Texas A&M University
Tenured/Tenure-track Faculty Salary Study
FY 2016

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Executive Summary

Since 2012, the Office of the Dean of Faculties and the TAMU ADVANCE Center have sponsored an annual study of faculty salaries at Texas A&M University. The primary goal of the annual study is to determine the extent to which statistically significant differences in monthly salary exist between male and female tenured/tenure-track faculty at Texas A&M University, after adjustment for demographic factors such as title, age, race/ethnicity, and years of service. However, these analyses have also been used to determine whether or not there were any systematic differences by race/ethnicity or national origin, and to identify individuals whose actual salaries were unusually high or unusually low, given the predictions of the salary model.

This report presents the 2016 version of the Texas A&M Tenured/Tenure-track Salary Study. The analyses include tenured/tenure track faculty in 11 divisions of Texas A&M University and covers the 12 fiscal years from 2005 through 2016. We found that:

- Statistically significant salary differentials by sex were detected in five TAMU divisions, once other demographic factors were taken into account.
    1. Agriculture and Life Sciences (COALS): Monthly salaries for female faculty were significantly less than the comparable, demographically adjusted average salaries for male faculty at the **assistant**, associate and full professor levels in the non-STEM departments. There were no significant differences by sex in the STEM departments.
    2. College of Liberal Arts: In the STEM departments, monthly salaries for female faculty members were significantly below those of their male counterpart at all three ranks (**assistant**, associate, and full). There was no discernable difference by sex in the non-STEM departments.
    3. College of Veterinary Medicine: Female full professors and female associate professors earned significantly less than their male counterparts, on average.
    4. Mays Business School: **Female assistant professors earned significantly less than male assistant professors, on average.**
    5. College of Engineering: **Female assistant professors earned 3.5% more than their male counterparts.**
- There is no evidence that salaries were systematically related to sex during fiscal year 2016 in the Colleges of Architecture, Education and Human Development, Geosciences or Science, or in the Law School or the Bush School of Government & Public Service.
- Differentials between male and female salaries are widening over time in the Mays Business School. No systematic time trends were found in the other colleges.
- As a general rule, the salary differences by sex that were statistically significant in fiscal year 2016 had also been detected in previous salary studies. However, this is the first time since 2012 that no significant differences by sex were detected in the STEM departments of the College of Agriculture and Life Sciences. It is also the first year that female salaries were significantly higher than male salaries in any unit or at any rank.

- Asian faculty members earn systematically more than non-Asian faculty members in the College of Geosciences, the non-STEM departments of the College of Liberal Arts and the Mays Business School, and significantly less than non-Asian faculty members in the College of Education and Human Development. There is no other statistically reliable evidence of differences in salary by race/ethnicity.
- There is no evidence that salaries for 2016 were systematically related to national origin in any of the Colleges.
- Individuals with salaries that diverged sharply from the model predictions were flagged for follow-up by division personnel (to whom data files have been provided). University-wide, roughly the same percentages of male and female faculty members were flagged for follow-up because their salaries were lower than predicted. On the other hand, the percentage of male faculty members identified as outliers because their salaries were higher than predicted was more than double the percentage of female faculty members so identified.

Data Description

The payroll data for this analysis, which covers fiscal years 2005 through 2016, come from the Budget/Payroll/Personnel (BPP) Operations Center of the Texas A&M University System. Additional data on faculty characteristics come from the Data Warehouse maintained by the Texas A&M University System, departmental administrative data, and a supplemental review of faculty CVs.

This analysis covers TAMU employees in tenured or tenure track positions in the Colleges of Agriculture and Life Sciences, Architecture, Education and Human Development, Engineering, Geosciences, Liberal Arts, Science and Veterinary Medicine, the Mays Business School, the Law School and the Bush School. With the exception of a handful of outliers[1], all tenured or tenure-track faculty with at least a half-time appointment in one of these colleges were included in the analysis.[2] Faculty members who retire but continue to work for TAMU are no longer considered tenured or tenure track employees and were therefore only included during the years prior to their retirements.

Model Methodology

This analysis examines the salary history for each tenured or tenure-track faculty member using a series of linear mixed models (also referred to as multilevel models or panel random effects models).[3] Because salary patterns are likely to be different across colleges, separate salary models were estimated for each college. For the same reason, within the Colleges of Agriculture and Life Sciences and Liberal Arts, salary models for STEM departments were estimated separately from the salary models for non-STEM departments.[4]

Following the economics literature on the analysis of salaries in higher education,[5] the dependent variable in each salary model is the natural log of each faculty member's full-time-equivalent monthly salary.[6] The independent variables are a set of demographic characteristics (including sex) that could reasonably explain variations in those monthly salaries. The research team worked closely with TAMU's colleges to refine the set of demographic indicators included in the analysis and to ensure that important demographic nuances (such as the possible influence of being board certified on salaries in the College of Veterinary Medicine) were captured by the models.

Table 1 illustrates the demographic variables included in the salary models.[7] As the table indicates, each model includes fixed effects for sex, sex interacted with faculty rank, and sex interacted with a linear time trend. The interaction between sex and faculty rank allows for differences in salary between male and female faculty at the different ranks: assistant professor, associate professor, and professor.[8] Interactions between sex and a time trend allows differences between male and female salaries to widen or narrow over time. Departmental time trends allow for salary growth to be higher in some departments than in others.[9] The rank-specific year indicators allow salary growth to be systematically different for the three ranks: assistant professors, associate professors, and professors.

Table 1: Demographic Variables Included in the Salary Models

Variable Type	Specific Variables
Sex Indicators	Male Faculty Indicator
	Male Associate Professor Indicator
	Male Full Professor or Above Indicator
	Male Faculty Indicator * Time Trend
	Male Faculty Indicator * Post 2011 Time Trend
Faculty Rank Indicators	Associate Professor Indicator
	Dean/VP Indicator
	Distinguished Professor Indicator
	Full Professor
Faculty Race/Ethnicity Indicators	Anglo Faculty Indicator
	Asian Faculty Indicator
	Foreign Born Faculty Indicator
Administrative Status Indicators	Current Administrator
	Ever Administrator, 2000-01 through 2015-16
Years Since Degree Indicators	Years Since Degree, and its square
	Years Since Degree Unknown Indicator
Years Of Service At Texas A&M	Years Since First Hired
	Break in Service Indicator
Annual Term Length	Months Under Contract per Year (9 To 12)
Rank At Hire Indicators	Hired as Advanced Assistant Professor
	Hired as Associate Professor
	Hired as Full Professor
	Rank at Hire Unknown
Highest Degree Held Indicators	MA
	Special Degree
	Dual Degree
Certification Indicators	Board Certified
	Dual Certified
Change In Status Indicators	Newly Tenured
	Other Promotion
	Demotion
	Other Title Change
Departmental Indicators	Indicator Variables for Each Department
Department Trends	Department Indicators * Time Trend
Year Indicators	Year Indicators
Rank-Specific Year Indicators	Associate Professor Indicator * Year Indicators
	Full Professor or Above Indicator* Year Indicators

In addition to the demographic characteristics presented in Table 1, differences in salary are known to arise from differences in research productivity or teaching excellence. Unfortunately, research productivity and teaching excellence are very difficult to measure consistently, and therefore could not be included in the analysis. To the extent that the included variables (such as sex) are systematically correlated with these important omitted variables, then interpretations of the results may be altered. For example, a finding that female faculty members earn systematically less than male faculty members could be interpreted as evidence that female faculty members are systematically less productive than male faculty members, rather than as evidence that female faculty are paid systematically less than comparable male faculty members.

Furthermore, evidence that average salaries for female faculty are significantly below those for male faculty (after demographic adjustment) need not indicate that female faculty members are more likely than their male colleagues to have salaries that are unusually low. Such a difference between the sexes could also arise if female faculty members are less likely than their male colleagues to have salaries that are unusually high.

Findings about Sex Differentials

Table 2 compares the predicted fiscal year 2016 salaries for male and female faculty members with identical demographic characteristics.[10] For example, the first row in the table indicates that the salary model for the Bush School predicts that a female assistant professor would earn 102.1% of the salary of a male assistant professor, all other demographic characteristics in the model being equal. The asterisks indicate salary ratios that are significantly different from 100% at the 1-percent (***) 5-percent (**) or 10-percent (*) levels.[11]

Table 2: Female Salaries as a Percentage of Male Salaries, by College, STEM Status and Faculty Rank, Fiscal Year 2016

	Female Salaries as a Percentage of Male Salaries	
Bush School of Government & Public Service		
Assistant Professor	102.1%	
Associate Professor	99.0%	
Full Professor	102.0%	
College of Agriculture and Life Science (COALS)		
STEM Assistant Professor	96.7%	
STEM Associate Professor	95.8%	
STEM Full Professor	100.1%	
Non STEM Assistant Professor	90.8%	**
Non STEM Associate Professor	89.9%	***
Non STEM Full Professor	94.2%	*
College of Architecture		
Assistant Professor	96.5%	
Associate Professor	95.5%	

	Female Salaries as a Percentage of Male Salaries	
Full Professor	101.7%	
College of Education and Human Development		
Assistant Professor	102.4%	
Associate Professor	101.0%	
Full Professor	99.4%	
College of Engineering		
Assistant Professor	103.5%	*
Associate Professor	101.5%	
Full Professor	99.1%	
College of Geosciences		
Assistant Professor	96.0%	
Associate Professor	97.4%	
Full Professor	97.7%	
College of Liberal Arts		
STEM Assistant Professor	88.2%	***
STEM Associate Professor	86.6%	***
STEM Full Professor	88.5%	***
Non STEM Assistant Professor	98.5%	
Non STEM Associate Professor	98.2%	
Non STEM Full Professor	96.3%	
College of Science		
Assistant Professor	96.0%	
Associate Professor	96.7%	
Full Professor	97.9%	
College of Veterinary Medicine		
Assistant Professor	96.1%	
Associate Professor	95.4%	*
Full Professor	89.0%	***
Mays Business School		
Assistant Professor	88.0%	***
Associate Professor	97.3%	
Full Professor	97.1%	
School of Law		
Associate Professor	97.2%	
Full Professor	93.1%	

Note: Salary ratios are based on a regression analysis of monthly salaries from fiscal year 2005 through fiscal year 2016. The salary models control for systematic differences in salary arising from differences in the factors described in Table 1, and random effects for individuals. In the Law School, tenure-track faculty are hired at the rank of associate professor so there are no tenure-track assistant professors. The asterisks indicate that the difference between male and female salaries is statistically significant at the 1-percent (***), 5-percent (**) or 10-percent (*) levels.

As Table 2 illustrates, statistically significant differences in monthly salaries for male and female tenured/tenure-track faculty in fiscal year 2016 (the 2015-16 school year) were observed in five of the 11 TAMU divisions under analysis.

- In COALS, the demographically adjusted average salaries for female faculty were significantly less than the demographically adjusted average salaries for male faculty at the **assistant**, associate and full professor levels in the non-STEM departments. Sex differences in salary were not statistically significant at any level among the STEM departments of the College of Liberal Arts, which is a change from previous reports.
- In the College of Liberals Arts, female faculty in the STEM departments earned no more than 89% of the salary for otherwise equal male faculty at all ranks (**assistant**, associate, and full). Sex differences in salary were not statistically significant in the non-STEM departments of the College of Liberal Arts.
- In the College of Veterinary Medicine, female full professors earned 89% of the average salary for otherwise equal male full professors. Salary gaps for associate professors were smaller, but also statistically significant.
- **Female assistant professors in the Mays Business School earned only 88% of the average salary for their male counterparts, all other things being equal.**
- **Female assistant professors earned significantly more than male assistant professors in the College of Engineering.** Although there are other cases where female salaries were more than 100% of male salaries (after demographic adjustment) this is the only instance where the difference was statistically significant (at the 10% level or better).

There is no evidence that salaries were systematically related to sex in the remaining TAMU colleges under analysis.

The differential between male and female salaries has been growing over time (on average across all ranks) in the Mays Business School and following no discernible time trends in the Colleges of Agriculture and Life Sciences; Architecture; Education and Human Development; Engineering; Geosciences; Liberal Arts; Science; and Veterinary Medicine, and the Bush School (see Appendix Tables A.2 through A.4). It is not possible to describe time trends in the School of Law because only three years of data are available.

As a general rule, the salary differences by sex that were statistically significant in fiscal year 2016 had also been detected in previous salary studies. However, this is the first time since 2012 that significant differences by sex were *not* detected in the STEM departments of the College of Agriculture and Life Sciences. It is also the first time that female salaries were significantly higher than male salaries in any division.

Findings about Race/Ethnicity and National Origin Differentials

Table 3 compares the predicted fiscal year 2016 salaries for non-Hispanic white faculty members with those of otherwise equal Asian and Other Race faculty members, and the predicted salaries for foreign-born faculty with those of otherwise equal native-born faculty.[12] For the purposes of this analysis, the category of Other Race faculty includes individuals who self-identify as American Indian, African American, Hispanic, or two or more races as well as those for whom ethnicity is not reported. (None of these subgroups is large enough to analyze separately.) Native born faculty members report that the United States is their national origin; foreign born faculty members report any other country. Given the small number of individuals involved, racial/nativity estimates are not available for the Bush School or the Law School. Again, the asterisks indicate salary ratios that are significantly different from 100% at the 1-percent (***) 5-percent (**) or 10-percent (*) levels.[13]

Table 3: Asian and Other Race Salaries as a Percentage of White Salaries and Foreign-born Salaries as a Percentage of Native-born Salaries, by College, Fiscal Year 2016

	Asian Salaries as a Percentage of White Salaries		Other Race Salaries as a Percentage of White Salaries	Foreign-born Salaries as a Percentage of Native Salaries
COALS STEM	103.1%		97.8%	100.0%
COALS Non-STEM	105.7%		102.3%	98.3%
College of Architecture	98.4%		99.5%	99.5%
College of Education	93.5%	**	102.1%	102.6%
College of Engineering	97.6%	*	98.9%	100.5%
College of Geosciences	108.5%	***	102.2%	99.4%
College of Liberal Arts STEM	105.0%		98.8%	104.2%
College of Liberal Arts Non-STEM	106.6%	***	98.7%	98.7%
College of Science	98.8%		99.9%	100.2%
College of Veterinary Medicine	100.2%		97.6%	99.0%
Mays Business School	107.6%	**	95.7%	101.0%

Note: Salary ratios are based on a regression analysis of monthly salaries from fiscal year 2005 through fiscal year 2016. Given the small number of individuals involved, racial estimates are not available for the Bush School or the Law School. The salary models control for systematic differences in salary arising from differences in the factors described in Table 1, and random effects for individuals. The asterisks indicate that the ratio is significantly different from 100% at the 1-percent (***), 5-percent (**) or 10-percent (*) levels.

As the table illustrates, Asian faculty appear to command a significant wage premium in the College of Geosciences, the non-STEM departments of the College of Liberal Arts and the Mays Business School. On the other hand, Asian faculty members in the College of Education earned

only 93.5% of the salaries of white faculty members with equivalent demographics. The salary gap for Asian faculty, while modest, was also statistically significant in the College of Engineering. There is no other evidence of salary differentials for Asian faculty.

There is no evidence that salaries for Other Race faculty are systematically different from the salaries for non-Hispanic white faculty in any of the colleges under analysis. There also is no evidence that the salaries for foreign-born faculty are systematically different from the salaries of native-born faculty in any of the colleges under analysis.

Findings about Individual Outliers

The intent of this aspect of the annual faculty salary study is to identify individual faculty members whose actual monthly salaries in fiscal year 2016 diverged markedly from salaries predicted by the empirical model described above. The predicted salaries used for this exercise were constructed setting the sex, ethnicity and national origin indicators at the values for a native-born, white male faculty member, but allowing all other indicators to reflect the actual characteristics of the individual faculty member. In each college, the 10 percent of records with the largest difference between actual and predicted were flagged for follow-up, as were the 10 percent of records university-wide with the largest difference for each faculty rank (assistant, associate and full). Only faculty records for individuals holding the rank of assistant, associate or full professor were flagged for follow-up; higher ranks, such as Distinguished Professors, Deans, and Vice Presidents, were not included in this exercise.

Please note that while the set of demographic characteristics used in this analysis is extensive, it does not include all the factors that might influence salary. As is discussed above, research productivity and teaching excellence could not be included in the analysis because there are no available indicators that are consistently defined and comparable across the colleges. The differences between actual and predicted salaries that led authors to flag a salary record for follow-up could easily be explained by differences in research or teaching.

Table 4 illustrates the percentage of individuals in each sex and college who were flagged for follow-up because their salaries were higher than expected or lower than expected. Thus, the table indicates that 10.5% of the female faculty members and 3.5% of the male faculty members in the College of Architecture were flagged for follow-up because their salaries were lower than predicted. As the table illustrates, approximately the same percentages of male and female faculty members across the University were flagged for follow-up because their salaries were lower than predicted, but the percentage of male faculty members identified as outliers because their salaries were higher than predicted was more than double the percentage of female faculty members so identified. Male faculty members in the STEM departments of the College of Liberal Arts were six times more likely than female faculty members to be flagged for follow-up because their salaries were higher than predicted.

Table 4: Percentages of Individuals Flagged for Follow-up, by College and Sex, Fiscal Year 2015

	Lower than Predicted		Higher than Predicted	
	Female	Male	Female	Male
Bush School of Government & Public Service	0%	11.1%	10.0%	0%
College of Agriculture and Life Sciences STEM	0%	4.9%	5.7%	9.2%
College of Agriculture and Life Sciences Non-STEM	4.6%	1.5%	0%	4.6%
College of Architecture	10.5%	3.5%	5.3%	5.2%
College of Education and Human Development	2.5%	8.9%	5.0%	7.1%
College of Engineering	4.4%	9.2%	6.7%	9.9%
College of Geosciences	0%	1.5%	10.5%	9.1%
College of Liberal Arts STEM	21.8%	8.4%	3.6%	24.2%
College of Liberal Arts Non-STEM	8.6%	14.7%	8.6%	13.7%
College of Science	10.0%	11.1%	10.0%	13.8%
College of Veterinary Medicine	6.7%	2.9%	0%	13.2%
Law School	4.8%	5.0%	0%	15.0%
Mays Business School	11.8%	4.4%	0%	7.4%
Total	7.7%	7.7%	5.1%	11.8%

Note: Salary outliers are based on a comparison of actual salaries to the salaries that would have been predicted for a native-born white male, given the parameter weights in Appendix tables A.2 through A.4.

Endnotes

[1] The Cook's distance is a statistical indicator for outlier observations with a disproportionate influence on the coefficients. Three faculty members with a Cook's distance greater than one were excluded from the final models. Faculty records with incomplete data or obviously erroneous data were also excluded.
[2] Thus, faculty with less than a nine-month contract and those with less than a 50 percent appointment were excluded from the analysis.
[3] For a detailed discussion of linear mixed models, see Sheather, S. J. (2009). *A Modern Approach to Regression with R*. Springer, New York.
[4] For the purposes of this analysis, the STEM departments of the College of Agriculture and Life Sciences are: Animal Science; Biochemistry and Biophysics; Biological and Agricultural Engineering, Entomology; Horticultural Sciences; Nutrition and Food Science, Plant Pathology and Microbiology; Soil and Crop Sciences; and Wildlife and Fisheries. The STEM departments of the College of Liberal Arts are: Anthropology; Economics; Political Science; Psychology; and Sociology.
[5] See, for example, Ginther, D. (2003) "Is MIT an Exception? Gender Pay Differences in Academic Science," *Bulletin of Science Technology & Society,* 23(1), 21-26, or Ginther, D., & Hayes, K. (2003). Gender differences in salary and promotion for faculty in the humanities 1977-1995. *Journal of Human Resources*, 38(1), 34-73.
[6] The full-time-equivalent monthly salary is the current monthly salary for the month of October, divided by the percent time. Thus, the full-time-equivalent monthly salary for a person with a 75 percent appointment is his or her monthly salary divided by 0.75.
[7] See appendix table A1 for definitions of the variables included in the salary model. All models also include random effects for individuals. Due to their small size, the Bush School of Government and Public Service and the Law School were evaluated using a less detailed model than that used for the other TAMU divisions.
[8] Distinguished Professors and Deans/Vice Presidents were considered Professors when constructing the time trends and sex differentials.
[9] Preliminary analysis indicates that departmental time trends were not statistically significant in the Bush School, the College of Veterinary Medicine and the STEM departments of the College of Liberal Arts. Therefore departmental time trends were not used in the salary models for those divisions. Departmental time trends were also not used in the Law School model because only three years of data are available.
[10] The regression coefficients that support these salary predictions are presented in Appendix Tables A.2, A.3 and A.4.
[11] All statistical tests are two sided. The baseline analysis tests for significance with respect to the sex variables using Huber-White standard errors that have been clustered by individual
[12] The regression coefficients that support these salary predictions are presented in Appendix Tables A.2, A.3 and A.4.
[13] All statistical tests are two sided. The baseline analysis tests for significance with respect to the sex variables using Huber-White standard errors that have been clustered by individual.

Appendix Table A1: Variables Included in the Salary Model

Variable	Definition
Log monthly salary	Natural log of the individual's full-time-equivalent salary for the month of October. The full-time-equivalent salary is the monthly salary divided by the percent time. This is the dependent variable.
Male	Takes on the value of 1 if the person is male, and zero otherwise.
Male trend	Male * time trend. The time trend takes on the value of zero in fiscal year 2001 and of 15 in fiscal year 2016.
Male Associate	Takes on the value of one if the person is a male associate professor, and zero otherwise.
Male Full Plus	Takes on the value of one if the person is a male full professor, dean or vice-president, or distinguished professor, and zero otherwise.
Associate Professor	Takes on the value of one if the person is an associate professor, and zero otherwise.
Dean/VP	Takes on the value of one if the person has the title of Dean, and zero otherwise.
Distinguished professor	Takes on the value of one if the person is a Distinguished Professor, and zero otherwise.
Full Professor	Takes on the value of one if the person is a full professor, and zero otherwise.
White	Takes on the value of one if the person is white, and zero otherwise.
Asian	Takes on the value of one if the person is Asian, and zero otherwise.
Foreign born	Takes on the value of one if the person is born in a country other than the United States, and zero otherwise.
Current Administrator	Takes on the value of one if the person holds an administrator title, and zero otherwise.
Ever Administrator	Takes on the value of one if the person has held an administrator title at any time since 2000-2001, and zero otherwise.
Years since degree and its square	Number of years since the highest degree awarded. If the date of the highest degree is unknown, the year of degree is imputed as the year originally hired.
Years since degree, unknown	Takes on the value of one if the year of degree is unknown, and zero otherwise.
Years since first hired	The number of years since the original employment year.
Break in service	Takes on the value of one if the year originally hired is not equal to the year currently hired, and zero otherwise.
Term length	Natural log of the number of months under contract.

Hired as Advanced Assistant professor	Takes on the value of one if the person was hired as an assistant professor with less than five years on the tenure clock, and zero otherwise.
Hired as Associate professor	Takes on the value of one if the person was hired as an associate professor, and zero otherwise.
Hired as Full professor	Takes on the value of one if the person was hired as a full professor or dean and zero otherwise.
Rank at hire unknown	Takes on the value of one if the person's rank at hire is unknown, and zero otherwise.
MA or below	Takes on the value of one if the highest degree held is a master's degree or below, and zero otherwise.
Special degree	Takes on the value of one if the highest degree held is a special degree, and zero otherwise.
Dual Degree	Takes on a value of one if the person holds both a PhD and a DVM, and zero otherwise. College of Veterinary Medicine only.
Board Certified	Takes on the value of one if the person is board certified, and zero otherwise. College of Veterinary Medicine only.
Dual Certified	Takes on the value of one if the person is board certified in two or more specialties, and zero otherwise. College of Veterinary Medicine only.
Newly tenured	Takes on a value of one if the person just received tenure, and zero otherwise.
Other promotion	Takes on a value of one if the person was just promoted, and zero otherwise.
Demotion	Takes on the value of one if the person just stepped down and zero otherwise.
Other title change	Takes on a value of one if the person's title changed from the previous observation, and zero otherwise.
Department indicators	Takes on a value of one if the person is from the designated department, and zero otherwise.
Department trends	Interaction between a department indicator and a time trend. The time trend takes on the value of zero in fiscal year 2000 and of 15 in fiscal year 2016. Department trends are not used in the models for the Bush School, the College of Veterinary Medicine and the STEM departments of the College of Liberal Arts because they are not statistically significant.
Year indicators	Sequence of indicator variables, one for each fiscal year.
Rank * year indicators	Interaction between two indicators for faculty rank (associate professor, and full professor or above) and the series of year indicators.

Appendix Table A2: The Estimated Relationship between Salaries and Faculty Demographics in STEM Departments, 2004-05 through 2015-16

VARIABLES	COALS STEM	Engineering	Geosciences	Science	Liberal Arts STEM
Male	-0.0263	0.0161	0.0367	0.000890	0.115***
	(0.0363)	(0.0198)	(0.0344)	(0.0298)	(0.0328)
Male trend	0.00655**	-0.00375	0.000437	0.00287	-0.000430
	(0.00271)	(0.00259)	(0.00370)	(0.00283)	(0.00287)
Male trend after FY 2011	-0.00773	0.00125	-0.000578	-0.000697	0.00332
	(0.00487)	(0.00379)	(0.00702)	(0.00353)	(0.00394)
Male Associate	0.00921	0.0189	-0.0139	-0.00728	0.0185
	(0.0188)	(0.0124)	(0.0186)	(0.0136)	(0.0193)
Male Full Plus	-0.0348	0.0434**	-0.0165	-0.0196	-0.00307
	(0.0298)	(0.0215)	(0.0343)	(0.0301)	(0.0296)
Associate Professor	0.122***	0.115***	0.0573***	0.126***	0.167***
	(0.0185)	(0.0154)	(0.0219)	(0.0186)	(0.0152)
Dean/VP	0.283***	0.206***	0.209***	0.177***	0.468***
	(0.0462)	(0.0335)	(0.0368)	(0.0536)	(0.0346)
Distinguished Professor	0.377***	0.380***	0.599***	0.376***	0.901***
	(0.0309)	(0.0324)	(0.0828)	(0.0360)	(0.0751)
Full Professor	0.313***	0.252***	0.222***	0.297***	0.327***
	(0.0295)	(0.0227)	(0.0307)	(0.0338)	(0.0306)
White	0.0223	0.0110	-0.0219	0.00107	0.0126
	(0.0389)	(0.0205)	(0.0235)	(0.0277)	(0.0325)
Asian	0.0520	-0.0134	0.0597*	-0.0109	0.0619
	(0.0462)	(0.0200)	(0.0348)	(0.0371)	(0.0482)
Foreign born	0.000205	0.00519	-0.00574	0.00161	0.0409
	(0.0322)	(0.0126)	(0.0220)	(0.0213)	(0.0443)
Current admin	0.0354***	0.0914***	0.0317**	0.0852***	-0.0274
	(0.0109)	(0.0227)	(0.0157)	(0.0188)	(0.0569)
Ever admin	0.0548*	0.108***	0.0610**	0.205***	0.196***
	(0.0333)	(0.0213)	(0.0264)	(0.0402)	(0.0445)
Years since degree	0.0161***	0.0153***	0.0241***	0.0304***	0.0151***
	(0.00290)	(0.00205)	(0.00357)	(0.00312)	(0.00397)
Years since degree unknown	0.0154	-0.0185	-0.196***	0.254***	0.00487
	(0.0793)	(0.0439)	(0.0434)	(0.0860)	(0.0811)

Years Since Degree, Squared	-0.000292***	-0.000177***	-0.000390***	-0.000252***	-0.000187***
	(6.24e-05)	(3.17e-05)	(6.02e-05)	(3.34e-05)	(5.38e-05)
Years since First Hired	0.000669	-0.00260	-0.00315	-0.0155***	-0.00840***
	(0.00264)	(0.00166)	(0.00265)	(0.00233)	(0.00324)
Break in service	0.0560	0.0468**	0.0323	-0.0228	0.0431
	(0.0354)	(0.0209)	(0.0328)	(0.0537)	(0.0823)
Term length	-0.169***	0.0542*	-0.00820	0.0447**	-0.0366
	(0.0482)	(0.0306)	(0.0160)	(0.0196)	(0.0484)
Hired As Advanced Assistant	0.290**	0.0820*	0.0653	-0.00229	-0.0290
	(0.134)	(0.0445)	(0.0452)	(0.0370)	(0.0575)
Hired As Associate	0.0553	0.00472	-0.0171	-0.105***	0.0778
	(0.0337)	(0.0222)	(0.0362)	(0.0363)	(0.0685)
Hired as Full	0.331***	0.131***	0.0511	0.00196	0.232***
	(0.0788)	(0.0352)	(0.0563)	(0.0562)	(0.0819)
Rank at Hire Unknown	0.0709	-0.0299	0.0910**	-0.183***	0.108
	(0.0550)	(0.0342)	(0.0433)	(0.0457)	(0.102)
MA or less	0.130	-0.0597		-0.210***	0.0667
	(0.0999)	(0.107)		(0.0363)	(0.0479)
Special Degree	0.0407	0.00463			0.230***
	(0.0708)	(0.0719)			(0.0538)
Newly tenured	-0.00440	-0.00842**	0.00360	0.00634	-0.0285***
	(0.00791)	(0.00345)	(0.00765)	(0.00479)	(0.00983)
Other promotion	-0.00959	-0.0168***	-0.0184**	-0.0155***	-0.00815
	(0.00751)	(0.00511)	(0.00766)	(0.00593)	(0.00778)
Demotion	0.0298***	0.0558***	0.0341***	0.0350**	0.0329***
	(0.00923)	(0.0123)	(0.0105)	(0.0158)	(0.0103)
Title change	-0.00462	0.0427***	-0.0306	0.0169**	-0.00853
	(0.00866)	(0.0102)	(0.0203)	(0.00854)	(0.0131)
Year indicators	yes	yes	yes	yes	yes
Year X rank indicators	yes	yes	yes	yes	yes
Department Indicators	yes	yes	yes	yes	yes
Department*trend indicators	yes	yes	yes	yes	no
Observations	2,269	4,304	1,105	2,919	1,797
Number of UINs	285	573	145	345	255

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.10

Appendix Table A3: The Estimated Relationship between Salaries and Faculty Demographics in Selected Non-STEM Departments, 2004-05 through 2015-16

VARIABLES	Architecture	COALS Non-STEM	Education	Liberal Arts Non-STEM	Veterinary Medicine
Male	-0.00109	-0.0166	0.0616**	0.0427*	0.0562**
	(0.0342)	(0.0428)	(0.0291)	(0.0242)	(0.0268)
Male trend	0.00388	0.00772	-0.00777***	-0.00187	-0.00179
	(0.00331)	(0.00538)	(0.00268)	(0.00287)	(0.00214)
Male trend after FY 2011	-0.00426	-0.000460	0.00625	0.000187	0.00206
	(0.00519)	(0.00726)	(0.00465)	(0.00518)	(0.00406)
Male Associate	0.0107	0.00927	0.0140	0.00304	0.00710
	(0.0233)	(0.0213)	(0.0190)	(0.0124)	(0.0185)
Male Full Plus	-0.0522*	-0.0376	0.0294	0.0218	0.0770**
	(0.0317)	(0.0360)	(0.0259)	(0.0233)	(0.0308)
Associate Professor	0.111***	0.103***	0.135***	0.132***	0.105***
	(0.0217)	(0.0207)	(0.0171)	(0.0169)	(0.0149)
Dean/VP	0.159**	0.615***	0.265***	0.341***	0.290***
	(0.0799)	(0.0490)	(0.0322)	(0.0375)	(0.0426)
Distinguished Professor	0.311***	0.452***	0.364***	0.538***	0.608***
	(0.0747)	(0.0403)	(0.0296)	(0.0396)	(0.110)
Full Professor	0.293***	0.290***	0.278***	0.327***	0.184***
	(0.0324)	(0.0342)	(0.0249)	(0.0245)	(0.0291)
White	0.0102	-0.0225	-0.0206	0.0134	0.0247
	(0.0330)	(0.0359)	(0.0224)	(0.0216)	(0.0353)
Asian	-0.0132	0.0329	-0.0848**	0.0747***	0.0262
	(0.0402)	(0.0474)	(0.0333)	(0.0278)	(0.0391)
Foreign born	0.0106	-0.0176	0.0209	-0.0128	-0.00992
	(0.0390)	(0.0328)	(0.0292)	(0.0232)	(0.0252)
Current admin	0.174**	0.0400***	0.0810***	0.0566*	0.0591***
	(0.0693)	(0.0141)	(0.0107)	(0.0297)	(0.0181)
Ever admin	0.137***	0.0367	0.0908***	0.131***	0.110***
	(0.0398)	(0.0411)	(0.0288)	(0.0299)	(0.0264)
Years since degree	0.00593*	0.0214***	0.0157***	0.0144***	0.0181***
	(0.00308)	(0.00395)	(0.00322)	(0.00250)	(0.00294)

Years since degree	-0.0612	0.0209	0.0738	-0.0739	
unknown	(0.0520)	(0.0748)	(0.0595)	(0.0561)	
Years Since Degree,	-6.03e-05	-0.000348***	-0.000227***	-6.28e-05	-0.000235***
Squared	(5.85e-05)	(5.58e-05)	(4.90e-05)	(4.22e-05)	(5.30e-05)
Years since First Hired	-0.00163	-0.00365	-0.000764	-0.00924***	-0.00686***
	(0.00195)	(0.00352)	(0.00247)	(0.00221)	(0.00202)
Break in service	0.0346	0.0675*	0.0450	-0.0307	0.0666***
	(0.0314)	(0.0381)	(0.0301)	(0.0341)	(0.0199)
Term length	-0.00611	-0.00587	-0.104***	0.0454	-0.263
	(0.0326)	(0.0321)	(0.0348)	(0.0467)	(0.178)
Hired As Advanced	-0.0274	0.153***	-0.0188	-0.0272	0.0524
Assistant	(0.0415)	(0.0472)	(0.0547)	(0.0274)	(0.0642)
Hired As Associate	0.142***	0.0325	0.0481	-0.0335	-0.0421
	(0.0525)	(0.0590)	(0.0319)	(0.0390)	(0.0277)
Hired as Full	0.284***	0.185**	0.178***	0.101*	0.228***
	(0.0549)	(0.0860)	(0.0597)	(0.0528)	(0.0645)
Rank at Hire Unknown	0.127**	0.0559	0.0541	-0.169***	0.0951**
	(0.0609)	(0.0747)	(0.0477)	(0.0622)	(0.0384)
MA or less	-0.00439	0.0443	0.00834	-0.0651	
	(0.0290)	(0.0637)	(0.0526)	(0.0601)	
Special Degree	-0.00760		0.0222	-0.153**	0.0305
	(0.0402)		(0.155)	(0.0781)	(0.0410)
DVM PhD					0.0496
					(0.0350)
Board certified				0.182*	0.0265
				(0.0999)	(0.0351)
Dual certified					0.00290
					(0.0292)
Newly tenured	-0.0108	-0.00470	0.00548	-0.0182***	-0.00435
	(0.00846)	(0.00964)	(0.00583)	(0.00641)	(0.00834)
Other promotion	-0.0166	-0.0220*	-0.0116*	-0.0264***	-0.00464
	(0.0130)	(0.0117)	(0.00669)	(0.00636)	(0.00699)
Demotion	0.0250*	0.0400*	0.0192	0.0359***	0.0443
	(0.0140)	(0.0217)	(0.0122)	(0.0128)	(0.0284)
Title change	0.00602	-0.00993	0.0100	0.0261	-0.0163
	(0.00793)	(0.0322)	(0.00698)	(0.0168)	(0.0114)

Year indicators	yes	yes	yes	yes	yes
Year X rank indicators	yes	yes	yes	yes	yes
Department Indicators	yes	yes	yes	yes	yes
Department*trend	yes	yes	yes	yes	no
Observations	1,037	1,102	1,338	2,207	1,395
Number of UINs	151	143	191	295	192

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.10

Appendix Table A4: The Estimated Relationship between Salaries and Faculty Demographics in Selected Non-STEM Departments, 2004-05 through 2015-16

VARIABLES	Bush School	Law School	Mays School
Male	-0.0878	0.0764	0.0774*
	(0.0780)	(0.0633)	(0.0397)
Male trend	0.00553		-0.00130
	(0.00627)		(0.00453)
Male trend after FY 2011	-0.00318		0.0140**
	(0.00878)		(0.00586)
Male Associate	0.0304	-0.0413	-0.101**
	(0.0338)	(0.0815)	(0.0410)
Male Full Plus	0.00138		-0.0978**
	(0.0690)		(0.0486)
Associate Professor	0.0995***	-0.242***	0.160***
	(0.0193)	(0.0613)	(0.0485)
Dean/VP	0.397***	0.137	0.348***
	(0.107)	(0.0928)	(0.0547)
Distinguished Professor			0.411***
			(0.0508)
Full Professor	0.345***		0.299***
	(0.100)		(0.0471)
White			0.0433
			(0.0332)
Asian			0.116***
			(0.0450)
Foreign born			0.0104
			(0.0275)
Current admin	-0.00202		0.0634***
	(0.0309)		(0.0178)
Ever admin	0.0274		0.0982***
	(0.0513)		(0.0375)
Years since degree	0.00489	0.0264***	0.0206***
	(0.00605)	(0.00775)	(0.00410)
Years since degree unknown	-0.00589	-0.227***	-0.0696*
	(0.0410)	(0.0505)	(0.0376)
Years Since Degree, Squared	3.62e-05	-0.000313***	-0.000450***
	(0.000114)	(0.000112)	(8.85e-05)
Years since First Hired	0.00702*	-0.0106**	-0.00945***
	(0.00362)	(0.00490)	(0.00262)
Break in service	-0.118	-0.0604	0.257***
	(0.105)	(0.0678)	(0.0504)
Term length	-0.177	-0.806***	-0.0689*
	(0.120)	(0.0980)	(0.0399)
Hired As Advanced Assistant			0.00200
			(0.0688)
Hired As Associate	0.116**		0.0394
	(0.0573)		(0.0381)
Hired as Full	0.231**		0.208***
	(0.0948)		(0.0652)
Rank at Hire Unknown	0.112		0.0730

	(0.0880)		(0.0630)
MA or less	0.204***	-0.253*	0.359***
	(0.0190)	(0.148)	(0.0661)
Special Degree		-0.0582	0.0318
		(0.0413)	(0.0752)
Newly tenured			-0.00481
			(0.0120)
Other promotion			-0.000920
			(0.0116)
Demotion			0.0270**
			(0.0133)
Title change			-0.000489
			(0.0175)
Year indicators	yes	yes	yes
Year X rank indicators	no	no	yes
Department Indicators	no	no	yes
Department*trend	no	no	yes
Observations	261	123	1,174
Number of UINs	44	47	181

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.10