

# **A Report on Some Statistical Patterns Associated with the Tenure and Promotion Process at Stetson University**

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In this report we investigated some statistical patterns of positive and negative outcomes associated with the tenure and promotion process at Stetson University. We looked at five different types of outcomes in the career process. These outcomes are completely determined or strongly influenced by the tenure and promotion process. These outcomes included faculty retention, tenure success, AA promotion success, AF promotion success, and promotion stall. Each of these terms is defined below.

**Faculty Retention**—Any faculty member that was still a faculty member at Stetson eight years after entering a tenure track position was considered successfully retained. We tracked all faculty members that were hired in a tenure-track faculty position from 1985 to the present. Any faculty member that left Stetson before eight years, for whatever reason, was considered not retained. Often we will discuss “% Retention”, which is the percentage of all initially hired tenure-track assistant professors in a particular group that were still at Stetson eight years after their date of hire in a tenure track position.

**Tenure success**—A faculty member that applied for tenure and was granted tenured through the tenure and promotion process (but not the appeals process) was considered successful. Only faculty that applied for tenure in 1985 to the present were considered in this analysis. Percent tenure success is a measure of the percentage of all people in a group that applied for tenure that were successful.

**AA (Assistant to Associate) Promotion success**—Faculty members that were successful in their initial application for promotion from assistant professor to associate professor were considered to have AA promotion success. Only faculty that applied for tenure in 1985 to the present were considered in this analysis

**AF (Associate to Full) Promotion success**—Faculty members that were successful in their initial application for promotion from associate professor to full professor were considered to have AF Promotion success. Only faculty that applied for tenure in 1985 to the present were considered in this analysis.

**AF Promotion delay**—Those faculty that did not obtain the rank of full professor nine years after they were promoted to associate professor were considered to exhibit AF promotion delay. We looked at all current Stetson faculty that were hired after 1980 in determining the frequency of AF promotion delay.

In our analysis we looked at how each of the above measures of success was associated with (but not necessarily influenced by) membership in different groups of faculty. These faculty groups were categorized by academic units (School and Division within the College of Arts & sciences), gender, ALANA status, and home department size. The criteria for inclusion in each of these categories are discussed below.

**School**—We recognized three schools, the School of Business Administration (SOBA), the College of Arts and Sciences (CAS), and the School of Music (SOM) in our analysis. We included the Library faculty in the CAS (even though they are not part of that school) because they are most similar in CAS faculty in their training and we would rather not exclude them from this analysis.

**Division**—For the College of Arts & Sciences and Library faculty we recognize five “divisions”. These divisions include:

**Education**—This division included the departments of Counsel Education, Teacher Education, and Sports Management

**Humanities**—This division included the departments of Art, Communication Studies, English, Modern Languages, Philosophy, Religious Studies, and Theatre Arts

**Library**

**Natural Sciences**—This division included the departments of Biology, Chemistry, Geography & Environmental Science, Integrative Health Sciences, Mathematic & Computer Science, and Physics

**Social Sciences**—This division included the departments of American Studies, Economics, Political Science, Psychology, Sociology & Anthropology

Several programs have shifted their designation in the last decade. For example, the Geography Department was in the Social Sciences and is now the department of Geography and Environmental Science. We placed these departments in their current division in the analysis.

**ALANA**—Following the advice of the campus diversity advisor, faculty with significant African, Latin American, Asian, or Native American ancestry were considered ALANA faculty. Faculty from Asian Minor were not considered ALANA faculty.

**Gender**—We used two gender designations, male and female.

**Department Size**—Departments with four or fewer tenure-track faculty in 2007 were considered small, departments with four to seven faculty were considered mid-sized departments, and departments with eight or more faculty were considered large

departments. We treated the Communications Studies and Theatre Arts Department as two separate departments given the lack of similarity of these two disciplines. We analyzed department size only for the CAS.

In this analysis we attempted to gather data on all current Stetson faculty members and all the people that were hired into a tenure track position since 1985. The statistical tests used ( $\chi^2$  tests of independence and Fisher Exact tests) are those typically employed for counts or frequency data. We think these analyses can reveal situations that require further investigation. We did not, however, only use statistical significance to determine when we thought a situation merited further analysis. Some analyses, for example tests of independence for faculty retention among the three schools, have moderate sample sizes for each group. Other analyses, particularly those involving ALANA faculty or divisions within the CAS, often have much lower sample size and, therefore, have far less power in detecting statistically significant results. To use statistical significance as the only criterion for determining areas of concern would lead to ignoring problems among groups with low numbers. When sample size was a concern we looked at both the magnitude of the differences among faculty groups (as well as p-values) to determine if a situation should receive further investigation.

## RESULTS

*Patterns Associated with School.* There were several differences observed among the three Deland Campus schools. There was a trend towards lower faculty retention in the CAS than in the SOBA or SOM (Table 1;  $\chi^2 = 4.14$ , d.f. = 2,  $p = 0.13$ ). Tenure success varied little among the three schools and there was no significant association between school and success ( $\chi^2 = 1.83$ , d.f. = 2,  $p = 0.40$ ).

Table 1. Statistical Patterns of faculty retention and tenure success by school and division within the CAS.

Academic Unit	Faculty Retention			Tenure Success		
	# Retained	# not Retained	% Retained	# Successful	# Not Successful	% Successful
University	118	41	74.2	133	7	95.0
CAS	78	34	69.6	90	5	94.7
SOBA	23	4	85.0	21	2	91.3
SOM	17	3	85.0	22	0	100.0
Education	10	4	71.4	13	0	100.0
Humanities	29	13	69.1	32	2	94.1
Library	7	1	87.5	7	0	100.0
Natural Sci.	19	15	55.9	24	3	88.9
Social Sci.	13	1	92.9	14	0	100.0

There was a significant association between school and AA promotion success (Table 2;  $\chi^2 = 7.384$ , d.f. = 2,  $p = 0.025$ ). In their initial application to promotion to associate

professor a CAS faculty member was over four times as likely not to be promoted as a SOBA or SOM faculty member. The CAS faculty also had lower success rates in term of AF promotion. A CAS faculty member was 50% more likely not to be promoted to full professor as a SOBA faculty member and nearly three times as likely not to be promoted as a SOM faculty member. The low samples sizes and magnitude of these differences resulted in no statistically significant difference among schools in the frequency of AF promotions success ( $\chi^2 = 1.22$ , d.f. = 2,  $p = 0.53$ ).

Table 2. Statistical Patterns of AA promotion and AF promotion by School and Division within the CAS.

Academic Unit	Assistant to Associate Promotion			Associate to Full Promotion		
	# Successful	# Not Successful	% Successful	# Successful	# Not Successful	% Successful
University	114	24	82.6	61	8	88.4
CAS	75	22	77.3	34	6	85.0
SOBA	19	1	95.0	18	1	94.7
SOM	20	1	95.2	9	1	90.0
Education	11	2	84.6	4	2	66.7
Humanities	26	7	78.8	16	1	94.1
Library	6	1	85.7	1	1	50.0
Natural Sci.	20	9	69.0	8	2	80.0
Social Sci.	12	3	80.0	5	0	100.0

AF promotion delay was much more frequent among SOM faculty than among either CAS or SOBA faculty (Table 3). While this difference was large, the low number of SOM faculty resulted in there being no statistically significant difference between the schools in the frequency of AF promotion delay ( $\chi^2 = 2.17$ , d.f. = 2,  $p = 0.34$ ).

Table 3. Statistical Patterns of promotion delay by school and division within the CAS.

Academic Unit	AF Promotion Delay		
	# without Promotion Delay	# with Promotion Delay	% Successful
University	48	45	51.6
CAS	30	29	50.8
SOBA	10	13	56.5
SOM	3	8	27.3
Education	7	3	30.0
Humanities	16	7	69.6
Library	1	3	25.0
Natural Sci.	6	6	50.0
Social Sci.	4	6	40.0

*Patterns Associated with Division within the CAS.* Retention was much lower in the Division of Natural Science and somewhat lower in the Humanities Division than in three divisions. Approximately 44 % of incoming natural science faculty members are not retained compared to only 22 % loss among faculty members in the other natural science divisions (Table 1). There was a statistical trend towards a difference in retention among the five divisions ( $\chi^2 = 7.85$ , d.f. = 4,  $p = 0.10$ ). AF promotion success was lower in the Education and the Library than in the other divisions but these differences were not statistically significant ( $\chi^2 = 5.69$ , d.f. = 4,  $p = 0.22$ ). Similarly, promotion delay was more common in the Education and the Library than in the other divisions but these differences were not statistically significant ( $\chi^2 = 5.27$ , d.f. = 4,  $p = 0.26$ )

*Patterns Associated with Gender.* Male faculty were both retained at a lower rate than female faculty and less likely to receive tenure (Table 4). For both these outcomes the gender differences were fairly small and were not statistically significant (Retention-- $\chi^2 = 0.23$ , d.f. = 1,  $p = 0.64$ ; Tenure Success-- $\chi^2 = 0.49$ , d.f. = 1,  $p = 0.49$ ). The pattern was reversed for AA promotion success, AF promotion success, and AF promotion delay. In each analysis, female faculty had lower success rates than males. None of these gender differences were statistically significant but in some cases the differences were large and approached statistical significance. For example, woman were approximate four times as likely to be denied promotion from Associate to Full professor when they first applied (Fisher Exact test,  $p = 0.14$ ). Similarly, 56.1% of woman faculty experienced promotion delay compared to 43.1% of males ( $\chi^2 = 1.15$ , d.f. = 1,  $p = 0.29$ ). The difference among the genders in AA promotion success was smaller and not statistically significant (Table 5;  $\chi^2 = 1.15$ , d.f. = 1,  $p = 0.29$ ).

Table 4. The relationship between gender and ALANA status and faculty retention and tenure success.

	Faculty Retention			Tenure Success		
	# Retained	# not Retained	% Retained	# Successful	# Not Successful	% Successful
Female	56	17	76.7	66	2	97.1
Male	62	25	71.3	67	5	93.1
ALANA	14	6	70.0	17	0	100.0
Non-ALANA	104	35	74.8	116	7	94.3

*Patterns Associated with ALANA status.* ALANA and non-ALANA faculty experience similar rates of retention and tenure success (Table 4). ALANA faculty have slightly lower, but non statistically-significant differences in retention rate ( $\chi^2 = 0.04$ , d.f. = 1,  $p = 0.85$ ) and slightly higher, but not statistically significant rate of tenure success ( $\chi^2 = 0.17$ , d.f. = 1,  $p = 0.68$ ). The frequency of AA promotion, however, is far lower for ALANA faculty (Table 5) and this difference approaches statistical significance ( $\chi^2 = 3.02$ , d.f. = 1,  $p = 0.08$ ).

Table 5. The relationship between gender and ALANA status and two outcomes, AA promotion and AF promotion.

Academic Unit	Assistant to Associate Promotion			Associate to Full Promotion		
	# Successful	# Not Successful	% Successful	# Successful	# Not Successful	% Successful
Female	54	14	79.4	21	5	80.7
Male	60	10	85.7	40	3	93.0
ALANA	11	6	64.7	2	0	100
Non-ALANA	103	18	85.1	59	8	88.0

Furthermore, the frequency of AF promotion delay is far higher in ALANA faculty than in non-ALANA faculty and the analysis indicated a strong trend (Fisher Exact Test,  $p = 0.10$ ) towards a nonrandom difference promotion rate. AF promotion success was slightly higher in ALANA than non-ALANA faculty but sample sizes were very low for ALANA faculty (Fisher Exact Test,  $p = 1.00$ ).

Table 6. The relationship between gender and ALANA status and two outcomes, AA promotion and AF promotion.

	Promotion Delay		
	# without Promotion Delay	# with Promotion Delay	% Successful
Female	18	23	43.9
Male	33	25	56.9
ALANA	1	5	16.7
Non-ALANA	47	40	54.0

*Patterns Associated with department size in the CAS.* Faculty retention was significantly lower in small departments than medium and large departments ( $\chi^2 = 7.94$ , d.f. = 2,  $p = 0.02$ ). Small departments had an attrition rate of 46% while medium and large departments combined only lost 24% of incoming faculty.

Table 7. The relationship between department size in the CAS and faculty retention and tenure success.

	Faculty Retention			Tenure Success		
	# Retained	# not Retained	% Retained	# Successful	# Not Successful	% Successful
Entire CAS	78	34	76.9	90	5	94.7
Small Depts	16	14	53.3	22	2	91.7
Med. Depts	26	4	86.7	25	0	100.0
Large Depts	35	15	70.0	42	3	93.3

Tenure success was also lowest in the small departments but the differences were small and not statistically significant ( $\chi^2 = 2.00$ , d.f. = 2,  $p = 0.37$ ). AA promotion success was slightly higher in the medium-sized departments than in either large or small departments. These differences were small and there was no statistically significant association between department size and the frequency of AA promotion success ( $\chi^2 = 0.89$ , d.f. = 2,  $p = 0.64$ ).

Table 8. The relationship between department size in the CAS and AA promotion and AF promotion success.

Academic Unit	Assistant to Associate Promotion			Associate to Full Promotion		
	# Successful	# Not Successful	% Successful	# Successful	# Not Successful	% Successful
Entire CAS	75	22	77.3	34	6	85.0
Small Depts	18	6	75.0	6	1	85.7
Med. Depts	22	4	84.6	10	1	90.9
Large Depts	35	11	76.1	18	4	81.8

Similarly, AF promotion success was slightly higher in the medium-size departments than in either large or small departments. These differences in success were small and there was no statistically significant association between department size and the frequency of AF promotion success ( $\chi^2 = 0.48$ , d.f. = 2,  $p = 0.79$ ).

Table 9. The relationship between department size in the CAS and promotion delay.

	Promotion Delay		
	# without Promotion Delay	# with Promotion Delay	% Successful
Entire CAS	30	29	50.8
Small Depts	5	6	45.5
Medium Depts	9	11	45.0
Large Depts	16	12	57.1

Faculty in small and medium-sized department were slightly more likely to experience promotion delay than faculty in large departments. There was, however, no statistically significant association between department size and the frequency of promotion delay ( $\chi^2 = 0.85$ , d.f. = 2,  $p = 0.66$ ).

### Summary of Major Conclusions

The methods employed in this study can only reveal statistical patterns that have occurred in the outcomes of the tenure and promotion process. This study provides no insight into the causal forces that generated the observed patterns. We found five statistical patterns that should be investigated in further detail. These include:

1. The lower retention rate in the CAS with a particular emphasis on the Division of Natural Science.
2. The lower frequency of AA promotion among CAS faculty.
3. The higher rates of promotion delay among SOM members
4. Lower frequency of AF promotion and higher rates of promotion delay among female faculty
5. Lower frequency of AA promotion and higher rates of promotion delay among ALANA faculty.
6. The lower retention rates seen in smaller CAS departments compared to medium and large CAS departments.

### **Additional Steps in Analysis**

We believe this study could be further value by collecting additional forms of data in the future. These steps might include:

1. Determining if the trends noticed in this study continue in the future. To facilitate this trend analysis the office of Academic Affairs or the Office for Institutional Research should continue to update the data files used in this study.
2. Determining how Stetson compares with other institutions in terms of several key tenure and promotion statistics by getting benchmarking statistics from our reference schools.

### **Some Thoughts on the Tenure and Promotion Process**

After conducting these analyses and discussing the tenure and promotion process we thought four issues might deserve further attention. These issues include:

1. We might work on enhancing faculty development, including some form of institutional mentoring, for those faculty involved in the tenure and promotion process.
2. All three colleges could continue to revisit and clarify T&P guidelines and procedures. The recent letters from outgoing University Tenure and Promotion Committee on provide suggestions on several key areas to focus attention.
3. We should also ensure that department heads, key administrators, and the members of the tenure and promotion committees members are well-versed in tenure and promotion guidelines.



4. We should consider enhancing the Deans' and the College and the University Tenure and Promotion Committees involvement in two-year and four-year reviews.

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