

Gender Salary Analysis

Academic year 2013-2014

Data

- Assistant Professor, Associate Professor, and Professor
 - Both tenure and non-tenure streams
 - Excludes clinical faculty in the School of Medicine
 - Physical Education and Athletics includes instructors.
- Analyses were conducted on base salary
 - Salaries for the School of Medicine and for the School of Dental Medicine are based on a 12-month appointment.
 - Salaries for all other schools are adjusted to a 9-month equivalent appointment and are adjusted to 100% effort.
- Data are for AY2013-2014. Changes made after November 1, 2013 are not reflected in this analysis.

Method

- Tables include descriptive statistics using the 9-month equivalent adjusted salary except for faculty in the School of Medicine and the School of Dental Medicine where numbers are based on a 12-month appointment.
- Cells where $N \leq 3$ were not included in the salary tables.
- Physical Education Faculty were excluded from Path Analysis.

Calculating Residual Values

1. Regression analysis conducted *for each school*

- Dependent variable = 9-month equivalent adjusted salary (12-month salary for MED and DENT).
- Independent variables = age, rank, years in rank, tenure status, years since hire, highest degree, years since highest degree.

2. Using the regression analysis, a predicted value was calculated for *each faculty member*. Faculty members with standardized residuals above three were removed from analysis.

3. This predicted value was subtracted from the faculty member's *actual salary*, giving each faculty member a “residual” value.

Graphs

- Graphs were created by plotting the average residual for men and the average residual for women *in each school*.
 - Positive residual for women in a particular school means that, on average, women in that school are being paid more than the independent variables would predict.
 - Negative residual for women means that, on average, women are being paid less than the independent variables would predict.
- This description of methods explains the RTIN bars on each chart. The RTOU bars were calculated in exactly the same way with one exception: rank and tenure were removed from the initial regression equation.

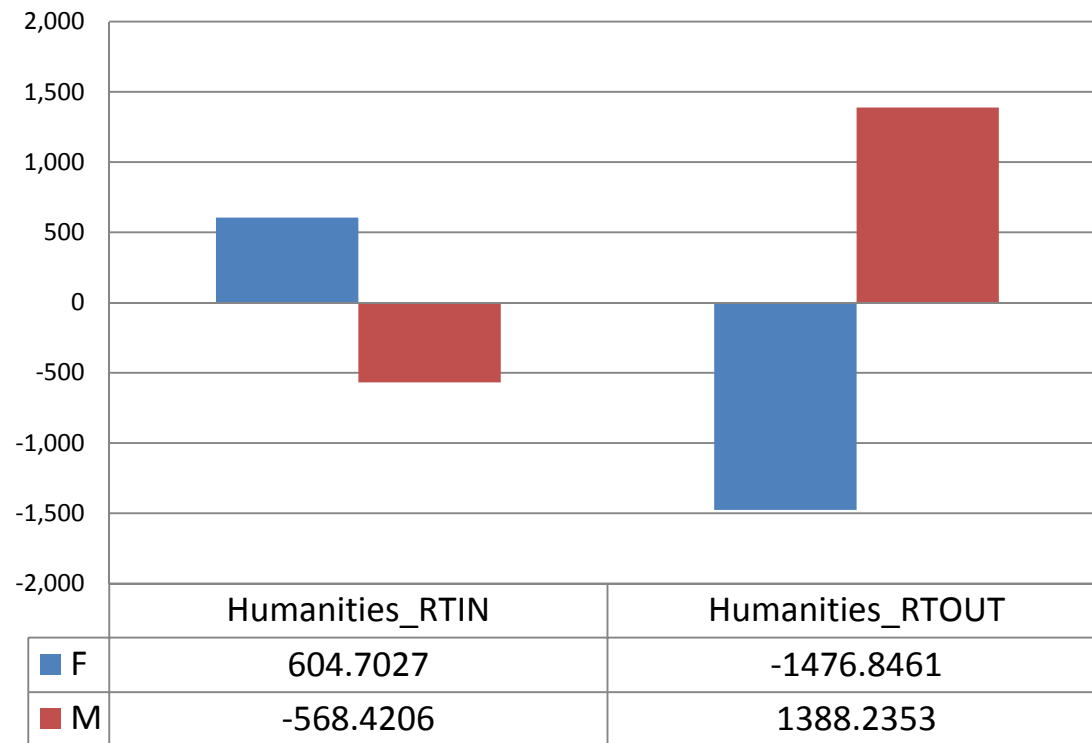
Limitations of the Analysis

- No measure of productivity in the regression analysis
- Examining residuals by group is a “broad brush” technique for highlighting where differences *might* exist.
- Analysis is *strongly* affected by extreme high/low values.

College of Arts and Sciences – Arts and Humanities

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	10	\$62,988	\$4,064
Assistant Professor	Female	16	\$60,780	\$3,224
Associate Professor	Male	18	\$75,598	\$5,791
Associate Professor	Female	24	\$77,777	\$14,855
Professor	Male	22	\$98,745	\$16,361
Professor	Female	7	\$100,227	\$12,606
		97		

College of Arts and Sciences – Arts and Humanities

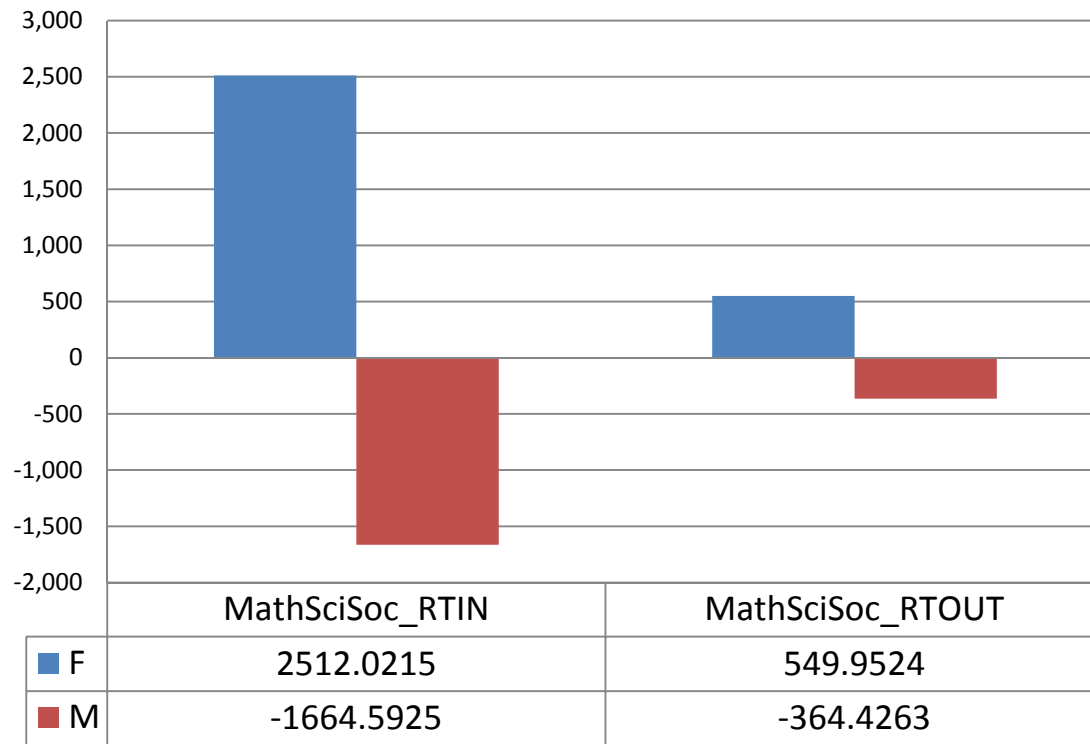


College of Arts and Sciences – Math, Natural Sciences, Social Sciences

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	11	\$72,704	\$5,270
Assistant Professor	Female	26	\$70,246	\$6,889
Associate Professor	Male	21	\$82,492	\$7,975
Associate Professor	Female	12	\$77,884	\$6,748
Professor	Male	51	\$109,770	\$21,058
Professor	Female	17	\$114,849	\$22,122

138

College of Arts and Sciences – Math, Natural Sciences, Social Sciences

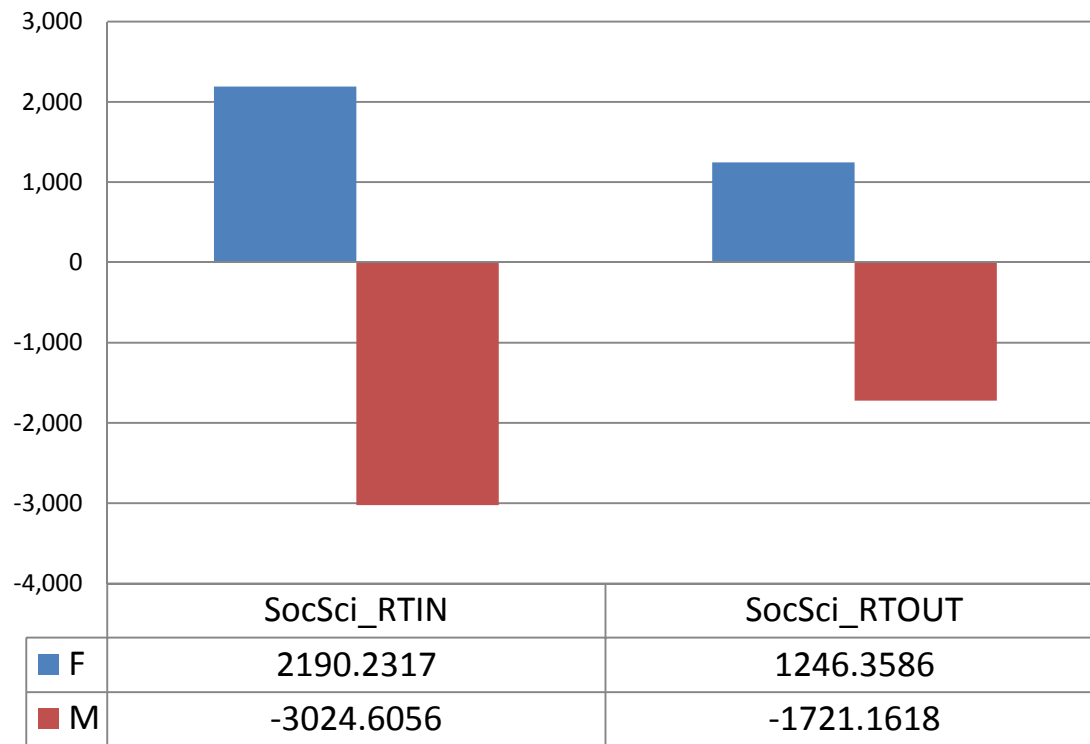


College of Arts and Sciences – Social Sciences Only

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	2	--	\$4,360
Assistant Professor	Female	11	\$64,902	\$6,320
Associate Professor	Male	8	\$78,959	\$9,748
Associate Professor	Female	7	\$74,448	\$5,627
Professor	Male	11	\$105,946	\$22,495
Professor	Female	11	\$114,470	\$23,374

50

College of Arts and Sciences – Social Sciences Only

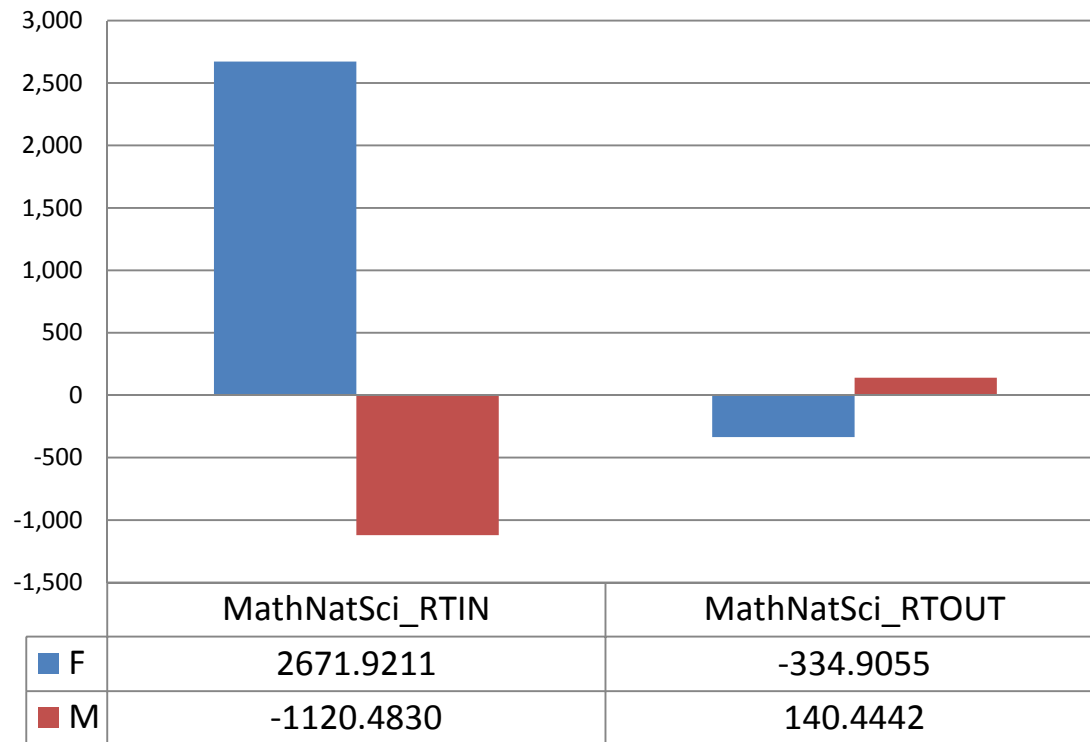


College of Arts and Sciences – Math & Natural Sciences Only

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	9	\$72,790	\$5,656
Assistant Professor	Female	15	\$74,166	\$4,162
Associate Professor	Male	13	\$84,667	\$6,092
Associate Professor	Female	5	\$82,693	\$5,308
Professor	Male	40	\$110,822	\$20,820
Professor	Female	6	\$115,543	\$21,736

88

College of Arts and Sciences – Math & Natural Sciences Only

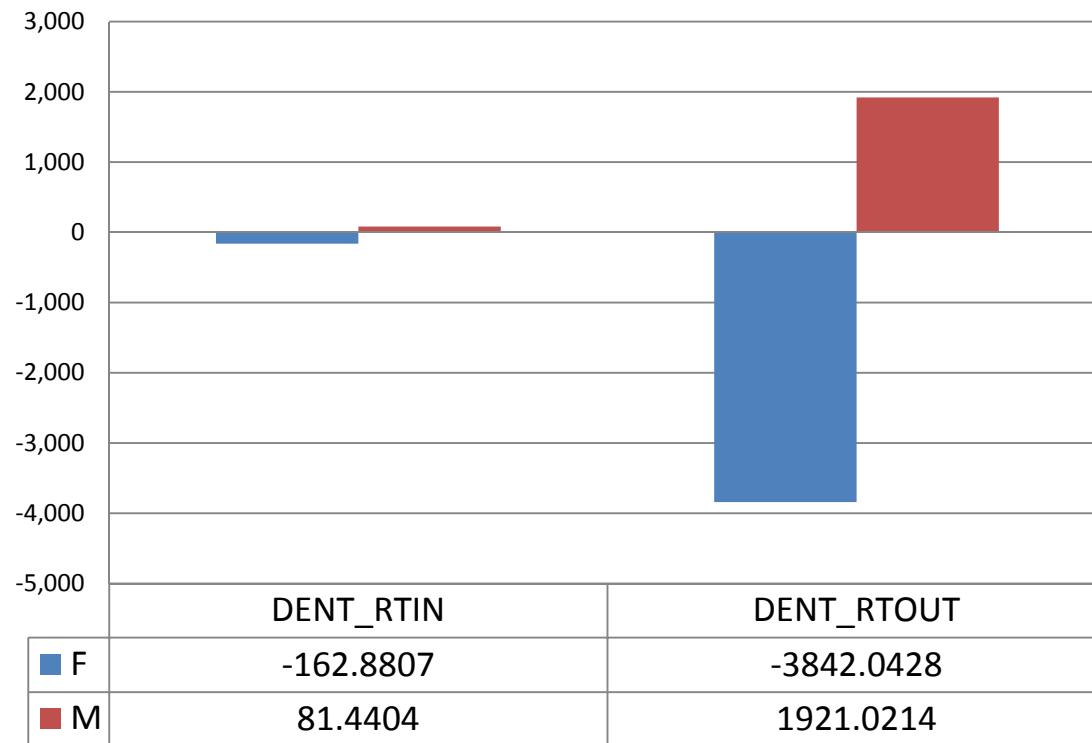


School of Dental Medicine

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	10	\$91,607	\$15,268
Assistant Professor	Female	10	\$87,808	\$13,512
Associate Professor	Male	21	\$113,797	\$26,350
Associate Professor	Female	6	\$112,223	\$24,907
Professor	Male	5	\$152,291	\$19,772
Professor	Female	2	--	\$51,350

54

School of Dental Medicine

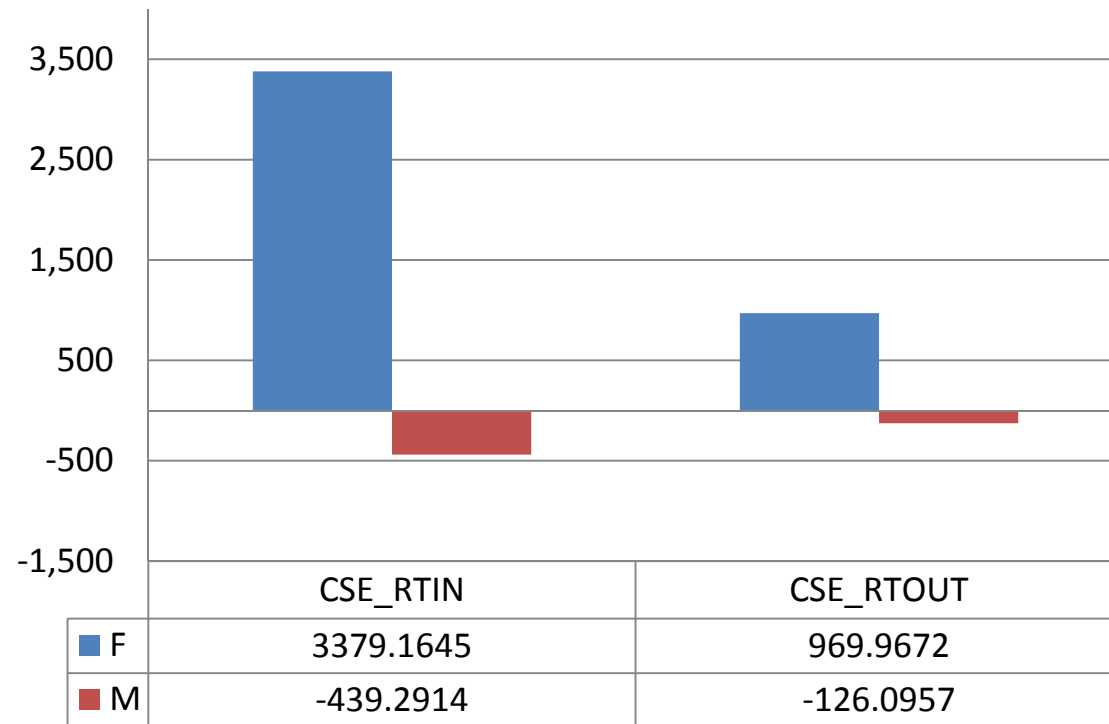


Case School of Engineering

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	14	\$82,632	\$7,317
Assistant Professor	Female	6	\$86,531	\$12,042
Associate Professor	Male	31	\$102,232	\$15,564
Associate Professor	Female	3	--	\$7,106
Professor	Male	55	\$132,983	\$26,062
Professor	Female	4	\$131,684	\$19,880

113

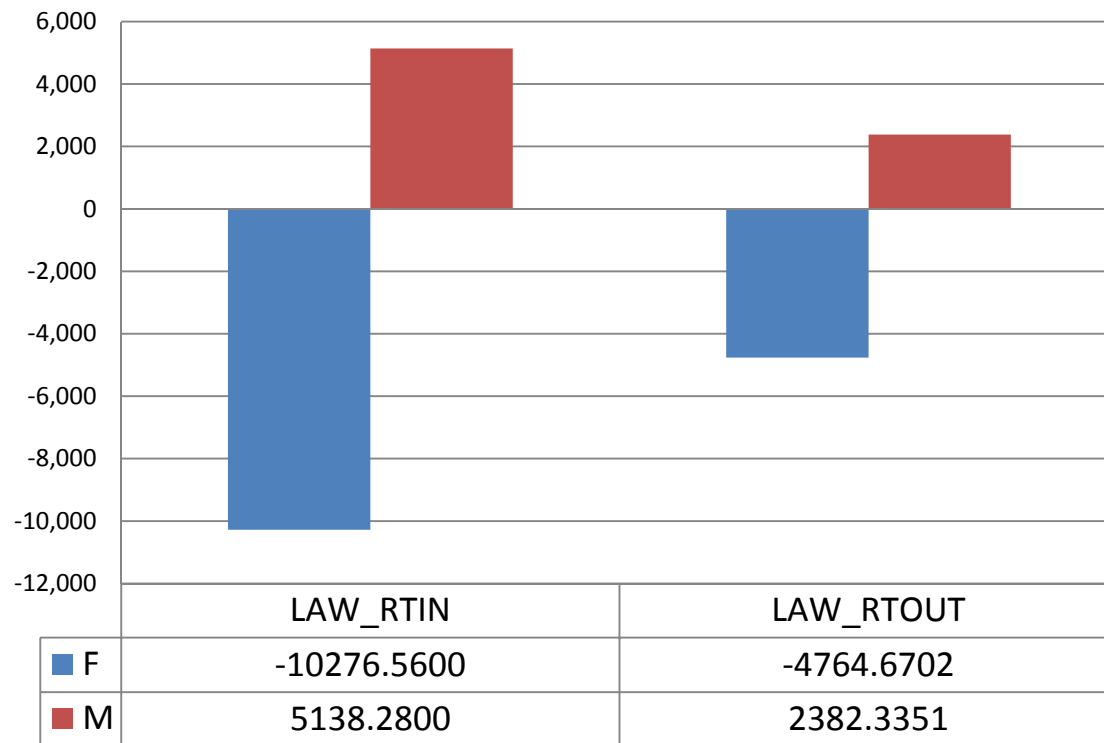
Case School of Engineering



School of Law

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	5	\$108,884	\$32,474
Assistant Professor	Female	2	--	\$5,785
Associate Professor	Male	1	--	--
Associate Professor	Female	0	--	--
Professor	Male	22	\$177,665	\$53,098
Professor	Female	11	\$134,314	\$39,769
		42		

School of Law

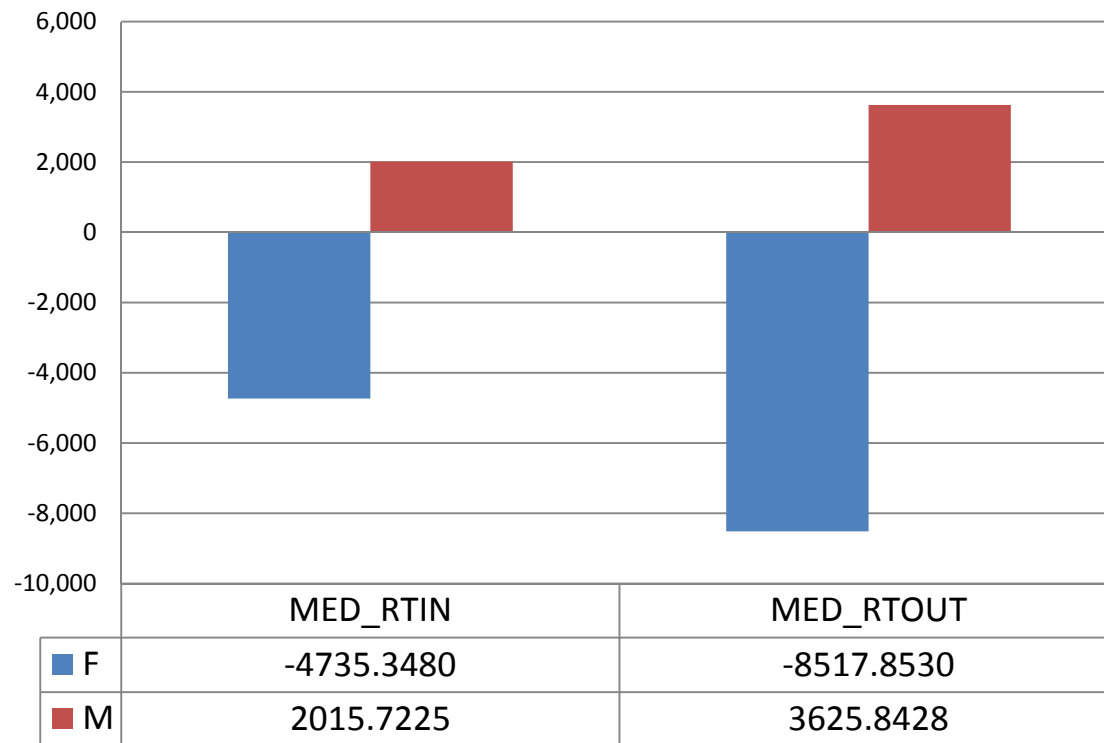


School of Medicine - Basic Sciences

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	49	\$90,728	\$12,280
Assistant Professor	Female	26	\$87,255	\$10,497
Associate Professor	Male	47	\$114,889	\$28,448
Associate Professor	Female	17	\$104,384	\$26,224
Professor	Male	44	\$168,827	\$43,936
Professor	Female	19	\$147,429	\$30,256
Chair	Male	8	\$230,665	\$44,539
Chair*	Female	1	--	-

211

School of Medicine - Basic Sciences

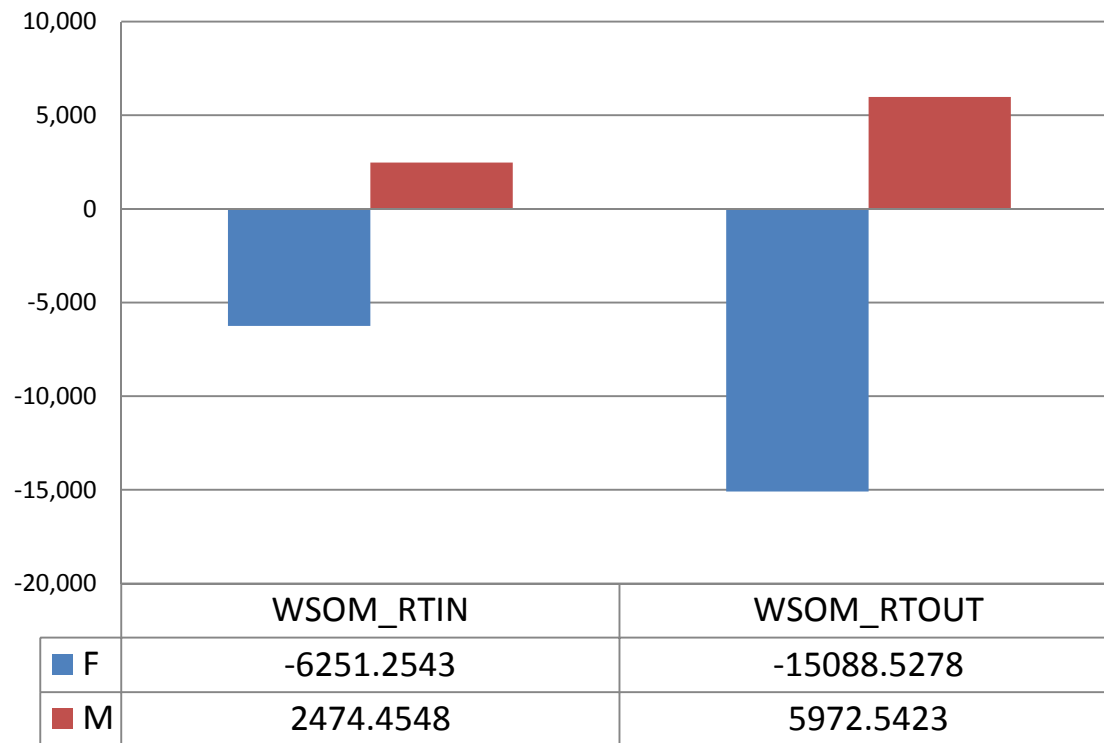


*Salaries based on 12-month appointment

Weatherhead School of Management

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	8	\$134,722	\$24,630
Assistant Professor	Female	10	\$127,476	\$22,584
Associate Professor	Male	11	\$122,674	\$33,499
Associate Professor	Female	6	\$122,951	\$40,973
Professor	Male	29	\$180,819	\$45,784
Professor	Female	3	--	\$14,776
		67		

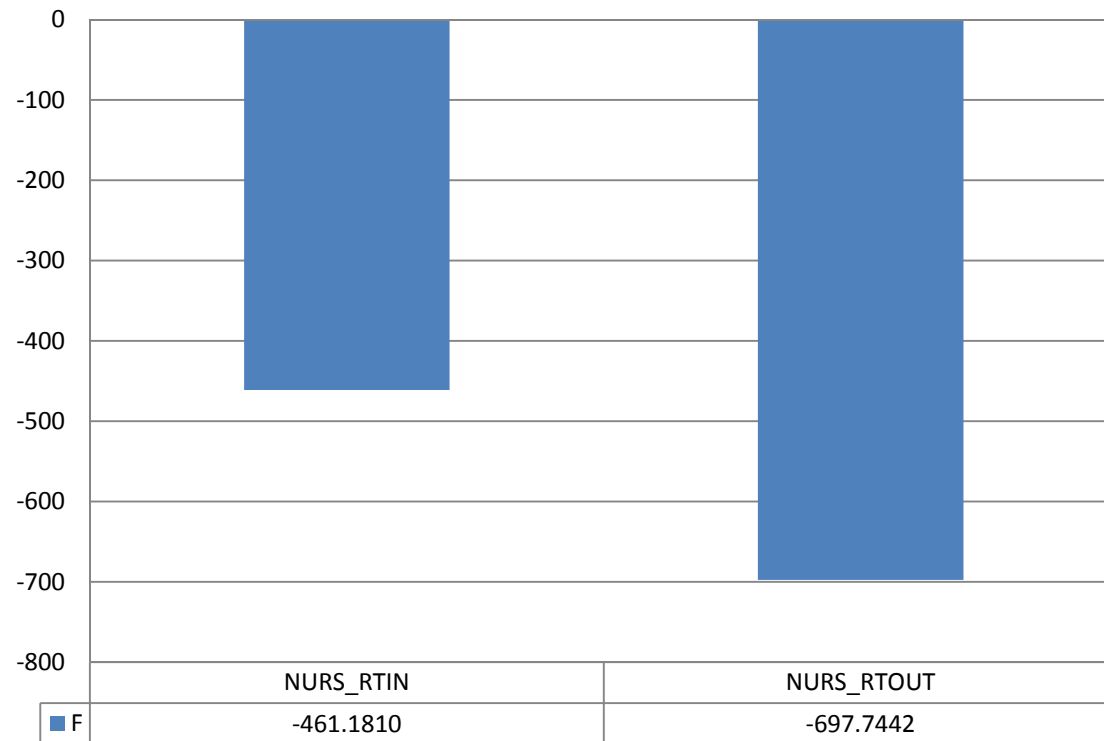
Weatherhead School of Management



Frances Payne Bolton School of Nursing

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	2	--	\$13,316
Assistant Professor	Female	20	\$70,881	\$9,279
Associate Professor	Male	1	--	--
Associate Professor	Female	15	\$85,248	\$11,496
Professor	Male	0	--	--
Professor	Female	9	\$133,257	\$23,030
		47		

Frances Payne Bolton School of Nursing

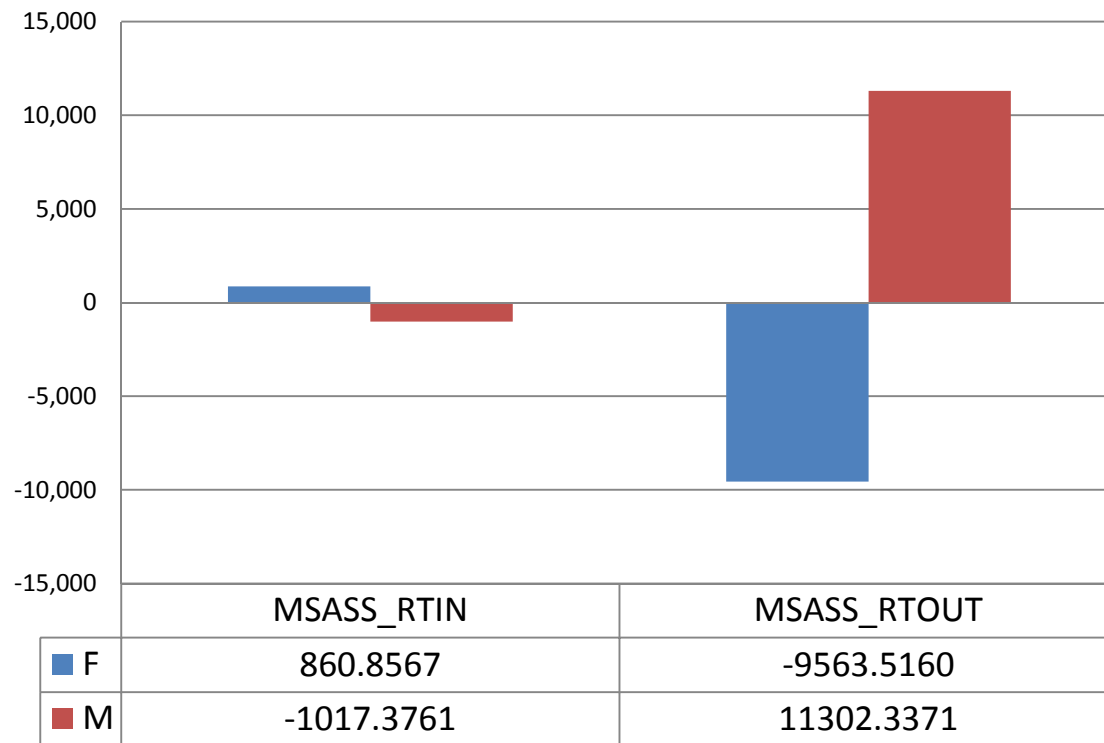


Mandel School of Applied Social Sciences

Rank	Gender	N	Mean	Std. Deviation
Assistant Professor	Male	1	--	--
Assistant Professor	Female	6	\$73,543	\$9,985
Associate Professor	Male	4	\$100,758	\$23,449
Associate Professor	Female	3	--	--
Professor	Male	6	\$165,790	\$32,394
Professor	Female	4	\$138,950	\$41,578

24

Mandel School of Applied Social Sciences

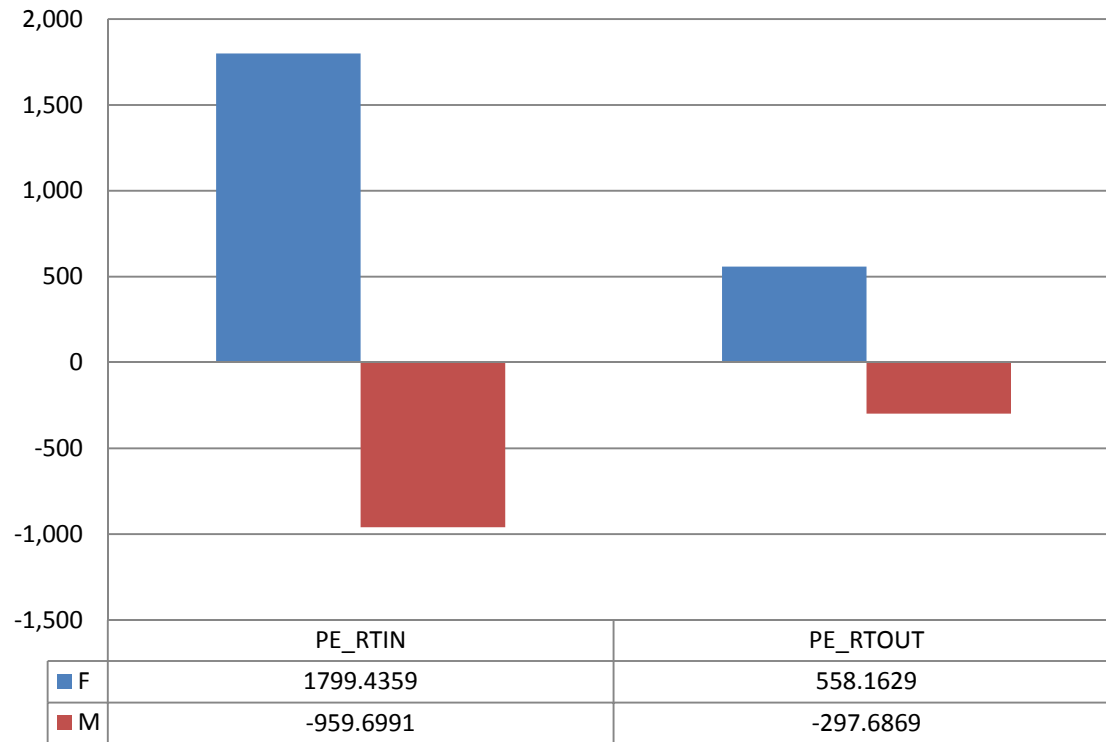


Physical Education and Athletics

Rank	Gender	N	Mean	Std. Deviation
Assistant Coach/Trainer	Male	5	\$40,189	\$8,233
Assistant Coach/Trainer	Female	3	--	--
Head Coach/Trainer	Male	9	\$57,981	\$14,417
Head Coach/Trainer	Female	5	\$55,651	\$9,348
Director Intramurals	Male	1	--	--
Director Intramurals	Female	0	--	--

23

Physical Education and Athletics*



**For PHED Faculty, coaching/trainer status was used in place of faculty appointment status*

Summary – Gender Salary Study

All FTE except clinical departments of the School of Medicine.

School	Discrepancy of residual values 2009-2010	Discrepancy of residual values 2010-2011	Discrepancy of residual values 2011-2012	Discrepancy of residual values 2012-2013	Discrepancy of residual values 2012-2013
A&S – Arts and Humanities	\$359 M	\$474 M	\$1,146 M	\$209W	\$1,173 W
A&S – Math, Natural Sciences and Social Sciences	\$1,861 W	\$1,448 W	\$4,148 W	\$4,105W	\$4,177 W
A&S – Social Sciences	\$1,661 M	\$72 M	\$3,493 W	\$5,162W	\$5,215 W
A&S – Math and Natural Sciences	\$902 W	\$1,737 W	\$3,533 W	\$4,041 W	\$3,792 W
Engineering	\$1,071 M	\$1,339 M	\$2262 W	\$2,615W	\$3,818 W
Management	\$5,512 M	\$11,917 M	\$7,051 M	\$4,334M	\$8726 M
Nursing	N/A	N/A	N/A	N/A	
Dental Medicine	\$4,934 M	\$8,990 M	\$1,080 W	\$1,635W	\$244 M
Law	\$2,544 M	\$4,998 M	\$6,609 M	\$5,484M*	\$15,415 M
Medicine	\$6,755 M	\$5,488 M	\$2,432 M	\$3,809M	\$6,751 M
MSASS	\$3,990 W	\$2,753 W	\$2,241 M	\$257M	\$1,878 M
Physical Education**	-	-	-	\$2,151 M	\$2,759 W

*Does not reflect changes made after November 1, 2013

**In 2013-2014, residuals for physical education were calculated using coaching status instead of faculty appointment

Summer Salary

School	Gender	% With Salary	Mean	Std. Dev.
A&S – Arts and Humanities	M	18%	\$9,014	\$5,954
	F	23%	\$6,961	\$8,215
A&S - Math and Natural Sciences	M	58%	\$21,131	\$9,415
	F	54%	\$12,715	\$6,280
A&S - Social Sciences	M	43%	\$17,142	\$6,379
	F	41%	\$14,059	\$11,283
A&S - Math, Nat'l Sci. and Social Sci.	M	54%	\$20,333	\$8,973
	F	47%	\$13,335	\$8,774
Engineering	M	66%	\$25,954	\$13,832
	F	85%	\$24,009	\$10,140
Law	M	68%	\$13,298	\$15,640
	F	57%	\$13,421	\$12,140
Management	M	27%	\$22,951	\$12,079
	F	62%	\$23,748	\$10,310
Nursing	M	33%	*	*
	F	34%	\$11,357	\$5,928
MSASS	M	72%	\$31,615	\$22,480
	F	92%	\$20,031	\$9,708

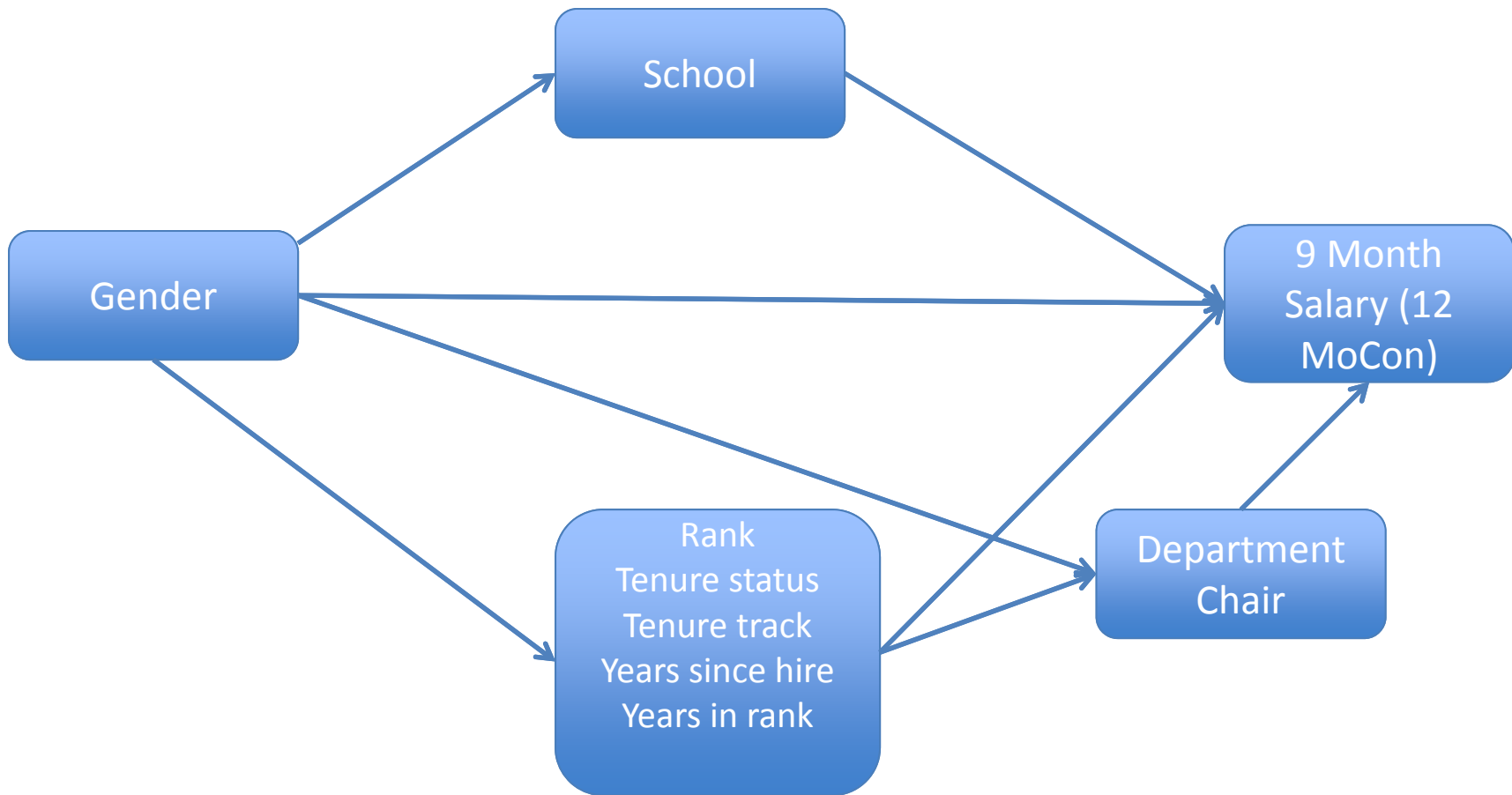
Faculty in Medicine and Dental Medicine are on 12 month contracts and, thus do not receive summer salaries

Supplemental Salary

	Gender	% With Supp	Mean	St. Dev.
A&S – Arts and Humanities	M	10%	\$9,419	\$2,513
	F	13%	\$8,722	\$4,287
A&S - Math & Natural Sciences	M	13%	\$20,197	\$20,610
	F	16%	*	*
A&S - Social Sciences	M	19%	\$10,159	\$1,416
	F	14%	\$11,494	\$3,762
A&S - Math, Nat'l Sci. and Social Sci.	M	15%	\$16,851	\$18,639
	F	13%	\$11,665	\$,388
Engineering	M	20%	\$20,116	\$18,657
	F	39%	\$18,798	\$12,225
Dental Medicine	M	44%	\$18,445	\$15,336
	F	44%	\$17,106	\$14,494
Law	M	32%	\$21,254	\$11,983
	F	57%	\$10,614	\$8,562
Management	M	15%	\$14,616	\$9,349
	F	11%	*	*
Nursing	M	0%	*	*
	F	31%	\$8,038	\$4,351
MSASS	M	0%	*	*
	F	31%	\$9,125	\$6,169
Medicine	M	14%	\$37,110	\$44,368
	F	13%	\$31,912	\$23,002

* < 3 supplements. Removed to protect confidentiality

Path Analysis



Results (Path analysis)

- R-squared=.692
- Gender (F=1) had strong direct effects on the following variables.
 - Years since hire (-)
 - Assistant Professor Rank (+)
 - Tenure track (-)
 - Tenure status (-)
 - Years in rank (-)
 - Appointment in nursing (+)
 - Appointment in engineering (-)

Results (Path Analysis)

- Controlling for all other variables in the model, the direct effect of gender on salary was \$1,568.
- Of note, this discrepancy represents an overall average for the university, while individual schools/units vary in the amount and direction of salary differences. Moreover, within schools, there may be differences within ranks/disciplines.
- This analysis does not consider productivity, an important component of salary.

Results

- The largest differences reside in management, law, medicine.
- There is very little difference between men and women this year in Dental Medicine
- Women have seen some gains over time in specific schools.

Results

- Women's overall pay was less than men's for the following reasons:
 - Women were more likely to be recent hires
 - were more likely to be of lower rank,
 - were less likely to be on the tenure track,
 - were less likely to be tenured,
 - and had spent less time at their current rank.

Recommendations

- The following efforts are recommended for the advancement of women faculty:
 - Enhance mentoring for female faculty to increase the likelihood that women faculty will achieve tenure and promotion to full professor in a timely manner. This will assure that salary increases will occur earlier in female faculty careers.

Recommendations (Cont.)

- Currently, few female professors of higher rank are hired. Actively recruiting female faculty at senior ranks would reduce gender differences in salary where they exist.
- More women faculty need to be promoted to leadership positions. For example, within the School of Medicine, only one department chair is female.