Texas A&M University
Faculty Salary Study*

Lori L. Taylor
Bush School of Government & Public Service

&

Jeffrey E. Froyd
Director, Faculty Climate and Development, Office of the Dean of Faculties

April 2013

* This project builds on prior work by Dr. Simon Sheather & Kristine Broglio, Department of Statistics, TAMU. We greatly appreciate their assistance and advice.

Executive Summary

The primary goal of the salary study initiated by the Office of the Dean of Faculties and Associate Provost was to determine if there were statistically significant differences in monthly salary between male and female faculty at Texas A&M University, after adjustment for demographic factors such as title, age, race/ethnicity, and years of service. These analyses include tenured/tenure track faculty at 9 divisions of Texas A&M University and covered the period from 2001-2002 through 2012-2013. We found that:

- In fiscal year 2013, four colleges at TAMU had statistically significant difference in monthly salaries for male and female faculty.
    - Across the nine STEM departments of the College of Agriculture and Life Sciences and the five STEM departments of the College of Liberal Arts, the demographically adjusted salaries for female assistant professors and female associate professors were significantly below those of their male counterparts.
    - Across the non-STEM departments of the College of Agriculture and Life Sciences, demographically adjusted salaries for female professors at all ranks were significantly below those of male professors, although the difference between female and male assistant professors was only significant at the 10-percent level.
    - In the College of Architecture, the demographically adjusted salary for female associate professors was significantly below the demographically adjusted salary for male associate professors.
    - In the College of Veterinary Medicine, the demographically adjusted salary for female full professors was significantly lower than the demographically adjusted salary for male full professors.
- There is no evidence that salaries were systematically related to gender during fiscal year 2013 in the Colleges of Education and Human Development, Engineering, Geosciences or Science, nor in the Mays School if Business.
- Differentials between male and female salaries have been growing over time in the College of Agriculture and Life Sciences and narrowing over time in the College of Education. No systematic time trends were found in the Colleges of Architecture, Engineering, Geosciences, Liberal Arts, Science and Veterinary Medicine or in the Mays School of Business.

Data Description

The payroll data for this analysis, which covers academic years 2001-2002 through 2012-2013, come 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, and the Mays Business School. (Due to its small size –fewer than 10 tenured or tenure track faculty at the start of the analysis period—the Bush School of Government and Public Service was not included.) With the exception of a handful of outliers[2], all tenured or tenure-track faculty with at least a half-time appointment in one of these colleges were included in the analysis.[3] Faculty members who retired but continue to work for TAMU are not eligible for tenure and were therefore excluded.

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 hierarchical linear models, or multilevel models).[4] Because salary patterns are likely to be different across colleges, separate salary models were estimated for each college. Within the Colleges of Liberal Arts and Agriculture and Life Sciences, salary models for STEM departments were estimated separately from the salary models for non-STEM departments.[5] For purposes of this analysis, College Administration and University Administration are considered non-STEM departments.

Following the economics literature on the analysis of salaries in higher education,[6] the dependent variable in each salary model is the natural log of each faculty member's full-time-equivalent

[2] 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, as was one faculty member who was tenured in the 1980s but held the rank of assistant professor throughout the analysis period. Faculty records with incomplete data or obviously erroneous data were also excluded.

[3] Thus, faculty with less than a nine-month contract and those with less than a 50 percent appointment were excluded from the analysis.

[4] For a detailed discussion of linear mixed models, see Sheather, S. J. (2009). *A Modern Approach to Regression with R*. Springer, New York.

[5] For a list of the departments considered STEM for this analysis, visit http://advance.tamu.edu/index.php/publications-reports/reports.html

[6] See, for example, Ginther, D. "Is MIT an Exception? Gender Pay Differences in Academic Science," by Donna K. Ginther, *Bulletin of Science Technology & Society* 2003 23: 21, 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;

monthly salary.[7] The independent variables are a set of demographic characteristics (including gender) 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 on salaries of board certification in the College of Veterinary Medicine) were captured by the models.

Table 1 illustrates the demographic variables included in the salary models.[8] As the table indicates, each model includes fixed effects for gender, gender interacted with faculty rank, and gender interacted with a linear time trend. The interaction between gender and faculty rank allows for possibilities that there could be differences in salary between male and female faculty at the different ranks: assistant professor, associate professor, and professor. The interaction between gender and a time trend allows for possibilities that any differences between male and female salaries could be widening or narrowing over time.

In addition to the gender indicators, all models also include random effects for individuals and fixed effects for faculty rank, race/ethnicity, administrative status, years since degree, years of service at Texas A&M, rank at hire, highest degree held, term length, changes in status from the previous year, academic department, fiscal year, department-specific time trends and rank-specific year indicators. Departmental time trends (which were statistically significant in all of the colleges except the College of Architecture, where they were not used) allow for salary growth to be higher in some departments than in others. The rank-specific year indicators (which were statistically significant in all Colleges) allow for salary growth to be systematically different for the three ranks: assistant professors, associate professors, and full professors and above.

In addition to demographic characteristics, differences in salary are known to arise from differences in research productivity or teaching excellence; however, none of the models include any controls for either of those important determinants of salary. 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. To the extent that the included variables (such as gender) are systematically correlated with these important omitted variables, then the interpretation of 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.

[7] 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.

[8] See appendix table A1 for definitions of the variables included in the salary model.

Table 1: Demographic Variables Included in the Salary Models

Variable Type	Specific Variables
Gender Indicators	Male Faculty Indicator
	Male Associate Professor Indicator
	Male Full Professor or Above Indicator
	Male Faculty Indicator * Time Trend
Faculty Rank Indicators	Associate Professor Indicator
	Dean/VP Indicator
	Distinguished Professor Indicator
	Full Professor
Faculty Race/Ethnicity Indicators	Anglo Faculty Indicator
Administrative Status Indicators	Current Administrator
	Ever Administrator, 2000-01 through 2011-12
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

Findings

Table 2 indicates the demographically adjusted average salaries for male and female faculty in 2012-13.[9] In other words, it indicates the expected salaries male and female faculty members with identical demographic characteristics. Asterisks indicate differences in salary that are statistically significant at the 1-percent (***) 5-percent (**) or 10-percent (*) levels.[10]

Table 2: Demographically Adjusted Average Monthly Salaries by College and Faculty Rank, 2012-13

	Female Faculty	Male Faculty	
College of Agriculture and Life Science (COALS)			
STEM Assistant Professor	$7,014	$7,476	**
STEM Associate Professor	$7,810	$8,311	**
STEM Full Professor	$11,013	$11,066	
Non STEM Assistant Professor	$6,916	$7,483	*
Non STEM Associate Professor	$7,858	$8,749	**
Non STEM Full Professor	$9,912	$11,626	***
College of Architecture			
Assistant Professor	$6,826	$7,161	
Associate Professor	$7,907	$8,492	**
Full Professor	$11,885	$12,356	
College of Education and Human Development			
Assistant Professor	$7,255	$7,288	
Associate Professor	$8,825	$8,950	
Full Professor	$11,928	$12,248	
College of Engineering			
Assistant Professor	$16,846	$16,465	
Associate Professor	$19,811	$19,648	
Full Professor	$25,633	$25,371	

[9] The regression coefficients that support these salary predictions are presented in Appendix Table A.2. Note that when making these salary predictions, the demographic characteristics are set at the 2012-13 averages by rank and college. Thus, the demographic characteristics for a full professor in the College of Engineering are not presumed to be the same as those for a full professor in the College of Education and Human Development.

[10] All statistical tests are two sided. The baseline analysis tests for significance with respect to the gender variables using Huber-White standard errors that have been clustered by individual. Clustering allows for a correlation among the residuals for an individual while maintaining the assumption that the residuals are independent from one individual to another. Using a Toeplitz error structure to formally model the correlation among the residuals for individual faculty members yields very similar results. (See Appendix Table A.3.) The only substantive difference between the baseline analysis and the Toeplitz analysis is that the Toeplitz specifications also indicate a statistically significant gender differential among full professors in the STEM departments of the College of Liberal Arts.

	Female Faculty	Male Faculty	
College of Geosciences			
Assistant Professor	$6,684	$6,843	
Associate Professor	$7,990	$8,208	
Full Professor	$10,803	$11,336	
College of Liberal Arts			
STEM Assistant Professor	$8,262	$8,637	**
STEM Associate Professor	$8,476	$9,308	***
STEM Full Professor	$12,711	$13,415	
Non STEM Assistant Professor	$6,661	$6,817	
Non STEM Associate Professor	$7,627	$7,632	
Non STEM Full Professor	$11,048	$11,093	
College of Science			
Assistant Professor	$7,975	$8,173	
Associate Professor	$8,693	$9,048	
Full Professor	$13,089	$13,197	
College of Veterinary Medicine			
Assistant Professor	$8,071	$8,288	
Associate Professor	$8,883	$9,082	
Full Professor	$11,265	$12,180	***
Mays School of Business			
Assistant Professor	$15,224	$15,748	
Associate Professor	$17,259	$17,108	
Full Professor	$20,524	$20,814	

Note: Demographically adjusted average salaries are based on a regression analysis of monthly salaries from 2001-02 through 2012-2013. The salary model controls for systematic differences in salary arising from differences in gender, race, faculty rank, years since degree, years since hiring, rank at hiring, department, highest degree held, time trends and random effects for individuals. 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 the table illustrates, four colleges at TAMU had statistically significant difference in monthly salaries for male and female faculty in fiscal year 2013 (the 2012-13 school year).

- In the College of Agriculture and Life Sciences, the demographically adjusted salaries for female faculty were significantly lower than the demographically adjusted salaries for male faculty at the assistant and associate professor levels in the nine (9) STEM departments, and at the assistant, associate and full professor levels in the seven (7) non-STEM departments. The demographically adjusted average salary for male full professors in non-STEM departments was $11,066 whereas the demographically adjusted average salary for female full professors was $9,912, a difference of 15%.

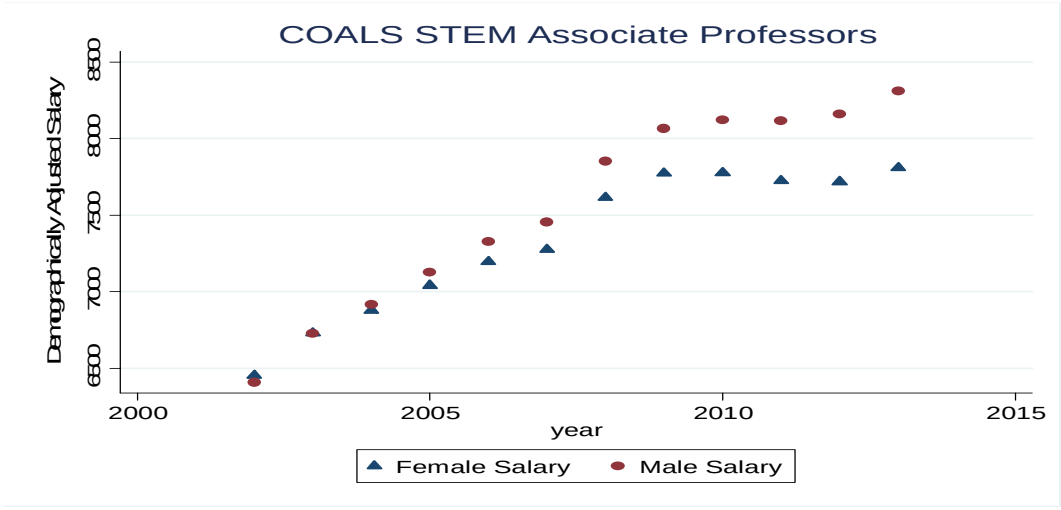
- In the College of Architecture, the demographically adjusted salary for male associate professors was $8,492 per month whereas the demographically adjusted salary for female associate professors was $7,907 or 7 percent less. Gender differences in salary among assistant and full professors were not statistically significant.
- In the College of Liberals Arts, male assistant professors in STEM departments earned $8,637 whereas female assistant professors earned $8,262, a statistically significant difference of 5 percent. Similarly, female associate professors in STEM departments earned 9 percent less than male associate professors. Gender differences in salary among full professors were not statistically significant. Gender differences in salary were not statistically significant at any level among the Non-STEM departments of the College of Liberal Arts.
- In the College of Veterinary Medicine, the demographically adjusted salary for male full professors was a statistically significant 8 percent higher than the demographically adjusted salary for female full professors. Differences in salary for assistant and associate professors were not statistically significant.

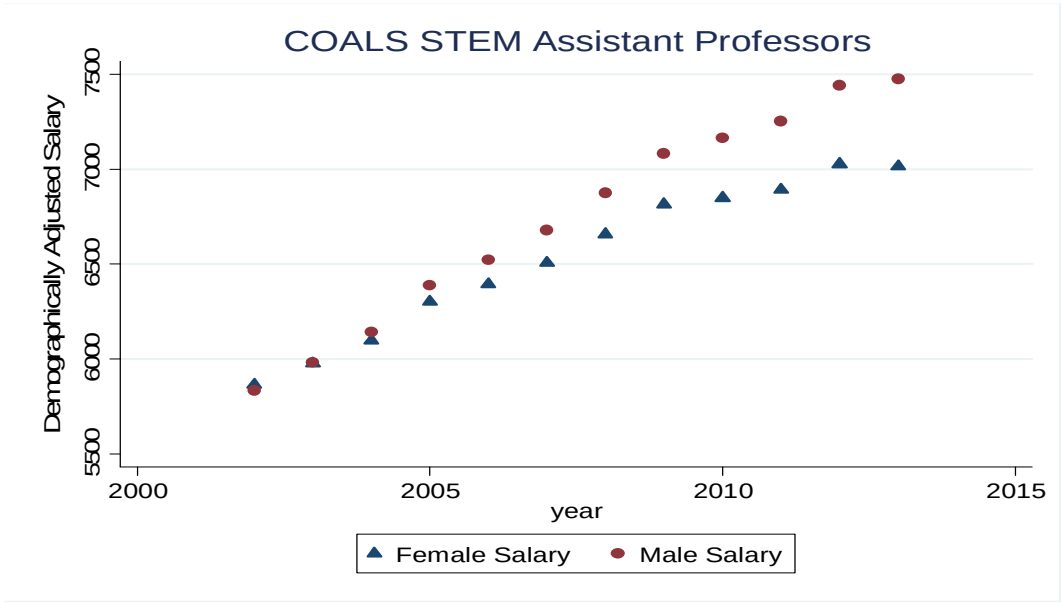
There is no evidence that salaries were systematically related to gender in the remaining TAMU colleges under analysis. On average, salaries for female full professors in the STEM departments of the College of Liberal Arts were 5 percent lower than the salaries for male full professors, but there is so much variation in salary among full professors in that college that the difference by gender is not statistically significant. A similar pattern occurred among the full professors in the College of Geosciences. In the College of Engineering, female faculty at all ranks earned slightly more than male faculty (after demographic adjustments) but again the differences were not statistically significant.

Figures 1-9 illustrate the changes in demographically-adjusted male and female salaries over time. As with the evidence in Table 2, the figures have been constructed holding faculty demographics constant. (Please note that in this context, a salary freeze can translate into a decline in demographically adjusted salaries because salaries are no longer rising with years of service.)

As the figures illustrate, the differential between male and female salaries has been growing over in the STEM departments of the College of Agriculture and Life Sciences, narrowing over time in the College of Education, and following no discernible time trend in the Colleges of Architecture, Engineering, Geosciences, Liberal Arts, Science and Veterinary Medicine and in the Mays School of Business. Salaries appear to have widened slightly in the College of Architecture and the Non-STEM departments of the College of Agriculture and Life Sciences, but the divergence is only significant at the 10-percent level.

Figure 1a: College of Agriculture and Life Sciences STEM:





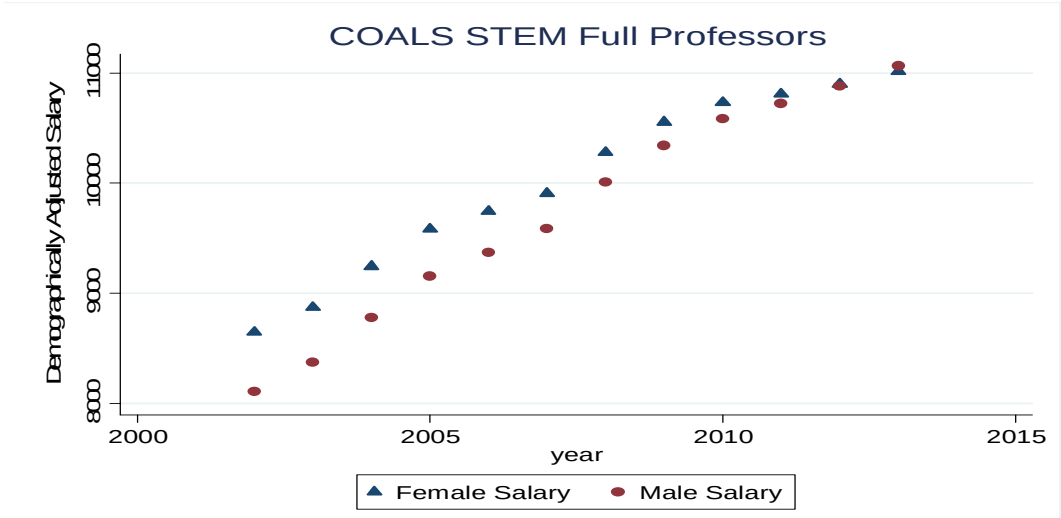
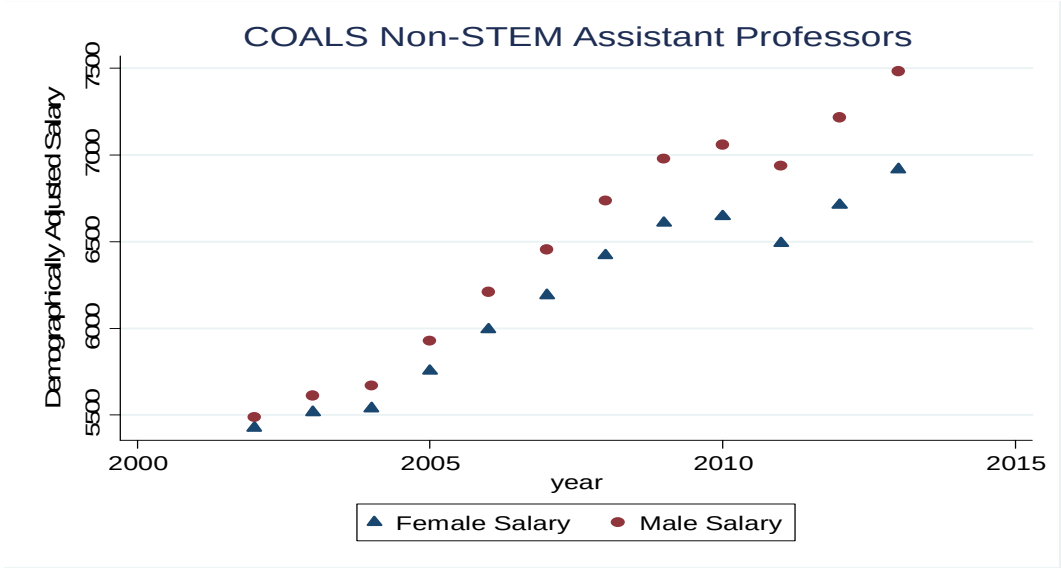
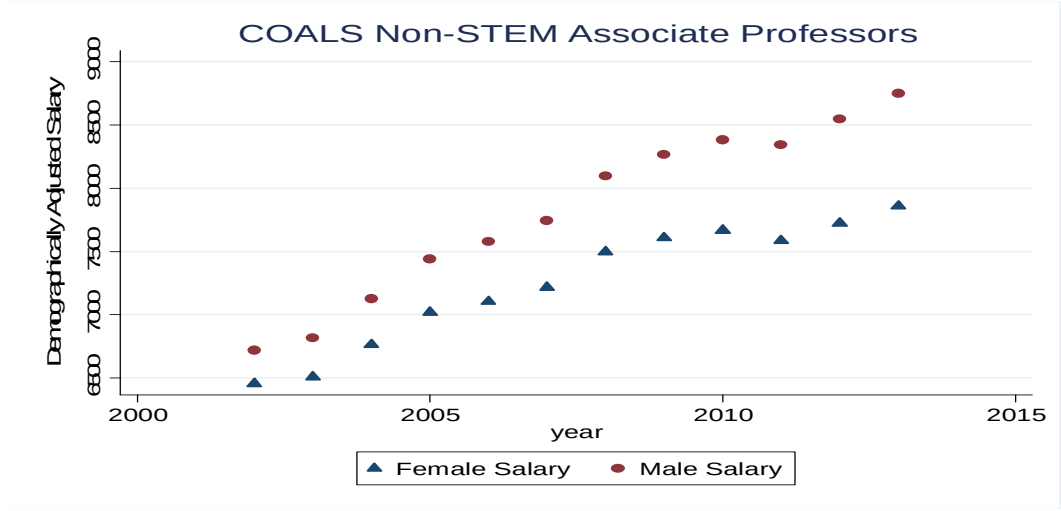


Figure 1b: College of Agriculture and Life Sciences Non-STEM:





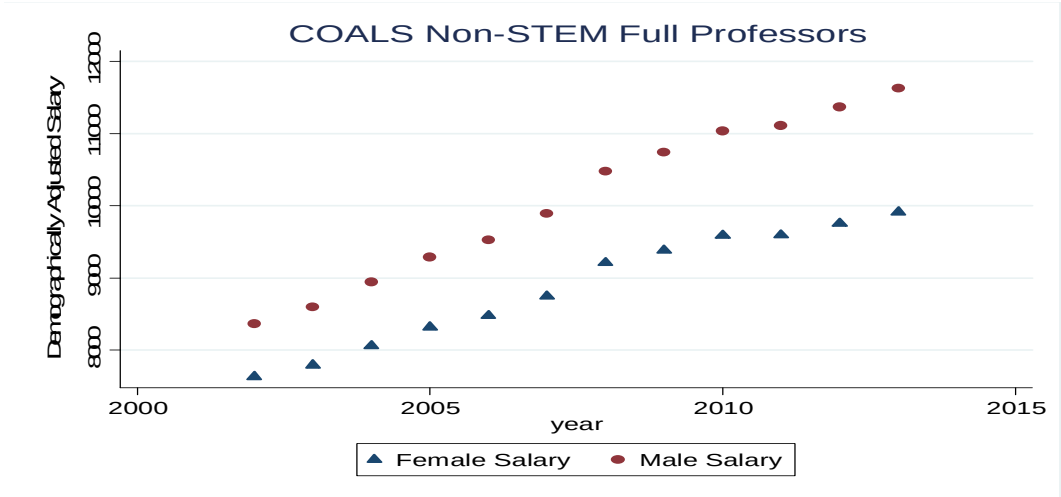
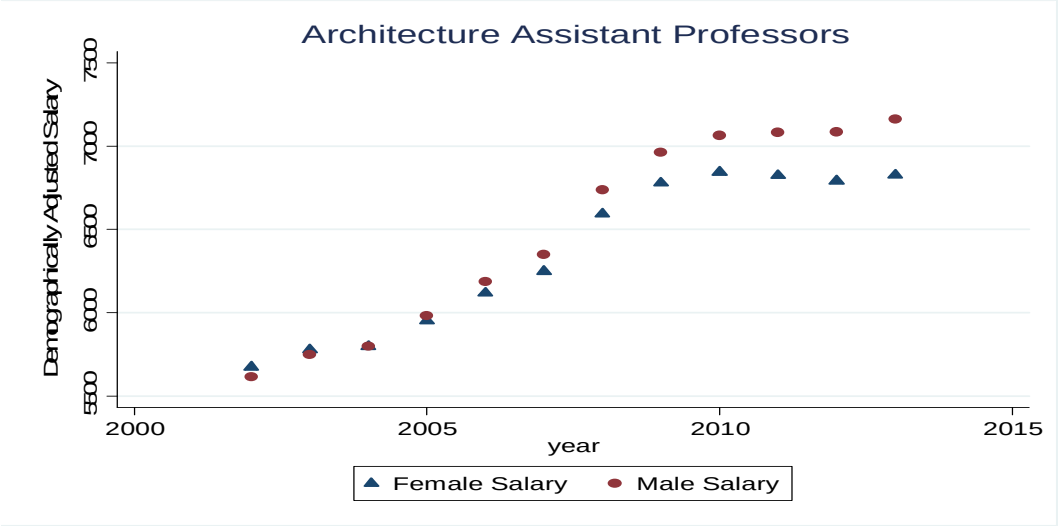
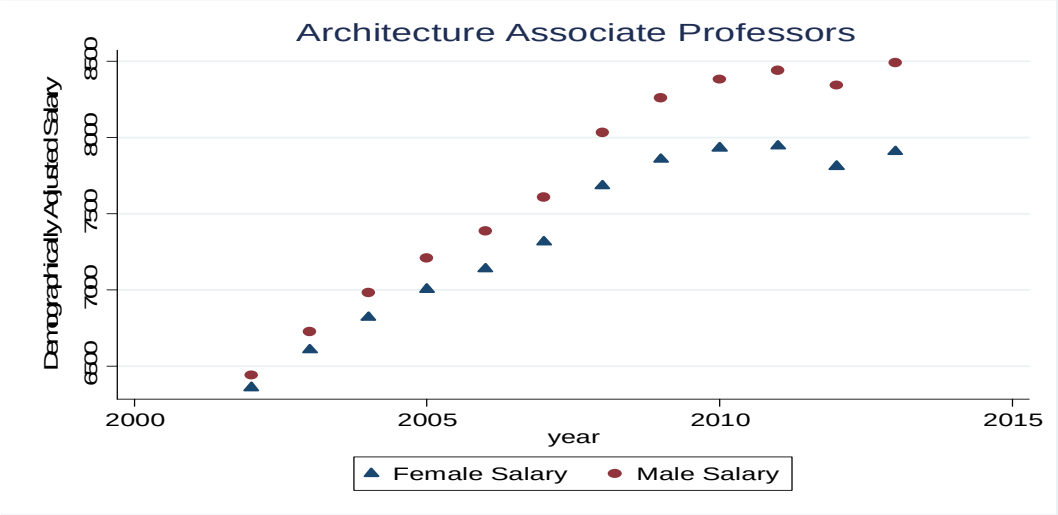


Figure 2: College of Architecture





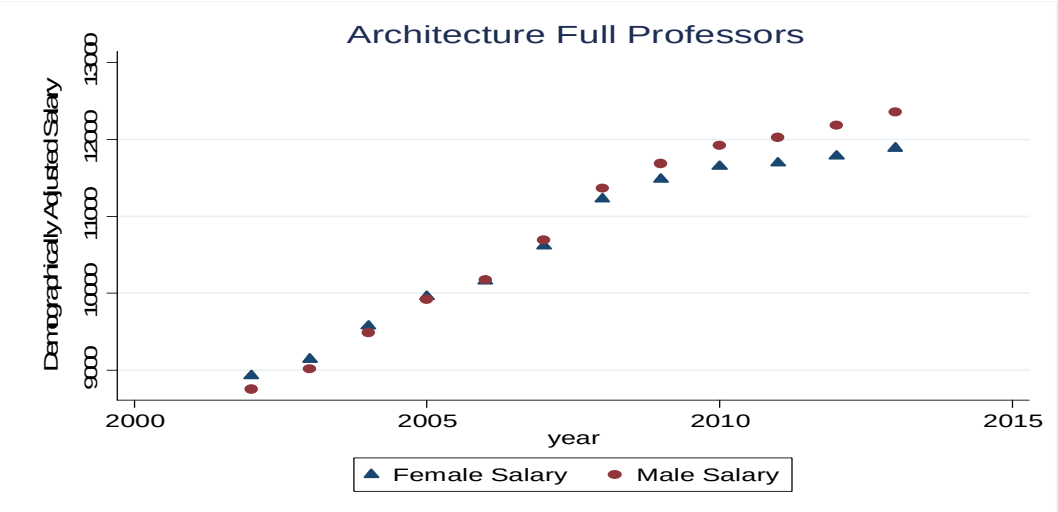
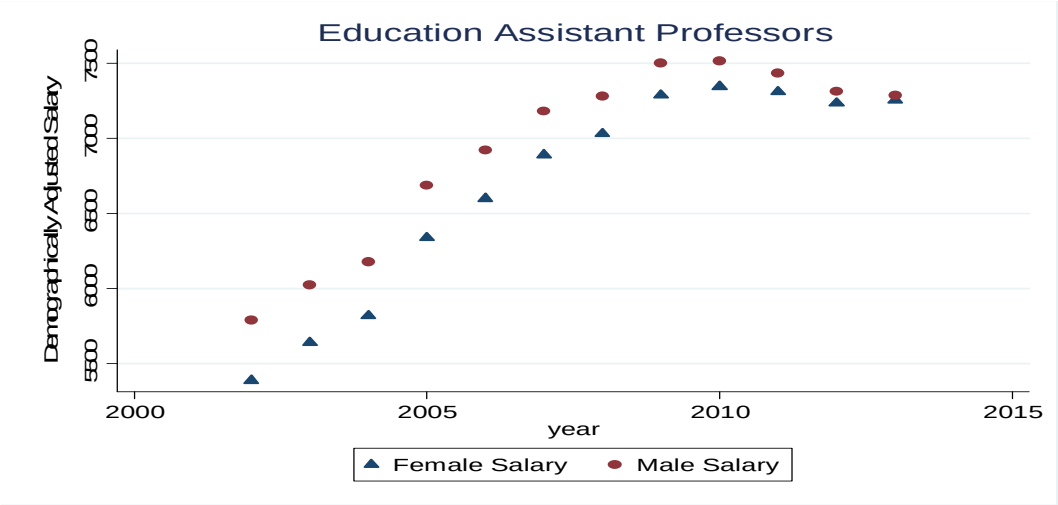
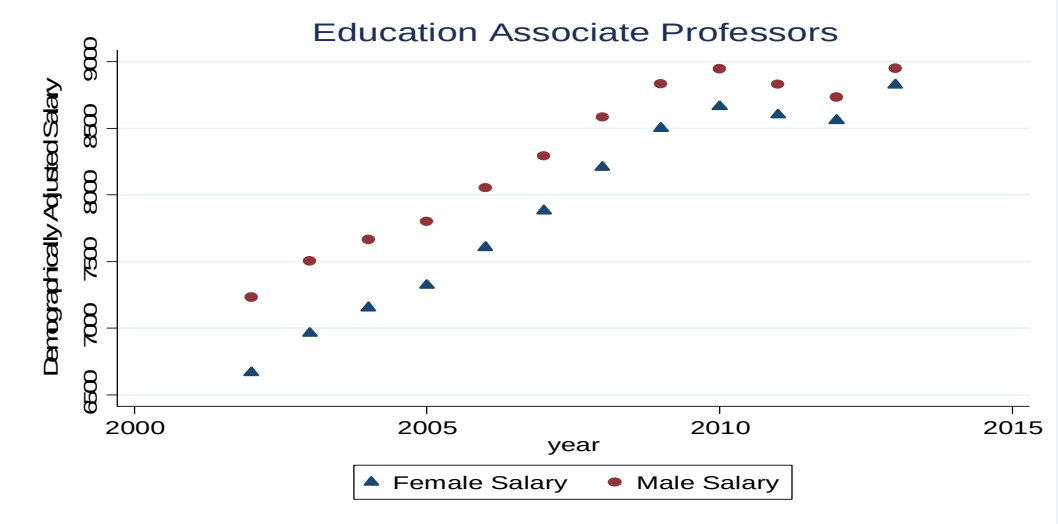


Figure 3: College of Education





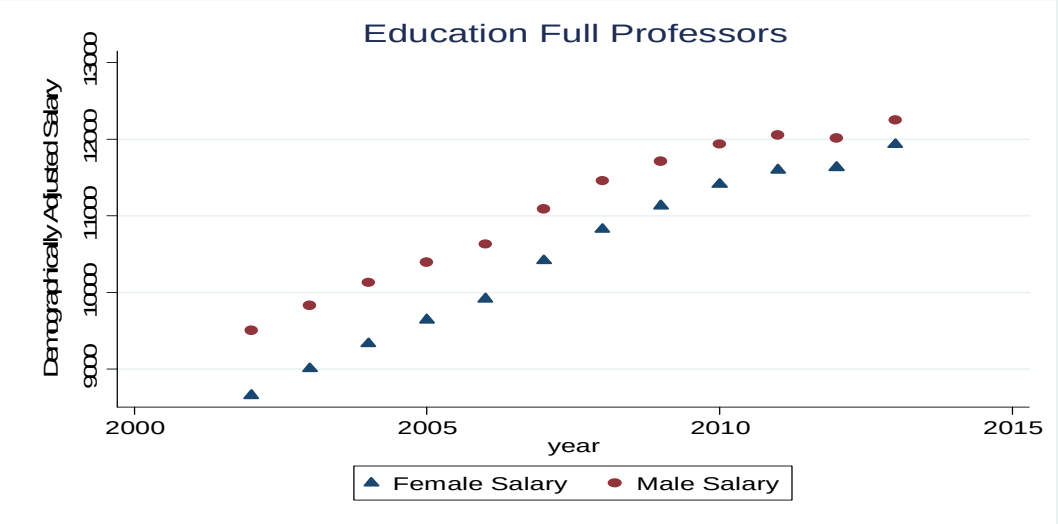
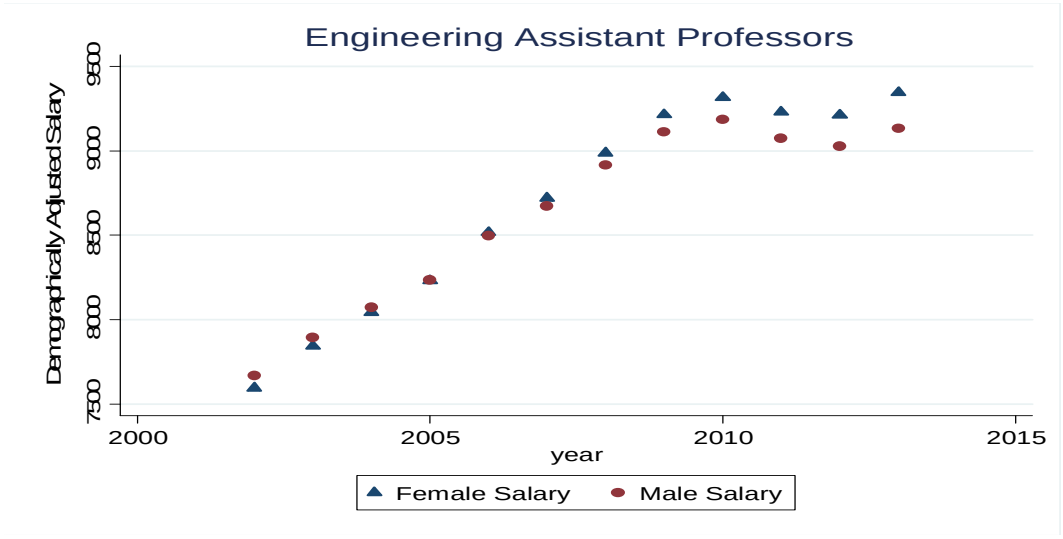
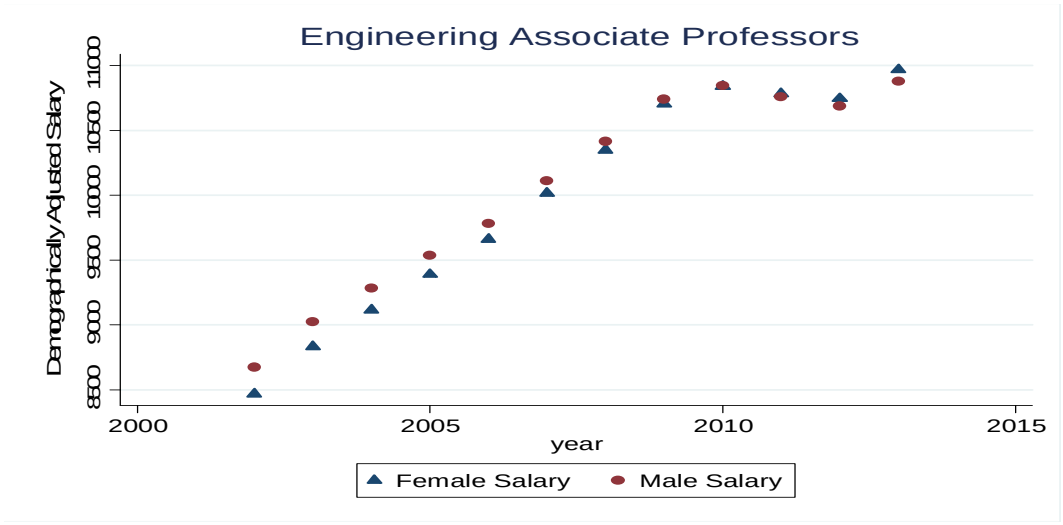


Figure 4: College of Engineering





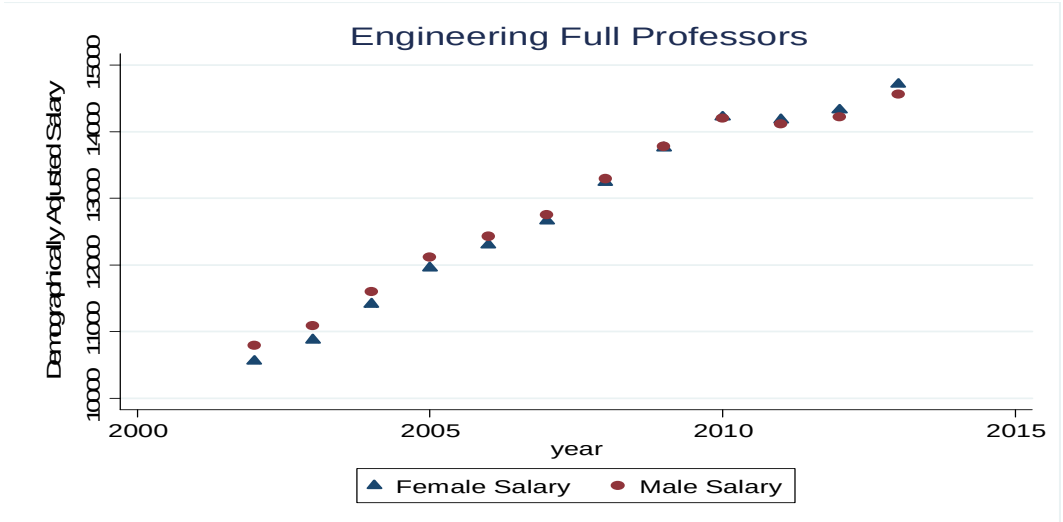
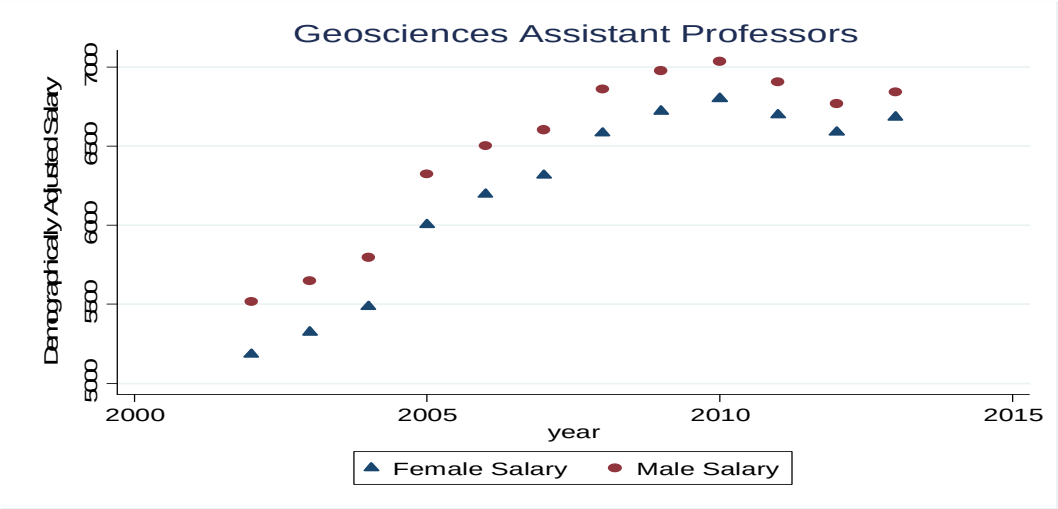
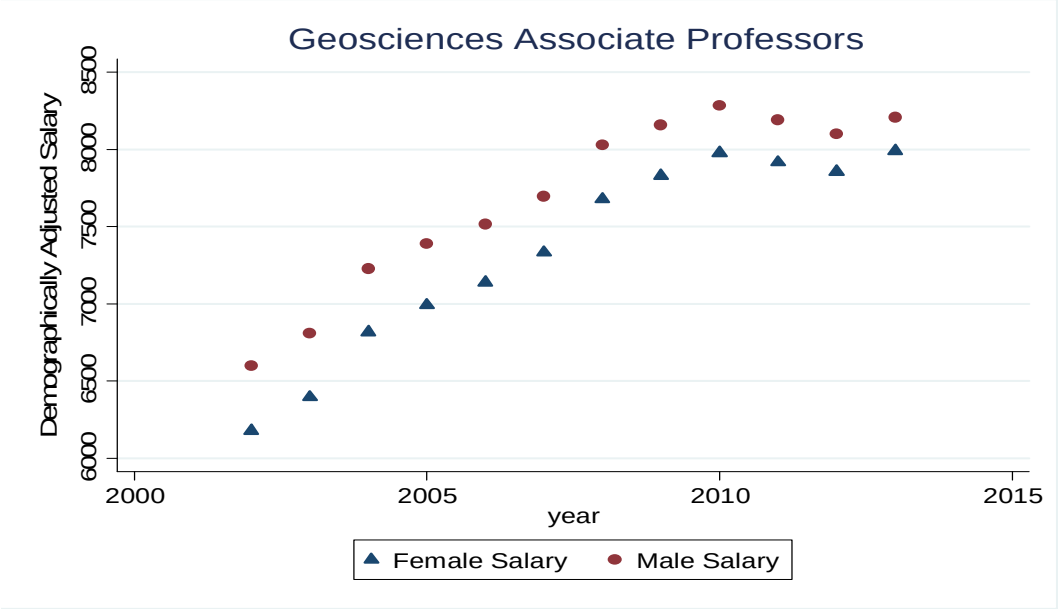


Figure 5: College of Geosciences





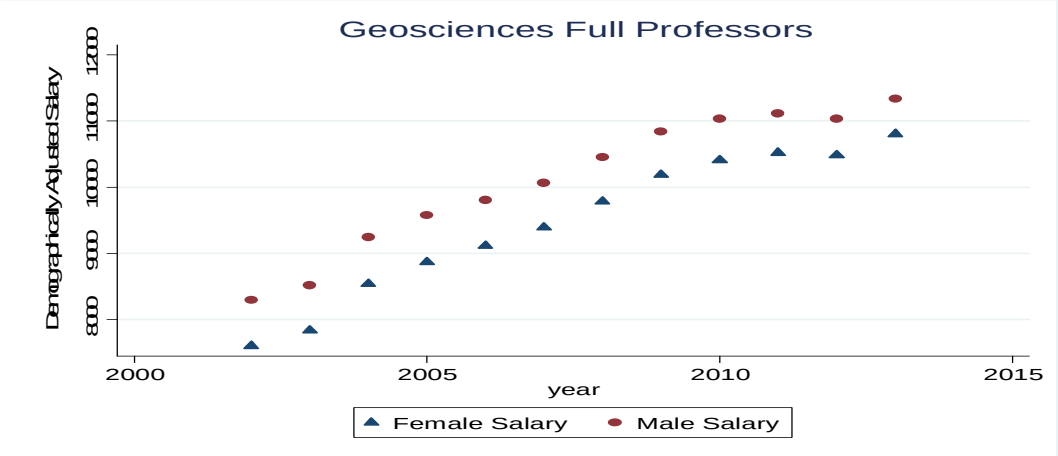
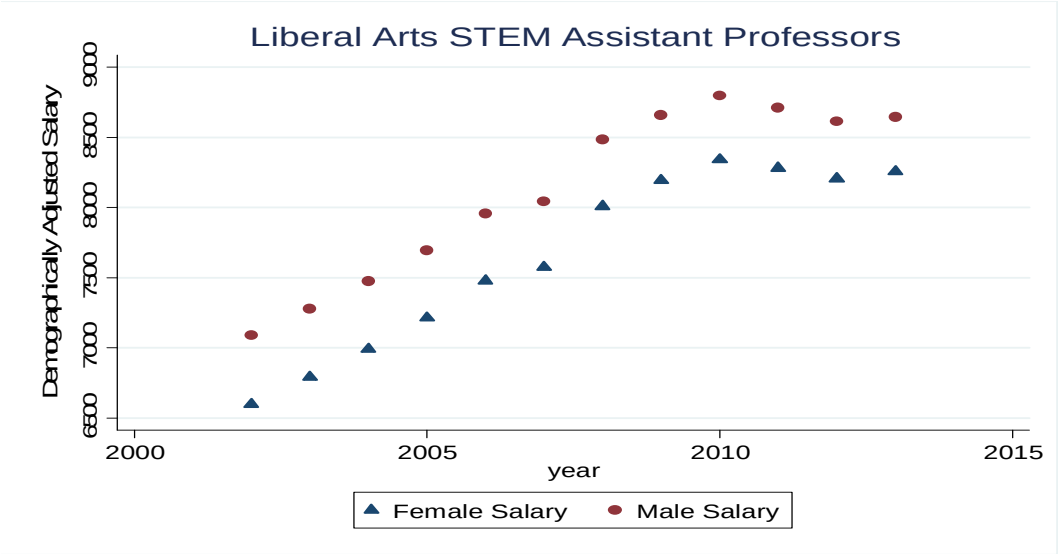
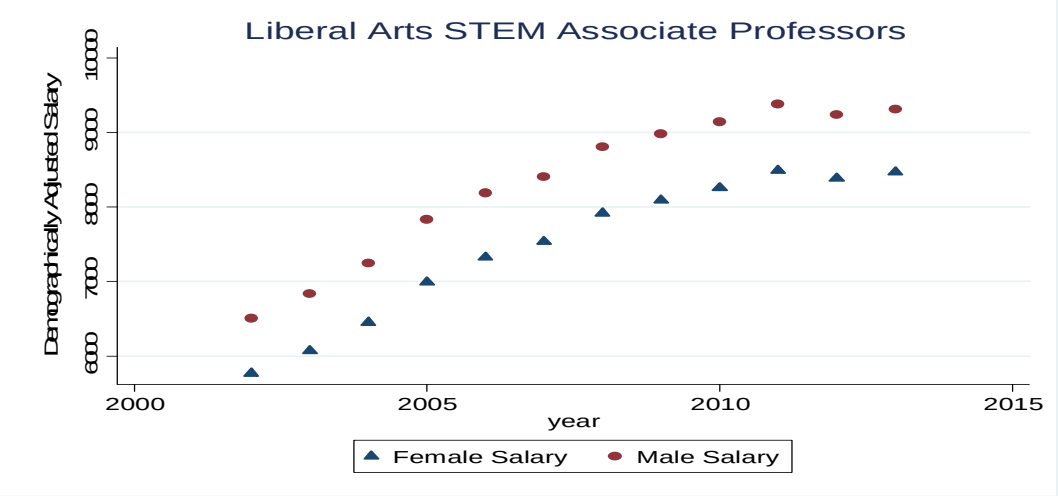


Figure 6a: College of Liberal Arts STEM





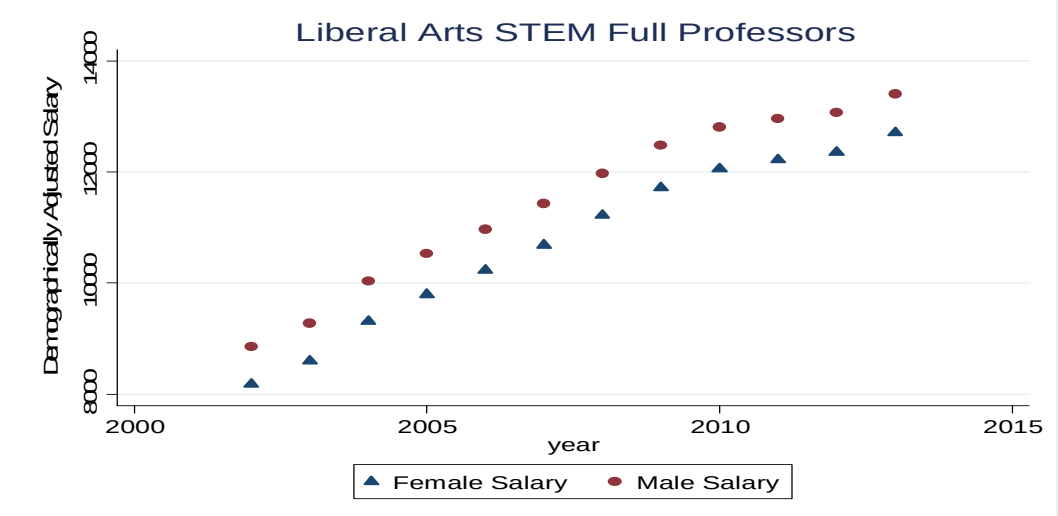
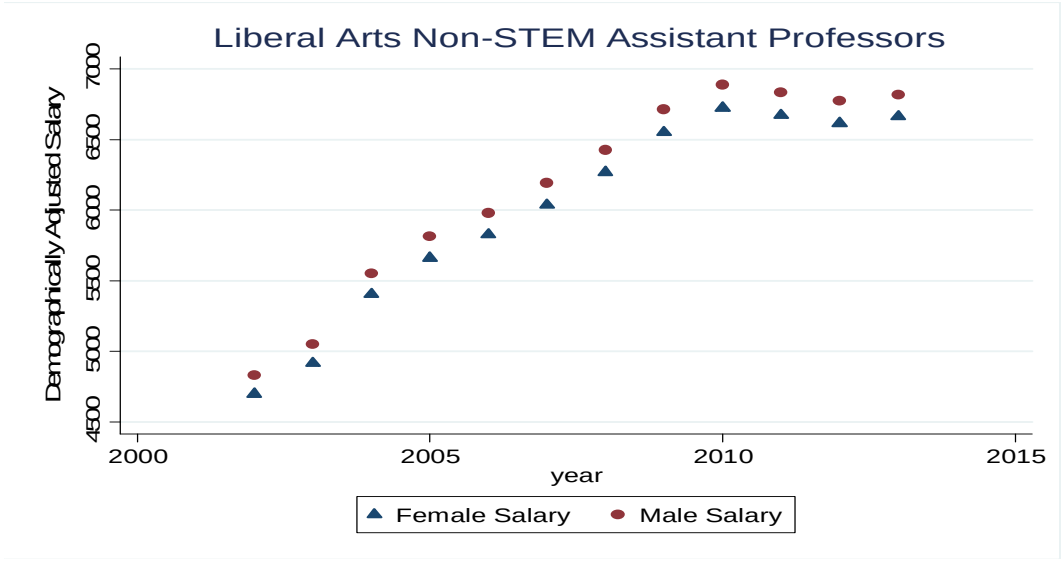
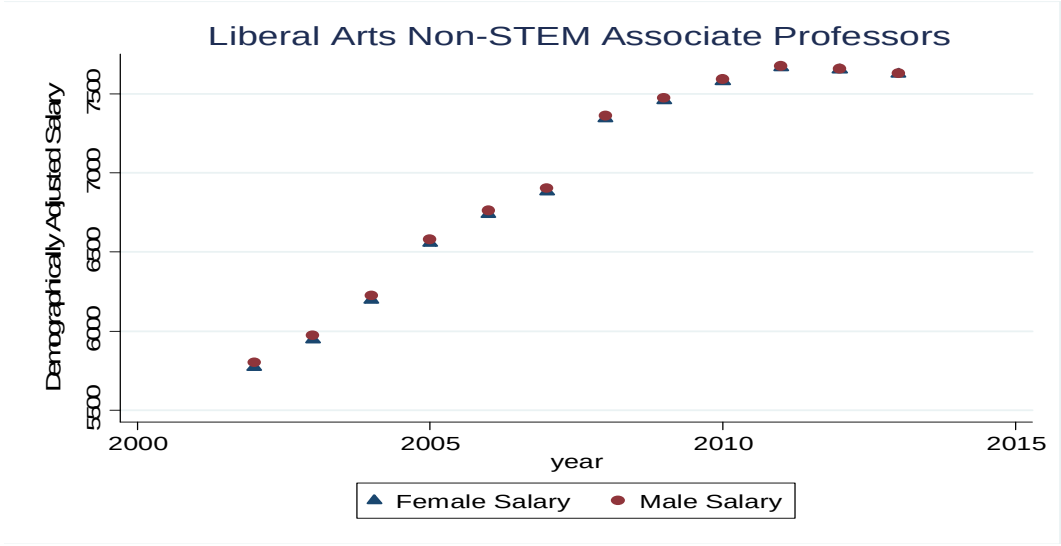


Figure 6b: College of Liberal Arts Non-STEM





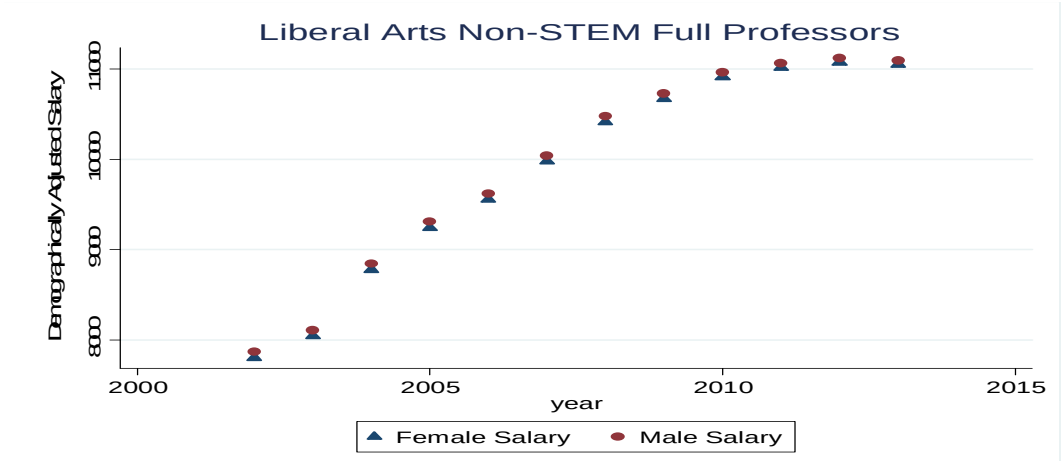
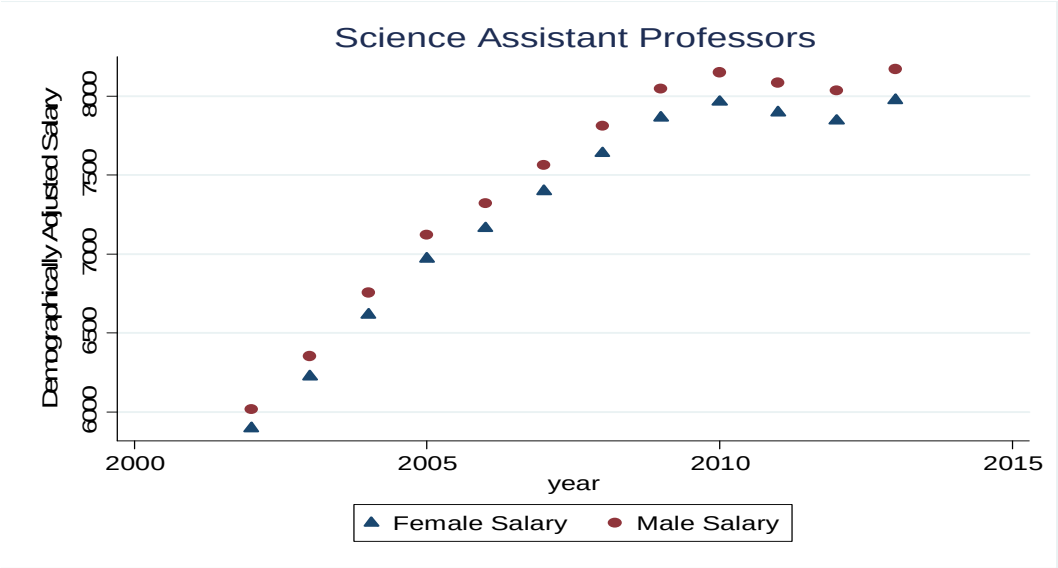
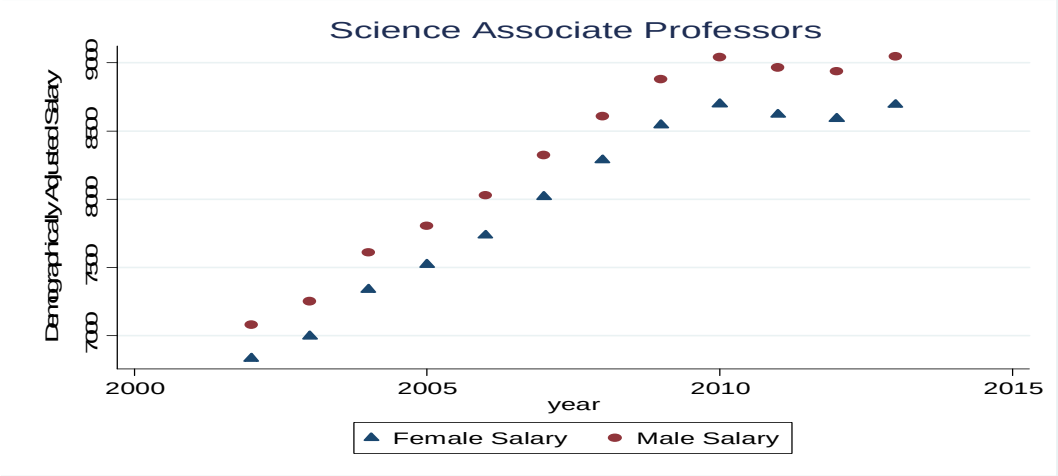


Figure 7: College of Science





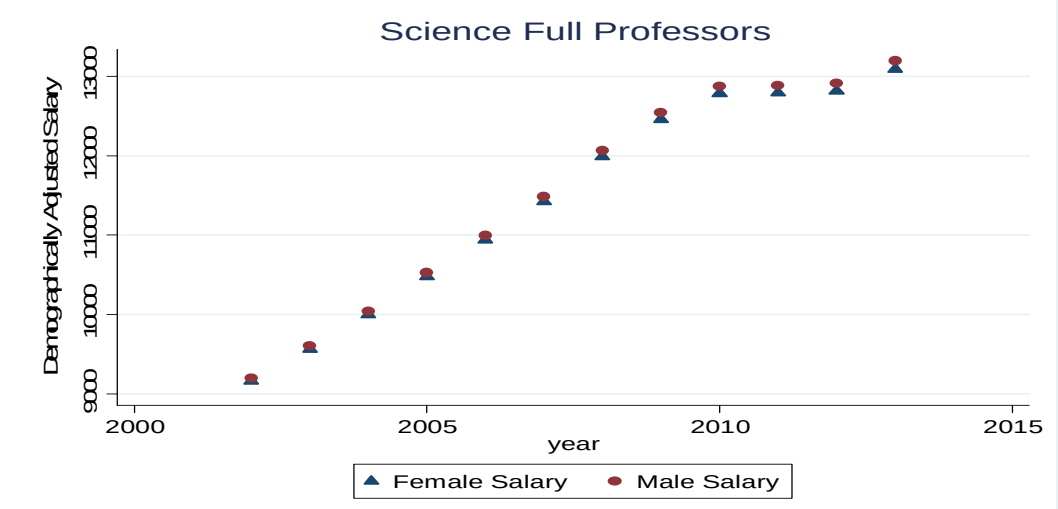
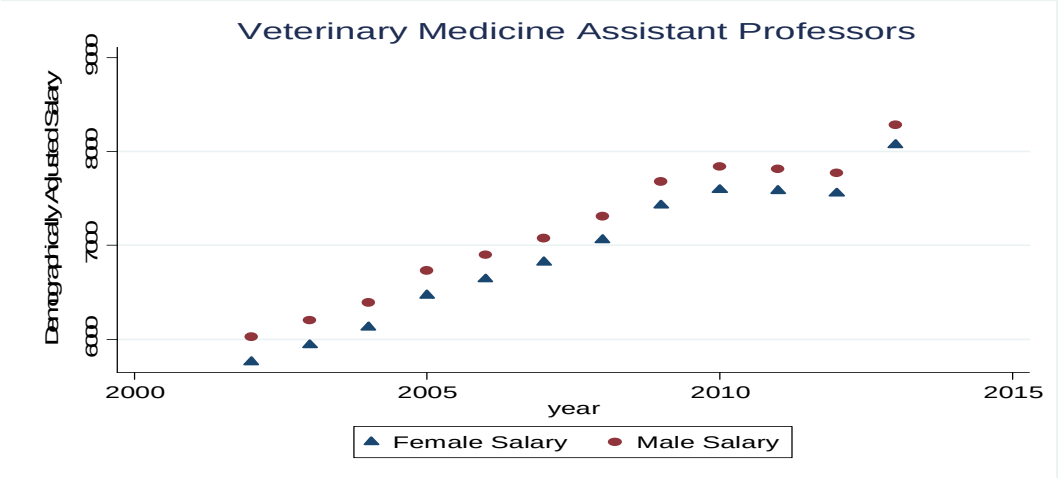
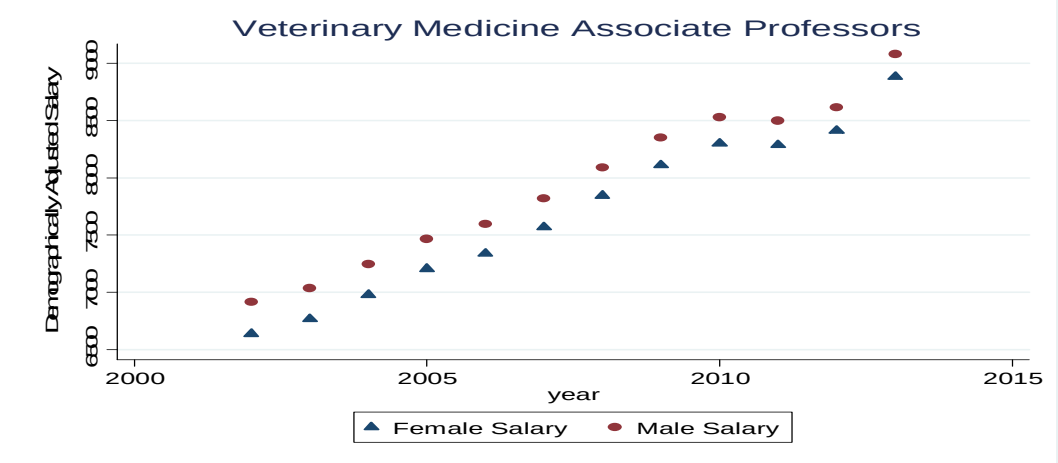


Figure 8: College of Veterinary Medicine





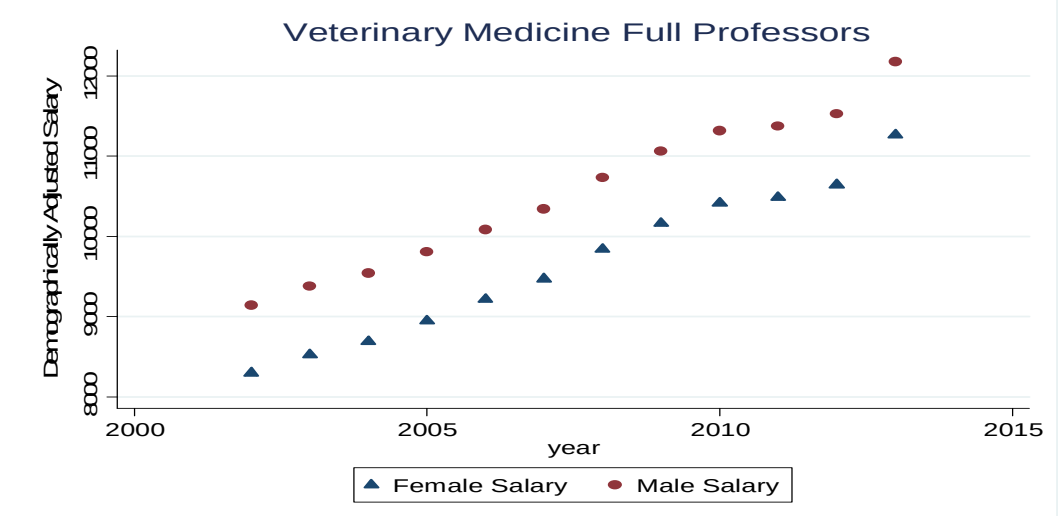
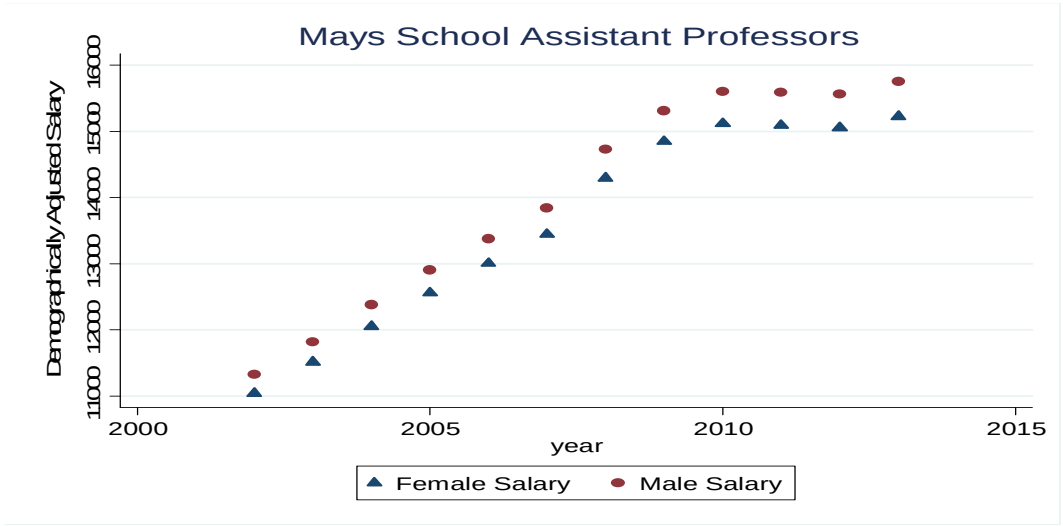
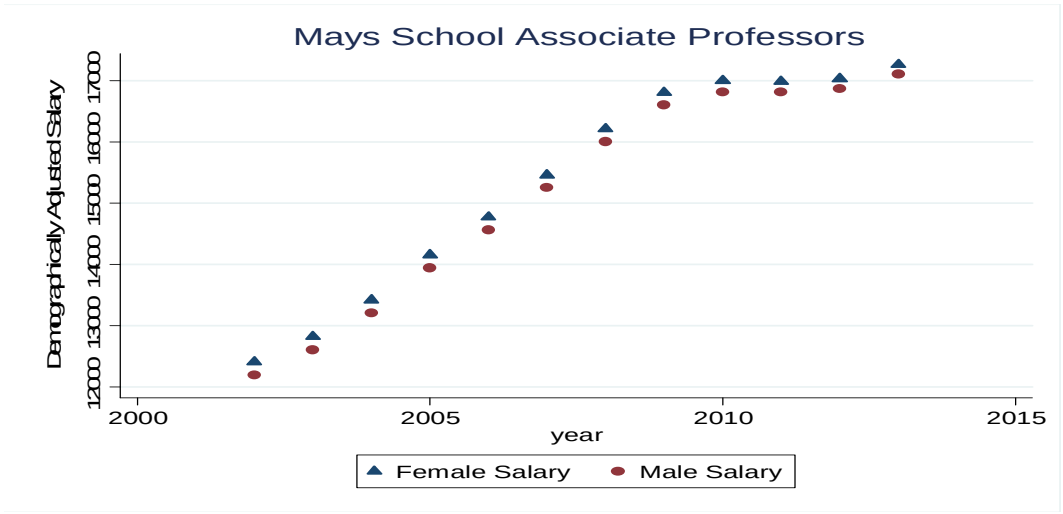
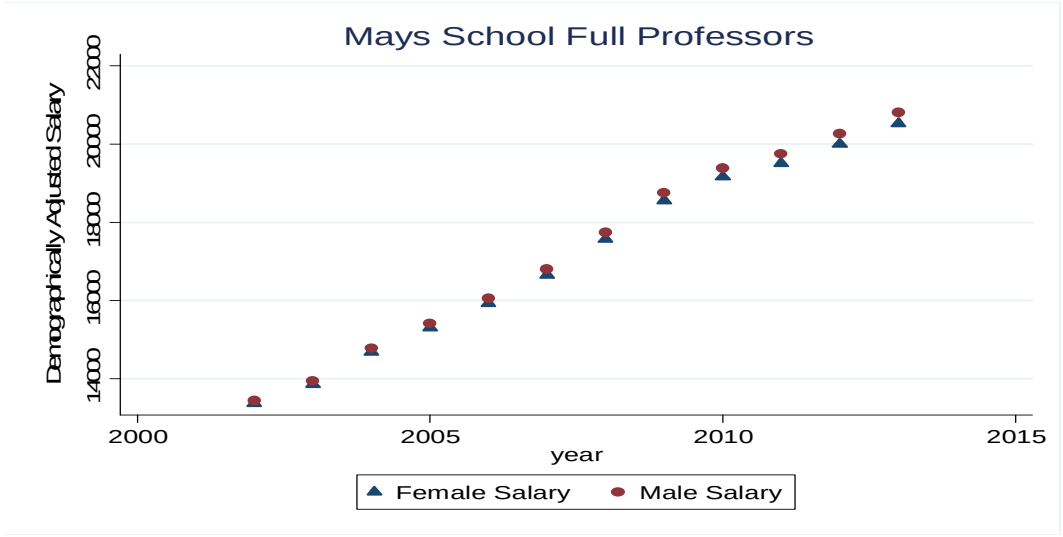


Figure 9: Mays School of Business







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 12 in fiscal year 2013.
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.
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	Takes on the value of one if the highest degree held is a master's degree, 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 12 in fiscal year 2013. Department trends are not used in the models for the College of Architecture 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, 2001-02 through 2012-13

VARIABLES	COALS STEM	Engineering	Geoscience	Science	Liberal Arts STEM
Male	-0.0115	0.0126	0.0661**	0.0198	0.0740***
	(0.0283)	(0.0169)	(0.0283)	(0.0276)	(0.0220)
Male trend	0.00626***	-0.00296	-0.00355*	0.000397	-0.00232
	(0.00223)	(0.00204)	(0.00209)	(0.00211)	(0.00178)
Male Associate	-0.00154	0.0147	0.00338	0.0155	0.0491**
	(0.0229)	(0.0151)	(0.0153)	(0.0149)	(0.0214)
Male Full Plus	-0.0589	0.0126	0.0247	-0.0163	0.00763
	(0.0399)	(0.0193)	(0.0302)	(0.0294)	(0.0487)
Associate Professor	0.105***	0.107***	0.0987***	0.101***	0.169***
	(0.0234)	(0.0140)	(0.0121)	(0.0164)	(0.0147)
Dean/VP		0.265***	0.255***	0.260***	
		(0.0319)	(0.0297)	(0.0548)	
Distinguished Professor	0.395***	0.392***	0.357***	0.393***	0.809***
	(0.0507)	(0.0282)	(0.0668)	(0.0336)	(0.101)
Full Professor	0.318***	0.263***	0.241***	0.321***	0.379***
	(0.0390)	(0.0187)	(0.0263)	(0.0308)	(0.0481)
White	0.00921	0.00564	-0.0455**	0.00794	-0.0186
	(0.0248)	(0.0122)	(0.0225)	(0.0230)	(0.0222)
Current admin	0.0493***	0.0605***	0.0180	0.0969***	
	(0.0123)	(0.0170)	(0.0127)	(0.0233)	
Ever admin	0.0266	0.0682***	0.0766**	0.175***	0.116***
	(0.0336)	(0.0204)	(0.0326)	(0.0421)	(0.0378)
Years since degree	0.0106**	0.0176***	0.0289***	0.0289***	0.0238***
	(0.00451)	(0.00240)	(0.00444)	(0.00325)	(0.00384)
Years since degree unknown	-0.00944	-0.0132	-0.0379	0.0729	-0.0475
	(0.0406)	(0.0198)	(0.0443)	(0.0452)	(0.0376)
Years Since Degree, Squared	-0.000243**	-0.000242***	-0.000411***	-0.000219***	-0.000290***
	(0.000117)	(3.75e-05)	(7.09e-05)	(4.48e-05)	(6.93e-05)

Years since First Hired	0.00285	-0.00282	-0.00604*	-0.0170***	-0.0120***
	(0.00223)	(0.00187)	(0.00314)	(0.00237)	(0.00300)
Break in service	0.0651**	0.0438**	0.0630	0.0730	0.0293
	(0.0330)	(0.0221)	(0.0429)	(0.0555)	(0.0692)
Term length	-0.112	0.0100	0.00934	0.0337	0.0460
	(0.0697)	(0.0236)	(0.0173)	(0.0221)	(0.0399)
Hired As Advanced Assistant	0.276**	0.101**	0.0501	-0.0445	-0.0431
	(0.140)	(0.0414)	(0.0498)	(0.0359)	(0.0499)
Hired As Associate	0.0931***	-0.00629	-0.0237	-0.133***	0.0460
	(0.0314)	(0.0262)	(0.0388)	(0.0442)	(0.0526)
Hired as Full	0.375***	0.112***	0.000963	-0.0507	0.135*
	(0.0783)	(0.0411)	(0.0697)	(0.0563)	(0.0777)
Rank at Hire Unknown	0.0743	0.00613	0.0832*	-0.167***	0.0540
	(0.0503)	(0.0298)	(0.0438)	(0.0442)	(0.0866)
Special Degree	0.143***	0.150***	-0.0395		0.0314
	(0.0506)	(0.0337)	(0.0313)		(0.0400)
DVM PhD	0.207***	0.317***			0.188***
	(0.0711)	(0.114)			(0.0679)
Newly tenured	0.00353	-0.0103***	0.00826	-0.00524	-0.0184*
	(0.0101)	(0.00362)	(0.00676)	(0.00606)	(0.00976)
Other promotion	-0.0180	-0.0191***	-0.0178***	-0.0239***	-0.0243*
	(0.0120)	(0.00544)	(0.00670)	(0.00827)	(0.0140)
Demotion	0.0383**	0.0458***	0.0239**	0.0648***	0.0293
	(0.0182)	(0.0111)	(0.0102)	(0.0174)	(0.0234)
Title change	0.00221	0.0372***	0.0171	0.0169	-0.0261
	(0.0116)	(0.0135)	(0.0149)	(0.0112)	(0.0220)
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	yes
Observations	2113	4017	1076	2783	1661
Number of UINs	280	531	139	327	243

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix Table A3: The Estimated Relationship Between Salaries and Faculty Demographics in Non-STEM Departments, 2001-02 through 2012-13

VARIABLES	Architecture	COALS Non-STEM	Education	Liberal Arts Non-STEM	Mays	Veterinary Medicine
Male	-0.0157	0.00535	0.0783***	0.0281	0.0245	0.0473**
	(0.0288)	(0.0390)	(0.0211)	(0.0194)	(0.0284)	(0.0238)
Male trend	0.00530*	0.00611*	-0.00614***	-0.000415	0.000778	-0.00173
	(0.00274)	(0.00370)	(0.00207)	(0.00209)	(0.00359)	(0.00178)
Male Associate	0.0234	0.0287	0.00944	-0.0224	-0.0427	-0.00442
	(0.0337)	(0.0201)	(0.0197)	(0.0147)	(0.0267)	(0.0158)
Male Full Plus	-0.00901	0.0808	0.0218	-0.0190	-0.0198	0.0516**
	(0.0505)	(0.0505)	(0.0301)	(0.0304)	(0.0384)	(0.0202)
Associate Professor	0.117***	0.0616*	0.131***	0.121***	0.132***	0.0741***
	(0.0136)	(0.0319)	(0.0145)	(0.0115)	(0.0227)	(0.0167)
Dean/VP	0.179***	0.299***	0.332***	0.365***	0.375***	0.268***
	(0.0675)	(0.112)	(0.0363)	(0.0421)	(0.0458)	(0.0513)
Distinguished Professor	0.340***	0.289***	0.392***	0.555***	0.444***	0.586***
	(0.0666)	(0.0598)	(0.0395)	(0.0487)	(0.0437)	(0.100)
Full Professor	0.287***	0.166***	0.293***	0.332***	0.286***	0.148***
	(0.0436)	(0.0571)	(0.0286)	(0.0291)	(0.0361)	(0.0219)
White	-0.00892	-0.0361	-0.00290	-0.0144	-0.0249	0.00573
	(0.0210)	(0.0316)	(0.0188)	(0.0207)	(0.0203)	(0.0263)
Current admin	0.135***	0.0249	0.0567***	0.00702	0.0520**	0.0183
	(0.0472)	(0.0157)	(0.0114)	(0.0272)	(0.0213)	(0.0215)
Ever admin	0.138***	0.0540	0.0626**	0.186***	0.0855**	0.155***
	(0.0362)	(0.0333)	(0.0274)	(0.0299)	(0.0360)	(0.0363)
Years since degree	0.00781**	0.0241***	0.0147***	0.0139***	0.0202***	0.0132***
	(0.00379)	(0.00375)	(0.00244)	(0.00322)	(0.00460)	(0.00255)
Years since degree unknown	-0.0811**	0.0241	0.0195	-0.000218	-0.0423	0.0646
	(0.0371)	(0.0372)	(0.0286)	(0.0271)	(0.0259)	(0.0422)
Years Since Degree, Squared	-0.000103	-0.000402***	-0.000241***	-4.51e-05	-0.000407***	-0.000138***
	(7.11e-05)	(6.81e-05)	(4.28e-05)	(6.79e-05)	(9.96e-05)	(4.23e-05)

Years since First Hired	-0.00178	-0.00328	-0.00135	-0.00817***	-0.0122***	-0.00451**
	(0.00232)	(0.00258)	(0.00174)	(0.00221)	(0.00273)	(0.00202)
Break in service	0.0599**	0.0564*	0.0301	-0.0379	0.203***	0.0369*
	(0.0261)	(0.0322)	(0.0275)	(0.0386)	(0.0556)	(0.0209)
Term length	0.0327	-0.0163	-0.128***	0.0383	-0.0714	-0.0898
	(0.0307)	(0.0391)	(0.0284)	(0.0389)	(0.0492)	(0.140)
Hired As Advanced	0.0205	0.133***	0.00390	-0.0415*	-0.000374	0.0242
Assistant	(0.0554)	(0.0393)	(0.0505)	(0.0242)	(0.0668)	(0.0555)
Hired As Associate	0.148***	0.0447	0.0292	-0.00625	0.0124	-0.0185
	(0.0545)	(0.0473)	(0.0349)	(0.0457)	(0.0443)	(0.0284)
Hired as Full	0.281***	0.184***	0.166***	0.0664	0.141**	0.143**
	(0.0627)	(0.0605)	(0.0525)	(0.0696)	(0.0574)	(0.0579)
Rank at Hire Unknown	0.169**	0.0252	0.0825**	-0.103**	0.0119	0.0454
	(0.0711)	(0.0477)	(0.0405)	(0.0473)	(0.0484)	(0.0333)
MA	0.388***					
	(0.0419)					
Special Degree	0.00862		0.00952	0.0712	-0.0435	-0.0455
	(0.0341)		(0.0229)	(0.0494)	(0.109)	(0.0278)
DVM PhD	0.0372		0.0822	-0.126*		-0.0433
	(0.0424)		(0.173)	(0.0706)		(0.0279)
Board certified						0.0222
						(0.0293)
Dual certified						0.00257
						(0.0171)
Newly tenured	-0.0105	0.00282	0.00800	-0.00810	-0.0215*	0.00164
	(0.00996)	(0.00995)	(0.00699)	(0.00725)	(0.0128)	(0.00592)
Other promotion	-0.0273*	-0.00731	-0.0189**	-0.0380***	-0.0263***	-0.00504
	(0.0151)	(0.00876)	(0.00817)	(0.00913)	(0.00978)	(0.00554)
Demotion	0.0373***	0.0307	0.0324***	0.0814***	0.0141	0.0201
	(0.0101)	(0.0271)	(0.00999)	(0.0192)	(0.0144)	(0.0376)
Title change	-0.0115	-0.00332	-0.0133	0.0207	-0.0211	-0.00349
	(0.0115)	(0.0299)	(0.0267)	(0.0204)	(0.0137)	(0.00780)
Year indicators	yes	yes	yes	yes	yes	yes

Year X rank indicators	yes	yes	yes	yes	yes	yes
Department Indicators	yes	yes	yes	yes	yes	Yes
Department*trend	no	yes	yes	yes	yes	yes
Observations	1029	1211	1331	2225	1183	1430
Number of UINs	145	167	190	308	172	198

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix Table A3: Demographically Adjusted Average Monthly Salaries by College and Faculty Rank, 2012-13, Toeplitz Specification

	Female Faculty	Male Faculty	
College of Agriculture and Life Science			
STEM Assistant Professor	$7,114	$7,590	**
STEM Associate Professor	$8,255	$8,752	*
STEM Full Professor	$10,675	$10,705	
Non-STEM Assistant Professor	$7,256	$7,535	
Non-STEM Associate Professor	$8,249	$8,869	**
Non-STEM Full Professor	$10,391	$11,652	***
College of Architecture			
Assistant Professor	$6,902	$7,174	*
Associate Professor	$8,108	$8,546	*
Full Professor	$11,287	$11,963	
College of Education and Human Development			
Assistant Professor	$7,384	$7,648	
Associate Professor	$8,978	$9,178	
Full Professor	$11,502	$11,875	
College of Engineering			
Assistant Professor	$9,164	$9,095	
Associate Professor	$11,170	$11,147	
Full Professor	$14,605	$14,232	
College of Geosciences			
Assistant Professor	$6,631	$6,904	
Associate Professor	$8,094	$8,587	*
Full Professor	$10,705	$11,164	
College of Liberal Arts			
STEM Assistant Professor	$8,247	$8,839	**
STEM Associate Professor	$8,861	$9,840	***
STEM Full Professor	$11,630	$12,563	***
Non-STEM Assistant Professor	$6,631	$6,755	
Non-STEM Associate Professor	$7,987	$7,916	
Non-STEM Full Professor	$11,169	$11,299	
College of Science			
Assistant Professor	$8,536	$8,661	
Associate Professor	$9,768	$9,940	
Full Professor	$12,539	$12,714	
College of Veterinary Medicine			
Assistant Professor	$8,125	$8,282	
Associate Professor	$9,200	$9,347	
Full Professor	$11,102	$11,711	**

	Female Faculty	Male Faculty
Mays School of Business		
Assistant Professor	$15,142	$16,106
Associate Professor	$17,091	$17,458
Full Professor	$19,618	$20,082

Note: Demographically adjusted average salaries are based on a maximum likelihood analysis using the same data as Table 2 but assuming a Toeplitz error structure. The salary model controls for systematic differences in salary arising from differences in gender, race, faculty rank, years since degree, years since hiring, rank at hiring, department, highest degree held, time trends and random effects for individuals. The asterisks indicate that the difference between male and female salaries is statistically significant at the 1-percent (***), 5-percent (**), or 10-percent (*) levels.