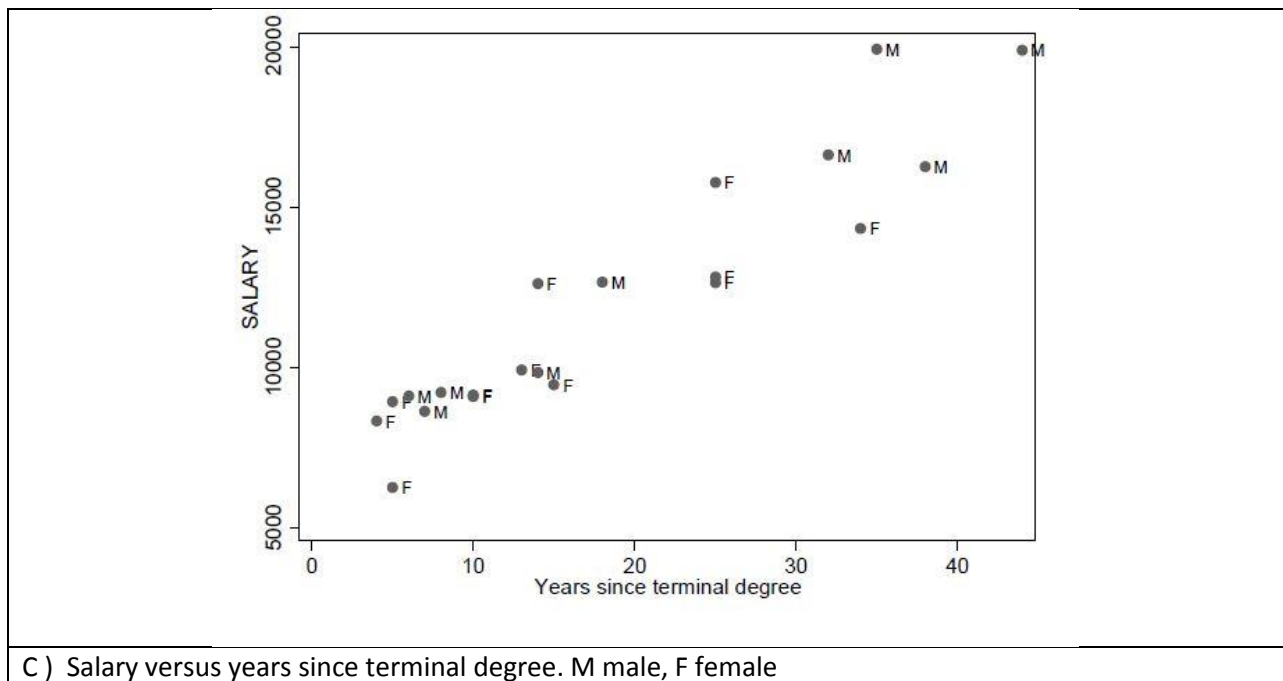
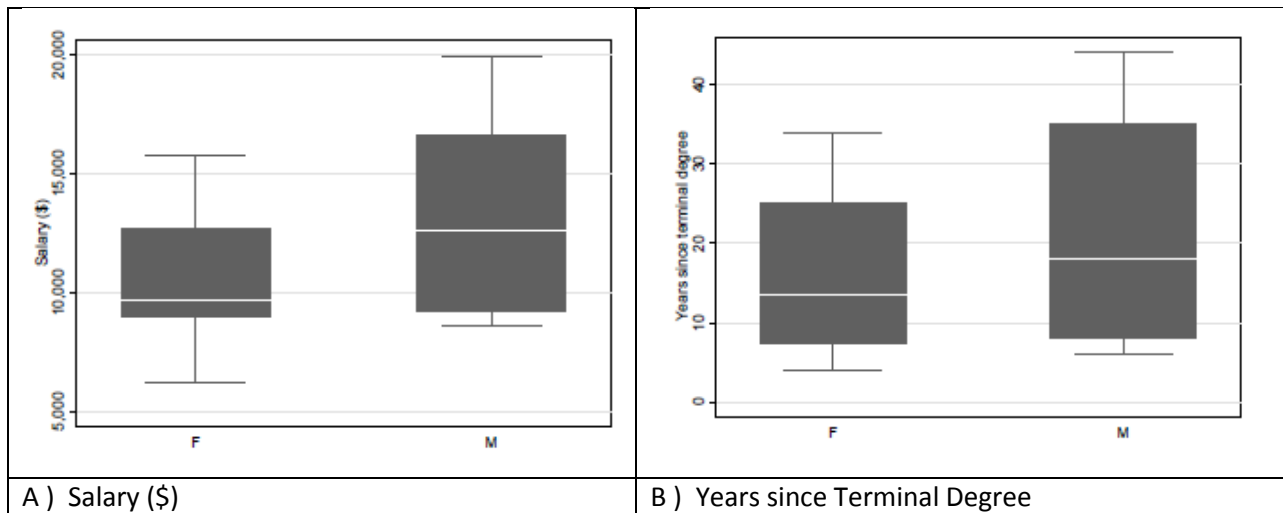


There are a number of appropriate statistical approaches one could take to assess faculty salary equity. Factors unique to each department should guide the approach taken. Below is an example of one approach one might consider:

- (1) A regression of salary for males only on rank, MD status, and years since terminal degree;
- (2) Calculation of residuals for male and female faculty based on the model for males (actual salary minus predicted salary from (1)). Decisions regarding salary increases would then be based on the magnitude of the (negative) residuals.

### 1. General Summaries by Gender



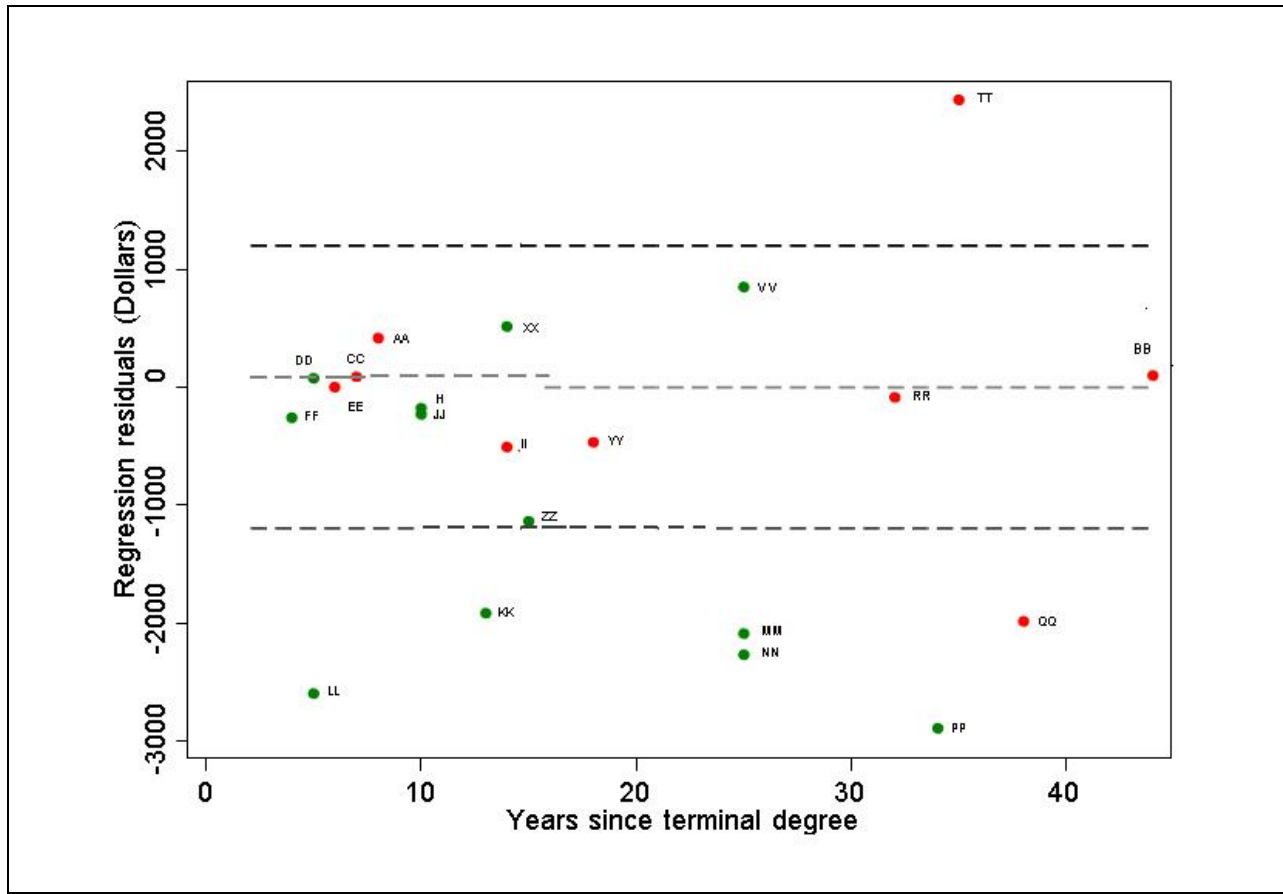
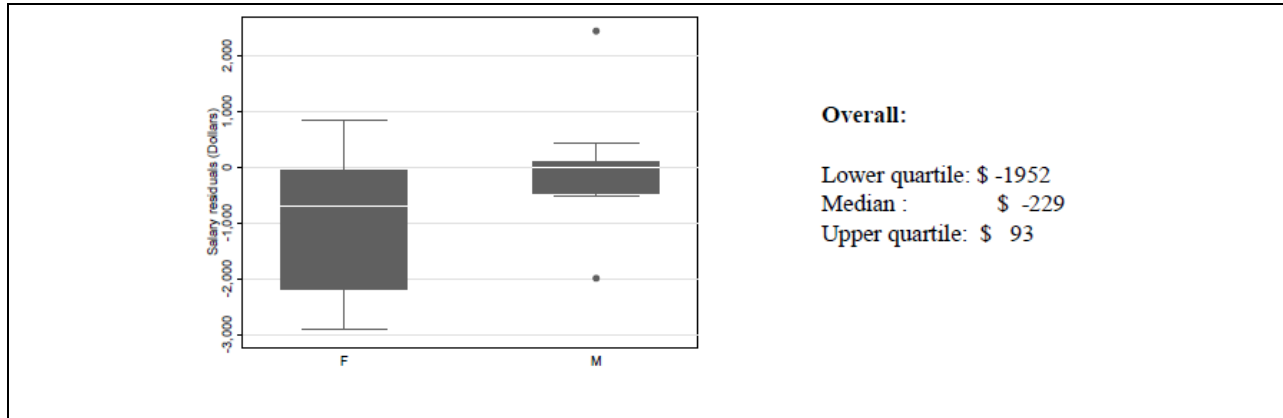
**2. Regression analysis for males, including 1 Assistant Professor**

Associate Professors are reference group, years since terminal degree is centered at 10 years.

Source	SS	df	MS	Number of obs = 9			
-----+-----				F( 3, 5) =	25.87		
Model	164149546	3	54716515.2	Prob > F	= 0.0018		
Residual	10576274.5	5	2115254.89	R-squared	= 0.9395		
-----+-----				Adj R-squared	= 0.9032		
Total	174725820	8	21840727.5	Root MSE	= 1454.4		
-----							
salary		Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
-----+-----							
Rank							
Professor		1752.55	2019.473	0.87	0.425	-3438.672	6943.772
Asst Prof		814.0442	1700.222	0.48	0.652	-3556.516	5184.604
(Yrs snc deg-10)		256.3757	72.37063	3.54	0.017	70.34108	442.4103
_cons		9317.459	840.0398	11.09	0.000	7158.067	11476.85
-----							

- Estimated average male Associate Prof salary, 10 years post-terminal degree, is \$9317.46
- Estimated average salary of male Full Professors with same time since degree is \$1752.55 higher than Associate.
- Estimated average salary of male Assistant Professors with same time since degree is \$814.04 higher than Associate.
- Each additional year since degree increases mean salary by \$256.38

3. Regression residuals for male and female faculty.



The dashed lines are at zero and  $\pm 1$  SD. (Note, however, that the distribution of residuals is skewed – see quartiles above)

One approach to a Departmental Faculty Salary Analysis (2015) (Fictitious Data)

Initials	Salary	Residual	Rank	Gender	Yrncdeg
FF	8334	-259	ASSISTANT PROFESSOR	F	4
LL	6250	-2600	ACTING ASSISTANT PROFESSOR	F	5
DD	8928	78	ASSISTANT PROFESSOR	F	5
EE	9106	0	ASSISTANT PROFESSOR	M	6
CC	8635	87	RESEARCH ASSOCIATE PROFESSOR	M	7
AA	9224	419	ASSOCIATE PROFESSOR	M	8
H	9138	-179	ASSOCIATE PROFESSOR	F	10
JJ	9088	-229	ASSOCIATE PROFESSOR	F	10
KK	9922	-1917	PROFESSOR	F	13
II	9837	-506	ASSOCIATE PROFESSOR	M	14
XX	12611	515	PROFESSOR	F	14
ZZ	9464	-1135	RESEARCH ASSOCIATE PROFESSOR	F	15
YY	12654	-467	PROFESSOR	M	18
NN	12645	-2271	PROFESSOR	F	25
VV	15763	847	PROFESSOR	F	25
MM	12825	-2091	PROFESSOR	F	25
RR	16626	-84	PROFESSOR	M	32
PP	14328	-2895	PROFESSOR	F	34
TT	19919	2440	PROFESSOR	M	35
QQ	16261	-1988	PROFESSOR	M	38
BB	19886	99	PROFESSOR	M	44