in full-time standing academic appointments as associate professors or professors or the equivalent library ranks. It excludes faculty members in the College of Medicine, Dickinson School of Law and Penn College of Technology.

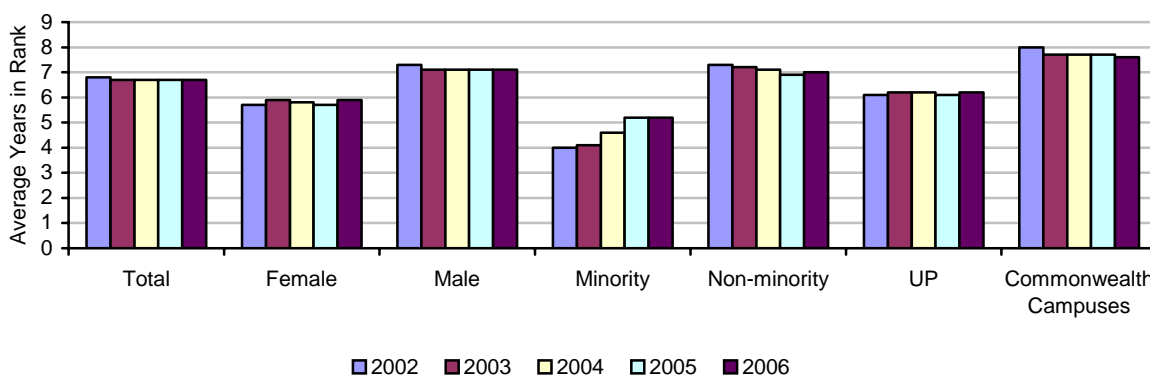
### Average Years in Rank for Associate Professors

Across all campuses at Penn State, between 2002 and 2006, the number of associate professors grew by eight percent, from 858 to 929. Movement in the number of associate professors from year to year of course reflects changes of many sorts: individuals who were newly hired directly into the associate professor rank, promotions from assistant professor, promotions to professor, and attrition such as retirement or other avenues of exit from the University.<sup>1</sup>

Year	# Associate Professors	Average Years in Rank
2002	858	6.8
2003	885	6.7
2004	912	6.7
2005	920	6.7
2006	929	6.7

One way to view time in rank is to look at static snapshots of faculty in the associate professor rank at given points in time. In each year from 2002 through 2006, associate professors had on average been in that rank for about 6.7 years, as shown in Table 1.

**Figure 1 - Associate Professor Average Years in Rank**



Minority associate professors have had and still have a shorter average time in rank compared to non-minority faculty members. Figure 1 shows that over the past five years, minority associate professors' average time in rank rose from 4.0 years to 5.2 years, but some of the variation may simply be due to small numbers in any given year. Female associate professors have had lower average years in rank than males. Compared to colleagues at University Park, Commonwealth Campus associate professors on average have more years in rank. Associate professors at the Commonwealth Campuses had been in rank for an average of 7.6 to 8.0 years, compared to about 6.1 years for University Park associate professors.

### Longitudinal Analysis of Promotion from Associate Professor to Professor

The snapshot view (above) shows years in rank, but it does not indicate why the average years differ across sub-groups. There are many variables at play; average years in rank obviously depends on factors such as past patterns of entry to the rank of associate professor, the timing of departures, the variety of ways in which exits from the rank of associate professor can occur (such as promotion, retirement, or resignation) and so on. Thus, there are several possible explanations for the fact that today Penn State's female associate professors on average have fewer years in rank than men. Perhaps, and most obviously, women are being promoted more quickly. However, perhaps females have fewer years in rank

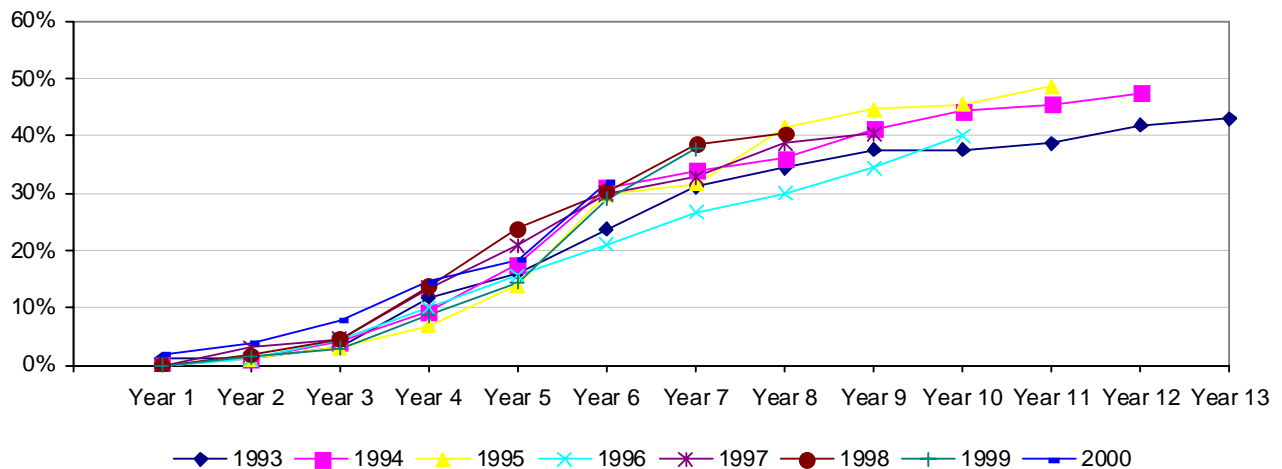
<sup>1</sup> In interpreting the data throughout this report, some caution must be used because, especially for subgroups of the faculty, the numbers are small. Small changes in small numbers can produce large percentage fluctuations.

because smaller numbers of women than men reached the associate professor rank years ago, or maybe women have been more likely to resign after only a couple of years as associate professors than men.

To supplement the static approach, it is instructive to examine movement from associate professor to professor. Although the flow analysis that follows is a bit more complicated than the preceding static snapshot view, it is probably also more powerful.

Historically, in any given year about 75 to 100 individuals have entered the rank of associate professor (either as promotions or as new hires) at Penn State. Figure 2 represents data for the eight cohorts of associate professors who were newly appointed to that rank from 1993 through 2000. Each cohort was tracked to determine the cumulative percent who were later promoted to professor. For example, the new associate professors from 1993 were tracked for 13 years through 2006, and 43 percent had been promoted to professor. Meanwhile, the faculty who were new associate professors in 2000 were tracked for six years through 2006, and 32 percent had been promoted.

**Figure 2 - Cumulative Percent of Associate Professors New to Rank in 1993-2000 Who Were Promoted to Professor**



Not included in this report, but examined as background for the analysis, are longer-term historical data for new associate professor appointments going back as far as 1983. Those data cover as much as 23 years. For the purposes of this analysis it is more useful and interesting to cut off the analysis at about 12 or 13 years because the curves are fairly flat after that point.

As Figure 2 shows, about one-third of each entering cohort of newly appointed associate professors has been promoted to the rank of professor by the start of their seventh year. Although the likelihood of promotion begins to plateau after about the seventh year, almost half are promoted within about 12 to 13 years.

Because it appears that the sixth or seventh year is a milestone of sorts, after which the likelihood of promotion begins to level off, it is plausible to take a more detailed look at demographic data at that point in individuals' careers. Table 2 allows that. It combines the five most recent cohorts of newly appointed associate professors for which a six-year measurement is possible (with fall 2006 as the latest feasible ending point). As shown, for these cohorts, historically, a smaller proportion of females (17 percent) than males (29 percent) have been promoted within six years. A smaller proportion of associate professors were promoted at the Commonwealth Campus (13 percent) than at University Park (31 percent). A slightly higher proportion of minority than non-minority associate professors were promoted, although that percentage difference is small (27 percent compared to 25 percent). Table 2A extends this analysis to the

**Table 2. Status after Six Years for Associate Professors New to Rank, 1996-2000 Cohorts Combined**

	N	Assoc Professor		Professor at PSU		Promoted but left PSU		Other	
		#	%	#	%	#	%	#	%
<b>Total</b>	438	238	54%	113	26%	12	3%	75	17%
<b>Female</b>	127	76	60%	22	17%	3	2%	26	20%
<b>Male</b>	311	162	52%	91	29%	9	3%	49	16%
<b>Minority</b>	77	41	53%	21	27%	4	5%	11	14%
<b>Non-minority</b>	361	197	55%	92	25%	8	2%	64	18%
<b>University Park</b>	304	149	49%	93	31%	11	4%	51	17%
<b>Commonwealth Campuses</b>	126	84	67%	17	13%	1	1%	24	19%
<b>Great Valley</b>	8	5	63%	3	38%	0	0%	0	0%

Includes full-time academic standing appointment associate professors and equivalent library ranks. Does not include Hershey, Dickinson or Penn College of Technology. "Other" status includes, for example, individuals who were not promoted and are no longer at Penn State, and those who are still at the university but who are no longer in a standing full-time academic appointment.

**Table 2A. Status after Seven Years for Associate Professors New to Rank, 1996-2000 Cohorts Combined**

	N	Assoc Professor		Professor at PSU		Promoted but left PSU		Other	
		#	%	#	%	#	%	#	%
<b>Total</b>	438	201	46%	141	32%	14	3%	82	19%
<b>Female</b>	127	66	52%	29	23%	4	3%	28	22%
<b>Male</b>	311	135	43%	112	36%	10	3%	54	17%
<b>Minority</b>	77	30	39%	28	36%	5	6%	14	18%
<b>Non-minority</b>	361	171	47%	113	31%	9	2%	68	19%
<b>University Park</b>	304	120	39%	115	38%	12	4%	57	19%
<b>Commonwealth Campuses</b>	126	77	61%	23	18%	2	2%	24	19%
<b>Great Valley</b>	8	4	50%	3	38%	0	0%	1	13%

Includes full-time academic standing appointment associate professors and equivalent library ranks. Does not include Hershey, Dickinson or Penn College of Technology. "Other" status includes, for example, individuals who were not promoted and are no longer at Penn State, and those who are still at the university but who are no longer in a standing full-time academic appointment.

seventh year. By the seventh year, almost one-third of all associate professors had been promoted to the rank of professor. The differences noted in the sixth year continued: more males than females had been promoted to the rank of professor and minority faculty members had slightly higher promotion rates than non-minority faculty.

### **Conclusions, Interpretation and Implications**

Promotion and retention are important elements in Penn State's long-term commitment to maintain and enhance the quality of teaching and research at the University. The data show that:

- The number of faculty in the associate professor rank grew from 858 to 929 between 2002 and 2006. The average time in rank for associate professors during each of these five years was very steady at about 6.7 years.
- Minority and female associate professors had a shorter average time in rank than their non-minority and male colleagues, while associate professors at the Commonwealth Campuses had a longer average time in rank than their University Park counterparts.
- Of faculty members who were new to the associate professor rank, almost half are promoted within thirteen years. The majority of these promotions occur within seven years of entering the rank. Minority associate professors, male associate professors, and University Park associate professors were promoted at a higher rates than their counterparts
- For associate professors who have not been promoted in the first six or seven years, the likelihood of promotion gradually tails off. Relatively few faculty members who have held the associate professor rank for more than twelve years are subsequently promoted.

The information in this report provides an accurate general picture of associate professor's time in rank, but comparisons across sub-groups should be made with great caution. The report is presented with a caution about overly simplistic interpretations. The available data only portray part of the complex real-world interplay of many factors – individual decisions, disciplinary differences, and location or organizational realities, and more – that can affect faculty appointment, tenure, promotion, and career progression.

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