An Examination of Departure Trends and Tenure Rates among Pre-Tenure Faculty: A Ten Year Cohort Study (1996 – 2005)

Tracey Cameron, Graduate Assistant, Provost's Office Patricia Hyer, Associate Provost for Academic Administration

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The environmental landscape of American higher education is undergoing a major transformation. With the increased minority enrollment and impending exodus of retiring faculty, recruiting and attracting a diverse and excellent professoriate is more important than ever before (Van Ummersen, 2005). Recognizing the critical role that a diverse faculty plays in the collegiate experience of students from underrepresented groups, colleges and universities have focused increased attention on hiring women and ethnic/cultural minorities (Smith, Turner, Osei-Kofi, & Richards, 2004). These efforts have resulted in the gradual increase of traditionally underrepresented faculty during the past decades.

While the availability of doctorates from more diverse backgrounds has fueled progress in faculty hiring, lower retention rates of women and minorities reduce the rate of progress in diversifying the tenured faculty workforce. Some turnover, whether voluntary or involuntary, is expected. It is necessary in instances of poor teaching performance or low research productivity. It is also a natural consequence of professional advancement (Xu, 2008; Zhou & Volkwein, 2004). Excessive turnover, however, yields undesirable outcomes. Turnover can influence departmental culture, disrupting progress and resulting in the redistribution of teaching loads, advising assignments, and committee tasks. It also presents a financial burden to the institution, resulting in lost return on investment (Xu, 2008). While turnover is inevitable, understanding the factors that contribute to unwanted losses and how these factors affect a faculty member's decision to depart, warrant significant attention (Xu, 2008). The ongoing monitoring of recruitment and retention practices is one step towards ensuring faculty success and institutional excellence.

Purpose of the Study

The purpose of this study was twofold: a) to analyze cohorts of new, tenure-track assistant professors to determine how many faculty members remained at Virginia Tech throughout the probationary period, and whether they were successful at achieving tenure and promotion to the rank of associate professors; and b) to understand the circumstances of why pre-tenure faculty left Virginia Tech prior to their tenure review date. This study sought to answer the following three questions:

- 1) How many pre-tenure faculty members are successful at achieving tenure and promotion to associate?
- 2) Why do pre-tenure faculty members depart during the probationary period?
- 3) How many pre-tenure faculty members "stop the clock" and are successful at achieving tenure?

Context of Study

This report investigates voluntary departure among pre-tenure faculty, concentrating specifically on gender and ethnicity/race patterns. Understanding why faculty members voluntarily leave the institution prior to the mandatory tenure review period is the primary focus of this inquiry. For purposes of this study, "voluntary" refers to departures initiated by the faculty member; tenure denials or non-reappointments, death, or retirements are not included in the voluntary departure groups. A previous institutional study (Amelink & Hyer, n.a.)

investigated trends relative to university-wide departure; however, this study focused on dynamics within annual cohorts. Analysis by cohort can reveal important institutional or external factors affecting the individual decisions, such as implementation of new work-life policies, or the effects of state budget reductions.

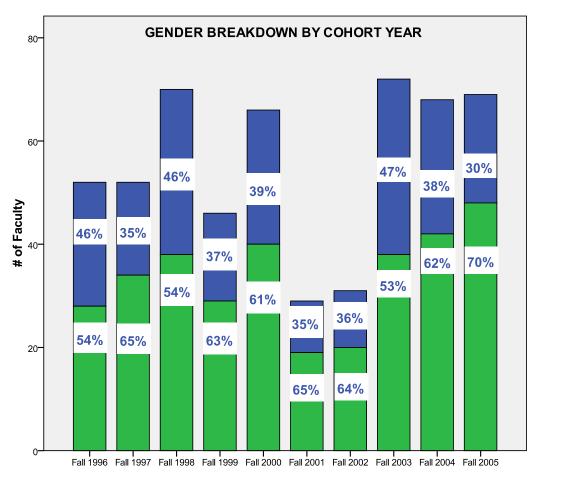
The primary data used for this study were obtained from the Office of Institutional Research. Data consists of 555 new, tenure-track assistant professors who entered Virginia Tech during the years 1996-2005. Faculty members hired since Fall 2005 were not included since most would not have completed their six-year probationary period. The ten-year span of study consisted of ten cohorts. All new assistant professors hired between the prior October 1st and September 30th of the cohort year were considered part of the cohort. For example, the 52 assistant professors in the Fall 1996 cohort were appointed between October 1, 1995 and September 30, 1996 (fall census date); most actually began employment with Fall term 1996. The progress of individuals in the cohort was tracked throughout their probationary periods. The probationary period begins at the time of initial hire and ends when tenure and promotion are granted or denied. This is typically a six-year period. Table 1 illustrates the total number of entering tenure-track assistant professors by year. The number of new tenure-track faculty members hired during Fall 2001 and Fall 2002 was significantly less due to severe state budget reductions.

Cohort Year	Total
Fall 1996	52
Fall 1997	52
Fall 1998	70
Fall 1999	46
Fall 2000	66
Fall 2001	29
Fall 2002	31
Fall 2003	72
Fall 2004	68
Fall 2005	69
N	555

Table 1. Entering Tenure-Track Assistant Professor Cohorts (N = 555)

The representation of women doctoral recipients has grown tremendously in the last 20 years. In 1978, women received 27% of all doctorates (NSF, 2009). This percentage increased to 46% in 2008 (NSF, 2009). Nationally, women received just above 40% of all research doctoral degrees granted in years 1995-2008 (NSF, 2009). The percentage of women hired at Virginia Tech (39.4%) during the years 1996-2005 is relatively consistent with the national average of research doctoral degrees earned by women. However the percentage of women in individual cohort years fluctuates between 30% and 47% (see the Appendix, Table A). In only three of the ten cohorts (e.g. 1997, 1998, and 2003) has the percentage of women been at or above 40%.

Figure 1 illustrates the breakdown of entering tenure-track faculty cohorts by gender. Men make up 61% (n=336) of new, tenure-track faculty while women make up 39% (n=219). However, some years the proportion of men hired was significantly higher than the overall average of 61% (e.g. 1997, 2001, 2002, 2004, and 2005).





Overall, Caucasian faculty make up 74% of newly hired assistant professors. Asian/Pacific Islanders were 15% of the faculty hired during the study period. The proportions of Black (6%), Hispanic (4%) and American Indian (1%) hires are much smaller, but generally reflect availability in the doctoral pool. For example, doctoral degrees awarded to U.S. citizens or permanent residents in 2008 were as follows: .4% to American Indians, 8.3% to Asians (but 17% in engineering), 6.6% to Blacks (but 3.8% in engineering), and 5.7% to Hispanics (4.5% in engineering) (NSF, 2009).

GENDER

Female

Ethnicity/ Race	Cau	casian	B	Black		Asian/Pacific Islander		panic	American Indian		Total
Cohort Year	n	%	n	%	n	%	n	%	n	%	N
Fall 1996	37	71.2	4	7.7	7	13.5	2	3.8	2	3.8	52
Fall 1997	43	82.7	1	1.9	5	9.6	3	5.8	0	.0	52
Fall 1998	58	82.9	3	4.3	8	11.4	0	.0	1	1.4	70
Fall 1999	35	76.1	5	10.9	4	8.7	2	4.3	0	.0	46
Fall 2000	53	80.3	4	6.1	5	7.6	3	4.5	1	1.5	66
Fall 2001	19	65.5	2	6.9	6	20.7	2	6.9	0	.0	29
Fall 2002	20	64.5	1	3.2	9	29.0	1	3.2	0	.0	30
Fall 2003	48	66.7	4	5.6	15	20.8	5	6.9	0	.0	72
Fall 2004	45	66.2	6	8.8	15	22.1	2	2.9	0	.0	68
Fall 2005	55	79.7	3	4.3	10	14.5	1	1.4	0	.0	69
Total	413	74.4	33	5.9	84	15.1	21	3.8	4	.7	555

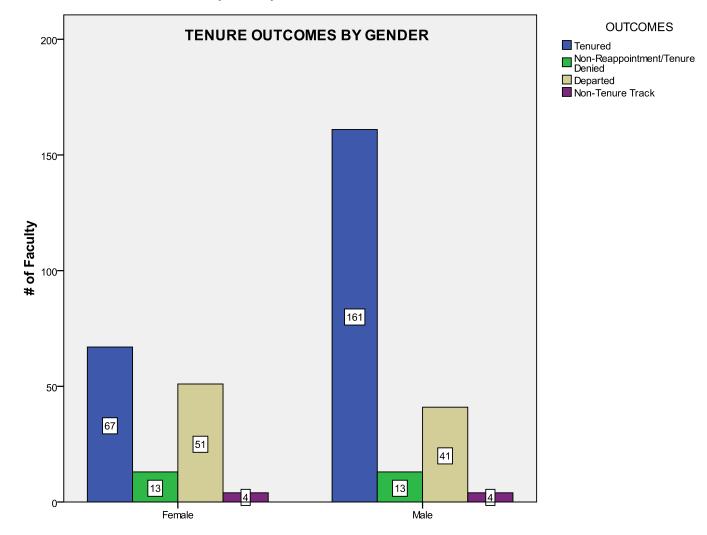
Table 2. Entering Tenure-Track Faculty Cohorts by Race (N=555)

For purposes of this study, we were particularly interested in the progress of faculty members who had reached the mandatory review period. As of September 2009, 354 out of the 555 faculty hired had reached their mandatory review year or were considered for tenure in advance of the mandatory year. Outcomes for these faculty members are indicated in Table 3. Overall, 64% received tenure. Non-reappointments (n = 10) and tenure denials (n=16) were merged into one category; 7% were denied tenure or received formal notification of non-reappointment. Ninety-two (26%) voluntarily departed. Eight (2%) faculty transitioned off the tenure-track into other instructional or administrative positions at Virginia Tech. With the exception of one cohort (Fall 2000), tenure was achieved by about two-thirds of the faculty members.

Status	Ter	nured	Non Voluntary Reappointment/ Departure Tenure Denied			n- Tenure Track	Total		
Cohort Year	n	%	п	%	п	%	n	%	N
Fall 1996	31	59.6	4	7.7	16	30.8	1	1.9	52
Fall 1997	37	71.2	4	7.7	11	21.2	0	.0	52
Fall 1998	46	65.7	6	8.6	18	25.7	0	.0	70
Fall 1999	31	67.4	4	8.7	9	19.6	2	4.3	46
Fall 2000	30	46.9	5	7.8	27	42.2	2	3.1	64
Fall 2001	19	65.5	3	10.3	6	20.7	1	3.4	29
Fall 2002	18	78.3	0	.0	3	13.0	2	8.7	23
*Fall 2003	8	.0	0	.0	2	20.0	0	.0	10
*Fall 2004	4	.0	0	.0	0	0.0	0	.0	4
*Fall 2005	4	.0	0	.0	0	0.0	0	.0	4
Total	228	64.4	26	7.3	92	26.0	8	2.3	354

Table 3. Status of Faculty Who Have Been Granted Tenure by Cohort Year (N=354)

* This table reflects the tenure status of faculty members who reached their mandatory review year or received an early review. Percentages are not available for cohort years 2003-2005 because tenure review for the majority of these faculty members is still pending.



Outcomes for Women and Minority Faculty Members

Figure 2. Tenure Outcomes by Gender (N=354)

Figure 2 is a visual illustration of tenure outcomes by gender. Of the 135 women who had reached the mandatory review period, 50% (n=67) received tenure, 10% (n=13) were not reappointed or denied tenure, and 38% (n=51) departed voluntarily. In comparison, 74% (n=161) of the men who reached the mandatory review period received tenure. Six percent (n=13) were not reappointed or denied tenure, and 19% (n=41) departed voluntarily. Of particular concern is the significantly higher departure rate for women, approximately twice the rate of men. A small percentage of both male (1.8%) and female (3%) faculty members transitioned off the tenure track at some point during the six-year period (See Table 4.).

Status	Ten	nured	Non-Reappo Tenure L		ıntary arture	Ten	on- ture ack	Total	
Gender	n	%	п	п	%	N	%	N	
Female	67	49.6	13	9.6	51	37.8	4	3.0	135
Male	161	73.5	13 5.9		41	18.7	4	1.8	219
Total	228	64.4	26	7.3	92	26.0	8	2.3	354

Table 4. Tenure Status by Gender (N=354)

A chi-square test determined that there was a statistically significant relationship between gender and tenure achievement (one degree of freedom = 20.786, p = 0.000). Men are more likely to receive tenure than women; women are more likely to be denied tenure or receive non-reappointment, voluntarily depart, or transfer to a non-tenure track position.

Regardless of ethnicity/race (Table 5), the vast majority of faculty who were actually reviewed for tenure received a favorable outcome. The number of Black and Hispanic faculty who left involuntarily because of non-reappointment or denial of tenure is relatively small. A more concerning disparity appears to be the rate at which underrepresented faculty members leave the university before the tenure review. Reasons associated with these departures will be discussed below.

Status	Ten	ured	-	ppointment/ e Denied		untary arture	1	Non- Fenure Track	Total
Ethnicity/Race	N	%	п	%	п	%	n	%	N
American Indian	3	75.0	0	.0	1	25.0	0	.0	4
Asian/Pacific	30	69.8	5	11.6	7	16.3	1	2.3	43
Islander									
Black	9	47.4	2	10.5	7	36.8	1	5.3	19
Caucasian	176	64.5	17	6.2	75	27.5	5	1.8	273
Hispanic	10	66.7	2	13.3	2	13.3	1	6.7	15
Total	228	64.4	26	7.3	92	26.0	8	2.3	354

Table 5. Tenure Status by Ethnicity/Race (N=354)

Understanding why faculty voluntarily departed prior to the mandatory review period was of particular importance to this inquiry. Table 6 documents the number of faculty members who departed the institution at their own discretion. The attrition rate of earlier cohorts (Fall 1996 through Fall 2001) ranged between 19 and 41 percent, with the Fall 2000 cohort experiencing the most significant loss. Factors that contributed to this decline are covered in Table 7.

Cohort Year	Total Departures	Total in Cohort	%
Fall 1996	16	52	31.0
Fall 1997	11	52	21.0
Fall 1998	18	70	26.0
Fall 1999	9	46	20.0
Fall 2000	27	66	41.0
Fall 2001	6	29	21.0
Fall 2002	6	31	19.0
Fall 2003	18	72	25.0
Fall 2004	3	68	4.0
Fall 2005	1	69	1.0
Total	115	555	20.7

Table 6. Voluntary Departures by Cohort Year (N=115)

Due to limited documentation of reasons for employee separation in the Human Resources system, information was solicited from departmental representatives (i.e. department heads, administrative assistants). In most cases, representatives were able to provide a fairly detailed explanation of the reasons for resignation, at least from the department's viewpoint and understanding. The lack of first hand information from the departing faculty member is an obvious limitation of this study. (The university conducted an exit survey of departing faculty members between 2002 and 2004; these results are available in a separate study which does provide information directly from faculty members.)

Departmental representatives were presented seven possible reasons for departure based on previous studies conducted by the Provost's Office: dissatisfied (i.e. poor institutional fit, research space allocation and availability of support for research activities, poor climate, unhappy at VT or in department); left academe; negative tenure prospect; spouse/family; significant salary increase/attractive offer elsewhere; research expectations; multiple reasons; and other. Departmental representatives provided information on 100 of the 115 faculty members who left voluntarily (Table 7). Overall, the most frequent reasons for departure were due to significant salary increase/attractive offer elsewhere (23.5%), spousal/family concerns (17.4%), a negative tenure prospect (15.7%), and multiple reasons (14.8%). Cases were coded "multiple" in situations where one reason for departure was not predominant. For example, a faculty member may have departed due to the desire to be closer to a partner (spouse/family). But the departure may have been instigated by a more attractive offer at an institution closer in proximity to that partner. Lastly, women are more likely than men to depart due to spousal/family concerns (21.0% of women compared to 13% for men).

Gender	Fe	male	M	lale	Total
Reasons for Departure	n	%	п	%	N
Dissatisfied	4	6.5	2	3.8	6
Left Academe	1	1.6	3	5.7	4
Negative Tenure Prospect	8	12.9	10	18.9	18
Spouse/Family	13	21.0	7	13.2	20
Significant Salary Increase/Attractive Offer					
Elsewhere	14	22.6	13	24.5	27
Research Expectation	1	1.6	0	.0	1
Transferred to Other Agency	2	3.2	2	3.8	4
Multiple	7	11.3	10	18.9	17
Other	3	4.8	0	.0	3
No Information Available	9	14.5	6	11.3	15
Total	62	100	53	100	115

Table 7. Reasons for Voluntary Departure by Gender as Reported by Department Heads (N=115)

The table below illustrates reasons for voluntary departures by ethnicity/race. Given the small numbers of underrepresented faculty, trends are more difficult to determine. The reasons varied and often more than one factor was important.

					Asian	/Pacific			Am	erican	
Ethnicity	Cau	casian	Black		Isl	ander	His	panic	In	dian	Total
Reasons for Departure	п	%	п	%	n	%	п	%	п	%	Ν
Dissatisfied	5	5.5	1	11.1	0	.0	0	.0	0	.0	6
Left Academe	3	3.3	0	.0	1	9.1	0	.0	0	.0	4
Negative Tenure											
Prospect	14	15.6	2	22.2	2	18.2	0	.0	0	.0	18
Spouse/Family	16	17.9	1	11.1	3	27.3	0	.0	0	.0	20
Sign. Salary Increase/											
Attractive Offer											
Elsewhere	26	28.9	0	.0	0	.0	0	.0	1	100.0	27
Research Expectation	0	.0	0	.0	0	.0	1	25.0	0	.0	1
Transferred to Other											
Agency	4	4.4	0	.0	0	.0	0	.0	0	.0	4
Multiple	10	11.1	3	33.3	3	27.3	1	25.0	0	.0	17
Other	3	3.3	0	.0	0	.0	0	.0	0	.0	3
Information											
Unavailable	9	10.0	2	22.2	2	18.2	2	50.0	0	.0	15
Total	90	100.0	9	100.0	11	100.0	4	100.0	1	100.0	115

Table 8. Reasons for Departure by Ethnicity/Race as Reported by Department Heads (N=115)

Usage and Tenure Outcomes for the Stop-the-Clock Policy

It is no surprise that issues of work/life balance continue to create barriers for faculty, ultimately influencing their departure from the university. A major priority for the AdvanceVT project was assisting faculty members in managing these challenges through the creation of work/life policies and programs such as stop-the-clock. In general, the usage of the stop-the clock policy has risen over the course of the ten year study period (See Table 9).

Cohort Year	Total	% of
		Cohort
Fall 1996	3	5.8
Fall 1997	7	13.5
Fall 1998	11	15.7
Fall 1999	7	15.2
Fall 2000	14	21.2
Fall 2001	7	24.1
Fall 2002	9	29.0
Fall 2003	22	30.6
Fall 2004	20	29.4
Fall 2005	19	27.5

Table 9. Stop-the-Clock Usage by Cohort Year (N=119)

The policy was significantly revised effective Fall 2006 to allow an automatic probationary period extension for either parent at the time of birth. The policy change has greatly increased the number of men who stop the tenure clock for new parenthood (See Figure 3). The revised policy also clarified the non-personal circumstances that might warrant an extension of the probationary period, such as significant delays in laboratory renovation and acquisition of research equipment.

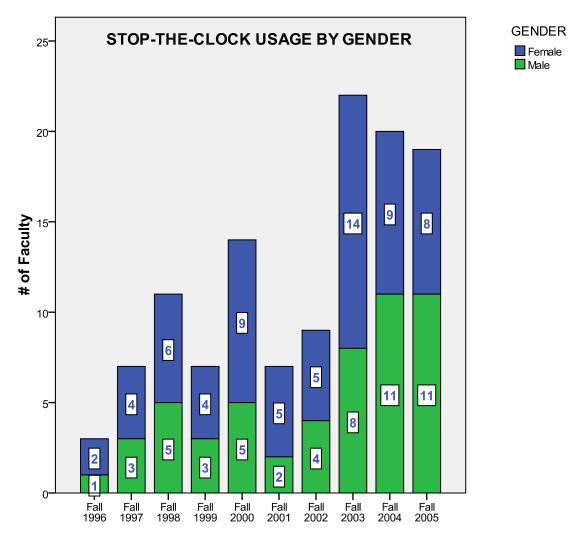


Figure 3. Stop-the-Clock Usage by Gender (N=555)

The table below shows the tenure outcomes of individuals who have stopped the tenure clock. A small percentage (5.0%) of those who have reached the mandatory review period were denied tenure. It is possible that the revised policies will result in lower female departure rates, although this conclusion is premature.

Status		ured	Non Reappointment/		11	luntary	Pena Pena		Total	
~~~~~			Tenure Denied			parture				
Gender	п	%	п	%		%	п	%	N	%
Female	17	25.8	4	6.1	14	21.2	31	47.0	66	55.5
Male	10	18.9	2	3.7	9	17.0	32	60.4	53	44.5
Total	27	22.7	6	5.0	23	<i>19.3</i>	63	52.9	119	100.0

Table 10. Tenure Status of Faculty Members who Stopped the Tenure Clock by Gender (N=119)

Key Findings

- The hiring of women and underrepresented ethnic/racial minority groups at Virginia Tech approximates availability in the doctoral pool, but has led to only very modest changes in the overall composition of the tenured and tenure-track faculty.
- Overall, sixty-four percent (64%) of those hired who reached their mandatory tenure review date, or came up early, received tenure. Male hires are much more likely than women to achieve tenure and promotion largely because of a much higher departure rate for women prior to the tenure review. The majority of new faculty from underrepresented racial and ethnic groups also received tenure when reviewed, but a higher departure rate for Black faculty during this time period attenuates the rate of tenure for this group. Of those who successfully received tenure, a small proportion (5%) have subsequently departed (to date).
- There is a significant gender disparity with respect to who voluntarily departs before the mandatory review date. Women (38%) are more likely to leave the institution when compared to their male counterparts (19%).
- Of the four ethnic/racial minority groups, Asian/Pacific Islanders (16%) are least likely to depart prior to the mandatory review date; Black faculty (37%) are most likely to leave the institution prior to the mandatory review date.
- The most frequently cited reason for leaving was a significant/attractive offer elsewhere (23.5% of all voluntary departures). Spouse/family obligations are also frequently cited as reasons for departure for women (21% of women). The prospect of a negative tenure decision also prompted some faculty members to leave prior to a possible involuntary termination (15% of all voluntary departures). Black faculty members left for a variety, and sometimes multiple, of reasons.
- Issues of work/life balance influence departure decisions. The increased use of the stop-the-clock policy by both men and women demonstrates their efforts to better balance the expectations for achieving tenure with their personal or family lives.

# Conclusion

The purpose of this study was to examine cohorts of new, tenure-track assistant professors to determine promotion success and to also understand why faculty voluntarily depart prior to the mandatory review period. The results of this inquiry are consistent with a previous studies conducted at Virginia Tech (Amelink & Hyer, n.a.; Hyer & Amelink, 2006). The recruitment and retention of women and ethnic/racial minority faculty members continue to present challenges for the institution as a whole and to our commitment to inclusive excellence. While these issues are not unique to Virginia Tech, it is critical to address disparities that lead to lost talent, unrealized gains from institutional investments, and the human cost of career disruption and/or relocation.

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Gender	Fem	ale	M	ale	Total
Cohort Year	п	%	n	%	N
Fall 1996	24	46.2	28	53.8	52
Fall 1997	18	34.6	34	65.4	52
Fall 1998	32	45.7	38	54.3	70
Fall 1999	17	37.0	29	63.0	46
Fall 2000	26	39.4	40	60.6	66
Fall 2001	10	34.5	19	65.5	29
Fall 2002	11	35.5	20	64.5	31
Fall 2003	34	47.2	38	52.8	72
Fall 2004	26	38.2	42	61.8	68
Fall 2005	21	30.4	48	69.6	69
Total	219	39.4	336	60.6	555

Appendix Table A Entering Tenure-Track Faculty Cohorts by Gender (N=555)

Table B. Tenure Status by Cohort Year (N=555)

Status	Ten	ured	-	enure ied/Non	Dep	arted		enure nding		'on- nure	Total
			Reappointment							rack	
Cohort Year	п	%	n	%	n	%	п	%	п	%	п
Fall 1996	31	59.6	4	7.7	16	30.8	0	0.0	1	1.9	52
Fall 1997	37	71.2	4	7.7	11	21.2	0	0.0	0	0.0	52
Fall 1998	46	65.7	6	8.6	18	25.7	0	0.0	0	0.0	70
Fall 1999	31	67.4	4	8.7	9	19.6	0	0.0	2	4.3	46
Fall 2000	30	45.5	5	7.6	27	40.9	1	1.5	3	4.5	66
Fall 2001	19	65.5	3	10.3	6	20.7	0	0.0	1	3.4	29
Fall 2002	18	58.4	0	0.0	6	19.4	5	16.1	2	6.5	31
Fall 2003	8	11.1	0	0.0	18	25.0	46	63.9	0	0.0	72
Fall 2004	4	5.9	0	0.0	3	4.4	61	89.7	0	0.0	68
Fall 2005	4	5.8	0	0.0	1	1.4	64	92.8	0	0.0	69
Total	228	41.1	26	4.7	115	20.7	177	31.9	9	1.6	555

Table C. Tenure Status of Faculty who Stopped the Clock by Ethnicity/Race (N=119)

Status	Tenured		Non Reappointment/ Tenure Denied		Voluntary Departure		Pending		Total
Ethnicity/Race	п	%	п	%	n	%	n	%	N
Asian/Pacific									
Islander	0	.0	1	7.1	2	14.3	11	78.6	14
Black	1	10.0	1	10.0	4	40.0	4	40.0	10
Caucasian	24	27.3	3	3.4	16	18.2	45	51.1	88
Hispanic	2	28.6	1	14.3	1	14.3	3	42.9	7
Total	27	22.7	6	5.0	23	19.3	63	52.9	119