

A Statistical Investigation of Equity in Salaries of Staff at the University of Vermont

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February 15, 2016

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Executive Summary

In Summer 2013, at the request of President Thomas Sullivan and under the direction of Vice President for Human Resources, Diversity, and Multicultural Affairs Wanda Heading-Grant, the University of Vermont engaged a statistical consultant to conduct an analysis of faculty and staff salaries at UVM, focusing specifically on investigating whether there is statistical evidence of a gap in salary associated with gender or with minority status. Results of the work regarding faculty salaries were delivered in Spring 2014; findings with respect to staff salaries are detailed in this report.

Multiple linear regression was used to determine whether there was evidence of a gap in salary due to gender or minority status after various adjustment factors considered to influence salary were taken into account (such as years of employment at the university). The data used for analyses were those effective November 2014 and included all staff with the exception of academic administrators and officers of administration. In addition, 74 staff members were excluded because their personnel records did not indicate minority status.

Because of the large number of staff included in the analysis (2144) it was possible to conduct separate statistical analyses for each Job Family. This allows for determining whether any salary gaps arise primarily within a subset of units, or whether they are uniform across the campus. Of the eight Job Families on the UVM campus, these analyses indicated substantial negative gaps for gender and for minority status only for the Professional and Skilled Crafts families, and for underrepresented minorities in the Technical family.

Absent performance data, these results are based on the reasonable assumption that male and female staff are equally meritorious overall; and likewise for minority and nonminority staff. Also, without performance or other personnel data, these methods and results have little to say about the appropriateness of the salary of any given individual. Further, because the numbers of individuals within specific System Title categories are typically small, these methods cannot be used to reliably assess salary gaps within those units. Accordingly, the report discusses alternative methods for administrators to use in assessing individual situations.

Introduction

In summer 2013, at the request of President Thomas Sullivan and under the direction of Vice President for Human Resources, Diversity, and Multicultural Affairs Wanda Heading-Grant, the University of Vermont engaged a statistical consultant to conduct an analysis of faculty and staff salaries at UVM, focusing specifically on investigating whether there is statistical evidence of a gap in salary associated with gender or with minority status. Results of the work regarding faculty salaries were delivered in Spring 2014; findings with respect to staff salaries are detailed below. The next section describes the methods used, the results, and some discussion of the issues underlying the analyses and the interpretation of results. The Appendix contains technical details regarding the data and analyses.¹

Methods and Results

The data used for analyses were taken from campus databases; the data were those effective November 2014 and included all staff with the exception of academic administrators and officers of administration. In addition, 74 staff members were excluded because their personnel records did not indicate minority status. Minority status forms a central part of the analysis of staff salaries, but because this information is not a mandatory component of the personnel record, it was not available for those 74 individuals. Consequently, analyses were conducted on a total of 2,144 staff.

For each staff member, the following data were used: salary (converted, if necessary, to a 1,950-hour per year basis), gender, whether the person has minority status (Hispanic or Latino/Latina, American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or two or more races), years of employment at UVM, FLSA status, union membership status, Job Family (Administrative Support, Executive, Maintenance, Professional, Service, Skilled Crafts, Specialized, or Technical), and System Title. In initial analyses, an indicator of market value was also included. However, this information was not available for all System Titles and was found to add little to the data analyses. Consequently, it was deleted from further analysis. Quantitative measures of performance were not available and thus were not considered.

As was noted in the report on faculty salaries, in conducting an equity analysis it is not sufficient to simply compare average salaries across groups. For example, it is not appropriate to compare the simple average salary of female staff versus male staff. This is because there might be differences between the two groups that legitimately affect salary, such as years of service, service prior to employment with the University, or type of position. To adequately judge possible discrepancies in salary, it is necessary to take into account those factors that are considered to legitimately affect salary levels. The most common tool for addressing this is the statistical approach known as multiple linear regression. Accordingly, multiple linear regression analyses were used to evaluate November 2014 salaries of male and female staff, and minority

¹ Although there is overlap in the methods used and in the interpretation of results for both the faculty and staff studies, for completeness, this report is written to stand alone and thus repeats some of the material presented in the report on faculty salaries.

and nonminority staff, adjusting for factors thought to influence salary, including years of employment at UVM and System Title. (A full list of the variables, i.e. “adjustment factors” or “explanatory variables” used in the regression models can be found in the Appendix.) Because of the large number of staff included in the analysis (2144) it was possible to conduct separate multiple linear regression analyses for each Job Family. This allows for determining whether any salary gaps arise primarily within a subset of these units, or whether they are uniform across the campus.²

In addition to the main analyses reported here, various diagnostic procedures (e.g., examination of residuals, influential points, etc.) were conducted to assess the adequacy of the models and the robustness of the conclusions. There was no evidence of any violation of the statistical assumptions of the models, and so for brevity, the results of these diagnostic procedures are not commented upon further.

Findings:

The following table summarizes the results of the regressions for each Job Family – see the SAS output in the Appendix for additional details. In the table, “Total Number” refers to the total number of staff corresponding to each Job Family. In addition, the column labeled “N” shows the number of female and underrepresented minority staff in each Job Family.

The information in the table can be briefly summarized as follows:

- There are essentially negligible gaps for the Administrative Support and Maintenance families.³
- There are essentially negligible gender gaps within the Executive, Service, and Technical families.
- There are *positive* gaps for the Specialized family, and for underrepresented minorities in the Executive and Service families. (These latter two families have very small numbers, however.)
- There are negative gaps especially for the Professional and Skilled Crafts families, and for underrepresented minorities in the Technical family. (Note again that there are small numbers of female and under-represented minorities employees in the Skilled Crafts family.)

² This is in contrast to the situation for faculty, where analyses of groups smaller than the entire campus were problematic as a result of the smaller number (464) of faculty.

³ Regarding the use of the term “negligible:” as was described in the study of faculty salaries, the magnitude of a salary gap might be considered in the same context as a salary increase. Viewed from that perspective, few staff members would be excited by a pay plan that promised a 1% increase; many would be pleased by an increase of 3-4%; a salary change of about 2% falls somewhat in the middle of that range. Thus, for example, the gender gap for Administrative Support, -0.7, could be considered negligible while the gender gap for Skilled Crafts (-6.6%) is sizable.

Regression Analyses for Each Job Family:

Family=Admin Supp	Gap (%)	N
Total Number		477
Female	-0.7	421
URM	0.0	38

<i>Executive</i>		
Total Number		39
Female	-0.3	20
URM	4.8	5

<i>Maintenance</i>		
Total Number		217
Female	-0.4	102
URM	-0.3	80

<i>Professional</i>		
Total Number		905
Female	-3.6	593
URM	-3.2	94

<i>Service</i>		
Total Number		39
Female	0.8	13
URM	2.3	2

<i>Skilled Crafts</i>		
Total Number		109
Female	-6.6	9
URM	-2.1	3

<i>Specialized</i>		
Total Number		126
Female	2.5	90
URM	3.5	8

<i>Technical</i>		
Total Number		232
Female	-0.5	126
URM	-3.7	24

Limitations of These Analyses

Although the methods employed in this report are common in analyses of equity in salaries,⁴ nonetheless, it is important to understand their limitations in order that the results are not over-interpreted. This is particularly important when policy decisions are based upon analyses such as these. Accordingly, some key issues are outlined next.

1. These analyses do not take into account all factors that might influence salary, including prior years of experience, quantitative measures of performance, and other factors, because such data are not generally available for staff at the UVM campus. These analyses therefore rest on the assumption that, for example, quantitative measures of performance are equal for men and women overall, and that the same holds for minority and nonminority staff.
2. These results have very little to say about the salary of any given individual. The regression results of this report are useful for understanding broad trends but these methods cannot assess whether a gap in salary exists for any given individual. Indeed, it can happen that there is an *average* estimated gap favoring women, but there might exist at the same time female staff members whose salaries are too low. Likewise, it can happen that there is an average estimated gap favoring male staff, but there might still be some female staff whose salaries are too high relative to their background and skills. These regression analyses cannot reveal such situations. (An analogous remark can be made for minority and nonminority staff.)
3. The methods employed here and the results obtained cannot be considered to provide a *proof* that there is a gap in salary based on gender or minority status, not least because, as noted, data on all factors affecting salary are unavailable. In particular, it is important to note that there can be situations where a regression analysis of the type used here reveals a sizeable average gap in salary between male and female staff, but that gap is justified based upon information not available to this study. Accordingly, it cannot be argued that the estimated regression coefficient for gender or minority status must always be zero. However, a large regression coefficient serves as a sentinel that further investigation of salaries is warranted. Moreover, if a gap is allowed to stand, then the reasons for doing so must be well-articulated and supportable.
4. The assessment of the magnitude of any gap in salary should also take into account the number of persons in the category being examined. As noted on pages 3 and 4, for some job families the numbers of female and/or underrepresented minority staff are quite small. In that case, the salaries of one or two persons might have a large influence on the overall estimate of a salary gap. Put another way, the appearance of a large gap might not be indicative of a large (i.e. systemic) problem, but rather it might indicate that one or two salaries need special attention.
5. An issue often raised in the context of the use of regression analyses is whether the p-values ordinarily calculated in a regression analysis have meaning, because the data in this study

⁴ See, e.g. Gray, M. W. (1993) Can statistics tell us what we do not want to hear? The case of complex salary structures (with discussion). *Statistical Science* 8:144–179.

involve a “population” rather than a sample.⁵ The approach that is taken in this report is to focus on the size of the regression coefficients and on the consistency of patterns observed across analyses. From that perspective, the estimated gender and minority gaps cited in this report can be viewed as adjusted averages that take into account known factors thought to affect salary.

Conclusions and Recommendations

Based on the statistical analyses summarized in this report, and after taking into account various factors thought to influence staff salary, there is statistical evidence of substantial negative gaps for both gender and underrepresented minorities in the Professional and Skilled Crafts families, and for underrepresented minorities in the Technical family. At the same time, for a number of units, there are essentially no gaps in salary associated with gender and/or minority status.

As noted, for those units where there is a sizable gap associated with gender or minority status, these gaps serve as sentinels for further investigation. One method for investigating the gaps identified above is to look at personnel records at the System Title level. A detailed examination of salaries at the System Title level can be useful in revealing individual salary differences that either require adjustment, or that can justifiably be left unaltered. Such an examination should look at those factors that are deemed to reasonably affect salary beyond those included in the analyses used herein. These might include, for example, previous years of experience in a similar position accrued with another employer, or special training or certification not otherwise accounted for by the System Title classification.

⁵ See Freedman and Lane (1983) A nonstochastic interpretation of reported significance levels. *Journal of Business and Economic Statistics* 1:292–298. They argue that the formal application of significance tests can still serve a descriptive purpose; a large significance value suggests that a non-zero regression coefficient arises simply “accidentally.” With that in mind, note that in the regression analysis for the Professional Family, the gender gap in salary of -3.6% has a p-value of 0.001; in a standard interpretation, this p-value indicates strong evidence of a gap in salary. (See SAS output in Appendix.)

Appendix

Additional technical details regarding the regression analyses conducted for this report follow.

Variables Used in the Regressions

LnSalary November 2014 staff salaries were converted, if necessary, to a 1,950 hour basis and then a natural logarithm transformation was used. Accordingly, to convert the gender coefficient from a regression model provided in this appendix to a percentage difference in annual salaries, one calculates: $\text{percentage} = e^b - 1$ where b is the parameter estimate from the regression. The log transformation of salaries therefore converts estimated gaps into percentage gaps, which is appropriate because salary changes usually occur on a percentage basis. In addition, this transformation helps to reduce heteroscedasticity in the data, an important assumption in regression modeling.

Female An indicator variable with Male = 0; Female = 1.

URM Equals 1 if a member of a minority group; 0 otherwise. Minority status was defined to be: Hispanic or Latino/a, American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or two or more races.

UVMYrs Number of years as a staff member at UVM.

FLSA status Exempt or non-exempt under the Fair Labor Standards Act

Union status members of a bargaining group represented by a union or non-represented staff

Job Family Classification of position into one of eight families: Administrative Support, Executive, Maintenance, Professional, Service, Skilled Crafts, Specialized, or Technical. In addition to a campus-wide analysis, separate analyses were conducted for each Job Family.

System Title Classification of position into one of 157 system titles. Examples include: Services Support Clerk, Services Support Worker, Services Support Assistant, Services Support Senior, Services Support Supervisor, Services Support Material Specialist, Health Care Counselor, Health Care Professional, Health Care Counselor Senior, Health Care Manager, etc.

The following material displays the output (edited to save space) from SAS in fitting the regression models for each job family separately. Also to save space, output from other analyses are not shown.

All data analyses were performed by UVM's Office of Institutional Research. Many thanks are due to Dr. John Ryan, OIR Director, and his staff for their assistance with this work.

Family=Administrative Support

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	21	7.03346542	0.33492692	39.23	<.0001
Error	455	3.88459678	0.00853758		
Corrected Total	476	10.91806219			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.644205	0.879572	0.092399	10.50499

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	2.73451323	2.73451323	320.29	<.0001
Female	1	0.00665837	0.00665837	0.78	0.3776
URM	1	0.00641079	0.00641079	0.75	0.3867
FLSA	0	0.00000000	.	.	.
Union	2	1.76035090	0.88017545	103.09	<.0001
SystemTitle	16	2.52553212	0.15784576	18.49	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	2.28819244	2.28819244	268.01	<.0001
Female	1	0.00214567	0.00214567	0.25	0.6164
URM	1	0.00000197	0.00000197	0.00	0.9879
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	16	2.52553212	0.15784576	18.49	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	10.17183419 B	0.03897986	260.95	<.0001
UVMYrs	0.00770219	0.00047047	16.37	<.0001
Female	-0.00713283	0.01422811	-0.50	0.6164
URM	0.00024129	0.01587512	0.02	0.9879
FLSA N	0.00000000 B	.	.	.
Union NU	0.33307199 B	0.04313613	7.72	<.0001
Union TM	0.48858704 B	0.05636845	8.67	<.0001
Union UE	0.00000000 B	.	.	.
SystemTitle Business Support Assistant	-0.20622000 B	0.04316667	-4.78	<.0001
SystemTitle Business Support Generalist	0.00460925 B	0.02318620	0.20	0.8425
SystemTitle Dispatcher	0.00000000 B	.	.	.
SystemTitle Library Support Assistant	-0.34679704 B	0.06899335	-5.03	<.0001
SystemTitle Library Support Generalist	-0.22528933 B	0.03564060	-6.32	<.0001
SystemTitle Library Support Senior	-0.09530373 B	0.03447255	-2.76	0.0059
SystemTitle Office/Prgm Outreach Support	-0.21015271 B	0.04299547	-4.89	<.0001
SystemTitle Office/Prgm Support Assistant	-0.20171336 B	0.04085793	-4.94	<.0001
SystemTitle Office/Prgm Support Generalist	-0.08998762 B	0.02151971	-4.18	<.0001
SystemTitle Office/Prgm Support Senior	0.13416296 B	0.02901490	4.62	<.0001
SystemTitle Services Spt Material Spec	0.05832648 B	0.05719358	1.02	0.3084
SystemTitle Services Support Assistant	0.20813515 B	0.10110601	2.06	0.0401
SystemTitle Services Support Clerk	-0.10868626 B	0.05025057	-2.16	0.0311
SystemTitle Services Support Generalist	0.08589072 B	0.05375526	1.60	0.1108
SystemTitle Services Support Senior	0.09147685 B	0.10019049	0.91	0.3617
SystemTitle Services Support Supervisor	-0.04390951 B	0.04278634	-1.03	0.3053
SystemTitle Services Support Worker	0.00000000 B	.	.	.
SystemTitle Technical Support Generalist	-0.20216471 B	0.09535607	-2.12	0.0345
SystemTitle Technical Support Specialist	0.00000000 B	.	.	.

Family=Executive

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.02351997	0.00783999	0.15	0.9258
Error	35	1.77150645	0.05061447		
Corrected Total	38	1.79502643			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.013103	1.935316	0.224977	11.62480

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.01534044	0.01534044	0.30	0.5855
Female	1	0.00003133	0.00003133	0.00	0.9803
URM	1	0.00814820	0.00814820	0.16	0.6907
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	0	0.00000000	.	.	.

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.02188305	0.02188305	0.43	0.5151
Female	1	0.00007886	0.00007886	0.00	0.9687
URM	1	0.00814820	0.00814820	0.16	0.6907
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	0	0.00000000	.	.	.

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	11.57100385 B	0.09844981	117.53	<.0001
UVMYrs	0.00265035	0.00403076	0.66	0.5151
Female	-0.00285776	0.07239795	-0.04	0.9687
URM	0.04682095	0.11669350	0.40	0.6907
FLSA X	0.00000000 B	.	.	.
Union NU	0.00000000 B	.	.	.
SystemTitle Classified Executive	0.00000000 B	.	.	.

Family=Maintenance

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	17	9.30469501	0.54733500	174.78	<.0001
Error	199	0.62318834	0.00313160		
Corrected Total	216	9.92788335			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.937228	0.545620	0.055961	10.25636

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	2.56131089	2.56131089	817.89	<.0001
Female	1	0.42328780	0.42328780	135.17	<.0001
URM	1	0.27023306	0.27023306	86.29	<.0001
FLSA	1	2.63844683	2.63844683	842.52	<.0001
Union	1	2.04545064	2.04545064	653.16	<.0001
SystemTitle	12	1.36596579	0.11383048	36.35	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	1.27659324	1.27659324	407.65	<.0001
Female	1	0.00058568	0.00058568	0.19	0.6659
URM	1	0.00038306	0.00038306	0.12	0.7269
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	12	1.36596579	0.11383048	36.35	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	10.46025399 B	0.06688913	156.38	<.0001
UVMYrs	0.00949913	0.00047048	20.19	<.0001
Female	-0.00363380	0.00840261	-0.43	0.6659
URM	-0.00307787	0.00880029	-0.35	0.7269
FLSA N	-0.27464147 B	0.03570300	-7.69	<.0001
FLSA X	0.00000000 B	.	.	.
Union NU	0.24681528 B	0.05848317	4.22	<.0001
Union UE	0.00000000 B	.	.	.
SystemTitle Custodial Maintenance Spec	-0.05345085 B	0.05763031	-0.93	0.3548
SystemTitle Custodial Maintenance Spec Sr	0.02006771 B	0.05806571	0.35	0.7300
SystemTitle Custodial Maintenance Worker	-0.14771924 B	0.05663789	-2.61	0.0098
SystemTitle Farm Maintenance Specialist Sr	0.51090290 B	0.07958797	6.42	<.0001
SystemTitle Grounds Maintenance Specialist	0.09091912 B	0.06474033	1.40	0.1618
SystemTitle Grounds Maintenance Worker	-0.01715795 B	0.06001365	-0.29	0.7753
SystemTitle Grounds Unit Supervisor	0.19849379 B	0.03589834	5.53	<.0001
SystemTitle Maintenance Operations Spvr	0.25739790 B	0.04571499	5.63	<.0001
SystemTitle Maintenance Project Coord	0.04901548 B	0.05811117	0.84	0.4000
SystemTitle Maintenance Specialist	-0.00032936 B	0.06004686	-0.01	0.9956
SystemTitle Maintenance Specialist Senior	0.06164070 B	0.06340618	0.97	0.3322
SystemTitle Maintenance Srvs Supervisor	0.00000000 B	.	.	.
SystemTitle Maintenance Unit Supervisor	0.00000000 B	.	.	.
SystemTitle Maintenance Worker	-0.01435193 B	0.06337574	-0.23	0.8211
SystemTitle Resrch Facilities Mntnce Spec	0.00000000 B	.	.	.

Family=Professional

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	56	61.52498801	1.09866050	50.51	<.0001
Error	848	18.44385188	0.02174983		
Corrected Total	904	79.96883989			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.769362	1.342794	0.147478	10.98294

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	10.16364081	10.16364081	467.30	<.0001
Female	1	3.19866734	3.19866734	147.07	<.0001
URM	1	0.14836874	0.14836874	6.82	0.0092
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	53	48.01431111	0.90593040	41.65	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	2.20984883	2.20984883	101.60	<.0001
Female	1	0.22452045	0.22452045	10.32	0.0014
URM	1	0.07567556	0.07567556	3.48	0.0625
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	53	48.01431111	0.90593040	41.65	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	11.17954666 B	0.10487843	106.60	<.0001
UVMYrs	0.00595255	0.00059054	10.08	<.0001
Female	-0.03707543	0.01153948	-3.21	0.0014
URM	-0.03281147	0.01759040	-1.87	0.0625
FLSA X	0.00000000 B	.	.	.
Union NU	0.00000000 B	.	.	.
SystemTitle Academic Srvc Professional	-0.55276560 B	0.10858675	-5.09	<.0001
SystemTitle Academic Srvc Professional Sr	-0.31323021 B	0.10994802	-2.85	0.0045
SystemTitle Admin Analyst/Planner	-0.18697274 B	0.11086252	-1.69	0.0921
SystemTitle Admin Analyst/Planner Sr	0.04022207 B	0.10974790	0.37	0.7141
SystemTitle Admin Facilities Professnl	-0.04321018 B	0.11267653	-0.38	0.7015
SystemTitle Admin Facilities Professnl Sr	0.28773815 B	0.18076448	1.59	0.1118
SystemTitle Administrative Coordinator	-0.29067816 B	0.10834027	-2.68	0.0074
SystemTitle Administrative Counsel	0.39830279 B	0.13490866	2.95	0.0032
SystemTitle Administrative Professional	-0.29866559 B	0.10558679	-2.83	0.0048
SystemTitle Administrative Professional Sr	-0.04373796 B	0.10937639	-0.40	0.6893
SystemTitle Administrative Srvc Manager	0.08957439 B	0.10798757	0.83	0.4071
SystemTitle Athletic Assistant Coach	-0.41600099 B	0.10982163	-3.79	0.0002
SystemTitle Athletic Head Coach	0.00472088 B	0.11554901	0.04	0.9674
SystemTitle Athletic Head Coach Sr	0.93416380 B	0.13487640	6.93	<.0001
SystemTitle Business Oprtns Administrator	0.29893102 B	0.11453554	2.61	0.0092
SystemTitle Clinical Engineer	-0.25616516 B	0.14759159	-1.74	0.0830
SystemTitle Communications Professional	-0.36921042 B	0.10876209	-3.39	0.0007
SystemTitle Communications Professional Sr	-0.15974588 B	0.11365982	-1.41	0.1602
SystemTitle Constituent Relations Prfnl Sr	0.15770001 B	0.13490542	1.17	0.2427
SystemTitle Enrollment Mgmt Professional	-0.53029787 B	0.10733940	-4.94	<.0001
SystemTitle Enrollment Mgmt Professnl Sr	-0.21020756 B	0.11330681	-1.86	0.0639
SystemTitle Facility Coordinator	-0.11672518 B	0.12045100	-0.97	0.3328
SystemTitle Health Care Administrator	0.91865941 B	0.18126231	5.07	<.0001
SystemTitle Health Care Counselor	-0.19775520 B	0.11698829	-1.69	0.0913
SystemTitle Health Care Counselor Sr	-0.04182412 B	0.13566533	-0.31	0.7579
SystemTitle Health Care Doctor	0.76035983 B	0.14824848	5.13	<.0001
SystemTitle Health Care Manager	0.42387833 B	0.18068343	2.35	0.0192
SystemTitle Health Care Nurse	-0.20580152 B	0.11878094	-1.73	0.0835
SystemTitle Health Care Professional	-0.26657502 B	0.11863109	-2.25	0.0249
SystemTitle Health Care Professional Sr	0.06374655 B	0.12839322	0.50	0.6197
SystemTitle Health Care Provider	0.09669326 B	0.12397033	0.78	0.4356
SystemTitle Information Tech Professional	-0.28281182 B	0.10738392	-2.63	0.0086

SystemTitle Information Tech Professnl Sr	0.07872975 B	0.10625290	0.74	0.4589
SystemTitle Information Tech Specialist	0.05653136 B	0.12341267	0.46	0.6470
SystemTitle Information Technology Mgr	0.25315271 B	0.12352896	2.05	0.0407
SystemTitle Library Professional	-0.60417689 B	0.11230244	-5.38	<.0001
SystemTitle Outreach Coordinator	-0.46469623 B	0.13491606	-3.44	0.0006
SystemTitle Outreach Manager	0.11032693 B	0.11691084	0.94	0.3456
SystemTitle Outreach Professional	-0.48082545 B	0.10646907	-4.52	<.0001
SystemTitle Outreach Professional Sr	-0.19018134 B	0.10756886	-1.77	0.0774
SystemTitle Professional Executive Asst	0.17241870 B	0.18100519	0.95	0.3411
SystemTitle Professional Sr Executive Asst	0.35947327 B	0.14793185	2.43	0.0153
SystemTitle Research Ctr Administrator	0.28848924 B	0.12834984	2.25	0.0249
SystemTitle Research Engineer	-0.04528138 B	0.13475947	-0.34	0.7369
SystemTitle Research Specialist	-0.35409880 B	0.10757726	-3.29	0.0010
SystemTitle Researcher/Analyst	-0.13037634 B	0.10776165	-1.21	0.2267
SystemTitle Safety Coordinator	-0.29486895 B	0.18205279	-1.62	0.1057
SystemTitle Student Life Professional	-0.54639502 B	0.10973454	-4.98	<.0001
SystemTitle Student Life Professional Sr	-0.32340230 B	0.11425770	-2.83	0.0048
SystemTitle Student Services Administrator	0.23432323 B	0.12891585	1.82	0.0695
SystemTitle Student Srvcs Professional	-0.46752129 B	0.10901400	-4.29	<.0001
SystemTitle Student Srvcs Professional Sr	-0.27473377 B	0.13526069	-2.03	0.0426
SystemTitle Student/Academic Srvcs Manager	-0.02633563 B	0.10881063	-0.24	0.8088
SystemTitle Technical Safety Officer	0.00000000 B	.	.	.

Family=Service

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	10	5.10274190	0.51027419	162.78	<.0001
Error	28	0.08777216	0.00313472		
Corrected Total	38	5.19051405			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.983090	0.526370	0.055989	10.63674

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	1.39453212	1.39453212	444.87	<.0001
Female	1	0.00368055	0.00368055	1.17	0.2878
URM	1	0.08982543	0.08982543	28.66	<.0001
FLSA	1	0.01082146	0.01082146	3.45	0.0737
Union	2	3.01393544	1.50696772	480.73	<.0001
SystemTitle	4	0.58994690	0.14748673	47.05	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.33817171	0.33817171	107.88	<.0001
Female	1	0.00039151	0.00039151	0.12	0.7264
URM	1	0.00057185	0.00057185	0.18	0.6726
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	4	0.58994690	0.14748673	47.05	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	10.25832284 B	0.07827393	131.06	<.0001
UVMYrs	0.01326918	0.00127754	10.39	<.0001
Female	0.00770723	0.02180853	0.35	0.7264
URM	0.02240596	0.05245908	0.43	0.6726
FLSA N	-0.12286035 B	0.06952899	-1.77	0.0881
FLSA X	0.00000000 B	.	.	.
Union NU	0.38235336 B	0.06426273	5.95	<.0001
Union TM	0.08499468 B	0.04334410	1.96	0.0599
Union UE	0.00000000 B	.	.	.
SystemTitle Police Officer	0.42198610 B	0.03788071	11.14	<.0001
SystemTitle Police Officer Senior	0.42923457 B	0.06023555	7.13	<.0001
SystemTitle Service Officer	0.00000000 B	.	.	.
SystemTitle Shuttle Driver	-0.04865494 B	0.03588055	-1.36	0.1859
SystemTitle Transportation Enforcement Spv	0.00000000 B	.	.	.
SystemTitle Transportation Srvs Coord	0.11845876 B	0.05344572	2.22	0.0350
SystemTitle Transportation Srvs Officer	0.00000000 B	.	.	.
SystemTitle Transportation Srvs Supervisor	0.00000000 B	.	.	.

Family=Skilled Crafts

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	5.33747550	0.24261252	30.87	<.0001
Error	86	0.67587012	0.00785895		
Corrected Total	108	6.01334562			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.887605	0.832153	0.088651	10.65317

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.50276335	0.50276335	63.97	<.0001
Female	1	0.05849146	0.05849146	7.44	0.0077
URM	1	0.03826700	0.03826700	4.87	0.0300
FLSA	0	0.00000000	.	.	.
Union	1	1.19217024	1.19217024	151.70	<.0001
SystemTitle	18	3.54578345	0.19698797	25.07	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.39382540	0.39382540	50.11	<.0001
Female	1	0.02706385	0.02706385	3.44	0.0669
URM	1	0.00125095	0.00125095	0.16	0.6909
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	18	3.54578345	0.19698797	25.07	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	10.86208779 B	0.04510854	240.80	<.0001
UVMYrs	0.00782104	0.00110483	7.08	<.0001
Female	-0.06820486	0.03675386	-1.86	0.0669
URM	-0.02149284	0.05387123	-0.40	0.6909
FLSA N	0.00000000 B	.	.	.
Union NU	0.06296142 B	0.05595092	1.13	0.2636
Union UE	0.00000000 B	.	.	.
SystemTitle Building Trades Supervisor	-0.14726026 B	0.07184718	-2.05	0.0434
SystemTitle Building Tradesperson	-0.45936492 B	0.09945802	-4.62	<.0001
SystemTitle Building Tradesperson Senior	-0.40837945 B	0.05393489	-7.57	<.0001
SystemTitle Equipment Mechanic	-0.61498481 B	0.06359352	-9.67	<.0001
SystemTitle Equipment Mechanic Senior	-0.46308949 B	0.10602324	-4.37	<.0001
SystemTitle Facilities Mechanic	-0.66914107 B	0.07710127	-8.68	<.0001
SystemTitle Facilities Repairperson	-0.54692127 B	0.04867270	-11.24	<.0001
SystemTitle Facilities Trades Engineer	0.15122095 B	0.06394810	2.36	0.0203
SystemTitle Facilities Trades Supervisor	-0.16932665 B	0.06308222	-2.68	0.0087
SystemTitle Facilities Unit Supervisor	-0.45713124 B	0.09484985	-4.82	<.0001
SystemTitle Fleet Mechanic	-0.32914357 B	0.07677492	-4.29	<.0001
SystemTitle Hazardous Materials Spec Sr	-0.39258660 B	0.09911566	-3.96	0.0002
SystemTitle Hazardous Materials Specialist	-0.50927046 B	0.07677643	-6.63	<.0001
SystemTitle Mechanic	-0.25933724 B	0.07895236	-3.28	0.0015
SystemTitle Mechanic Supervisor	-0.13653899 B	0.09672061	-1.41	0.1617
SystemTitle Operating Engineer	-0.24670849 B	0.05736379	-4.30	<.0001
SystemTitle Utilities Trades Supervisor	0.00000000 B	.	.	.
SystemTitle Utilities Trades Technician	-0.34336382 B	0.07197303	-4.77	<.0001
SystemTitle Utilities Tradesperson Senior	-0.22855087 B	0.04714128	-4.85	<.0001
SystemTitle Utilities Tradesperson Spec	0.00000000 B	.	.	.

Family=Specialized

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	14	1.29433498	0.09245250	8.56	<.0001
Error	111	1.19888336	0.01080075		
Corrected Total	125	2.49321834			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.519142	0.974637	0.103927	10.66311

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.53675694	0.53675694	49.70	<.0001
Female	1	0.00117829	0.00117829	0.11	0.7418
URM	1	0.00075684	0.00075684	0.07	0.7917
FLSA	1	0.23254081	0.23254081	21.53	<.0001
Union	0	0.00000000	.	.	.
SystemTitle	10	0.52310211	0.05231021	4.84	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	0.31370489	0.31370489	29.04	<.0001
Female	1	0.01179500	0.01179500	1.09	0.2983
URM	1	0.00787042	0.00787042	0.73	0.3951
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	10	0.52310211	0.05231021	4.84	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	10.62986498 B	0.10664754	99.67	<.0001
UVMYrs	0.00685506	0.00127197	5.39	<.0001
Female	0.02446054	0.02340692	1.05	0.2983
URM	0.03458490	0.04051488	0.85	0.3951
FLSA N	-0.10025208 B	0.10608873	-0.94	0.3467
FLSA X	0.00000000 B	.	.	.
Union NU	0.00000000 B	.	.	.
SystemTitle Business/Acctng Specialist	0.05373940 B	0.02822897	1.90	0.0595
SystemTitle Clinic Assistant	-0.15113056 B	0.10702390	-1.41	0.1607
SystemTitle Data Management Specialist	0.07394783 B	0.11528787	0.64	0.5226
SystemTitle Exec Asst to President/Provost	0.29387500 B	0.12756863	2.30	0.0231
SystemTitle Facilities Analyst	0.04150681 B	0.10776026	0.39	0.7008
SystemTitle Info Tech Assist/Programmr	0.10676641 B	0.03185605	3.35	0.0011
SystemTitle Interpreter/Translator Spc	-0.14768206 B	0.08029419	-1.84	0.0685
SystemTitle Medical Laboratory Specialist	0.31167147 B	0.10622608	2.93	0.0041
SystemTitle Nursing Specialist	0.00000000 B	.	.	.
SystemTitle Process Coordinator	0.09519439 B	0.03613302	2.63	0.0096
SystemTitle Program Specialist	-0.02404416 B	0.03130470	-0.77	0.4441
SystemTitle Student Services Specialist	0.00000000 B	.	.	.

Family=Technical

The GLM Procedure

Dependent Variable: LnSal LnSal

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	18	10.53958504	0.58553250	39.60	<.0001
Error	213	3.14950058	0.01478639		
Corrected Total	231	13.68908562			

R-Square	Coeff Var	Root MSE	LnSal Mean
0.769926	1.140982	0.121599	10.65742

Source	DF	Type I SS	Mean Square	F Value	Pr > F
UVMYrs	1	5.97955334	5.97955334	404.40	<.0001
Female	1	0.40637515	0.40637515	27.48	<.0001
URM	1	0.01081156	0.01081156	0.73	0.3935
FLSA	1	0.67662777	0.67662777	45.76	<.0001
Union	0	0.00000000	.	.	.
SystemTitle	14	3.46621722	0.24758694	16.74	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
UVMYrs	1	1.95966976	1.95966976	132.53	<.0001
Female	1	0.00116974	0.00116974	0.08	0.7788
URM	1	0.02649957	0.02649957	1.79	0.1821
FLSA	0	0.00000000	.	.	.
Union	0	0.00000000	.	.	.
SystemTitle	14	3.46621722	0.24758694	16.74	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	10.64133756 B	0.08855644	120.16	<.0001
UVMYrs	0.01283967	0.00111530	11.51	<.0001
Female	-0.00525507	0.01868381	-0.28	0.7788
URM	-0.03740304	0.02793949	-1.34	0.1821
FLSA N	0.16047373 B	0.10541241	1.52	0.1294
FLSA X	0.00000000 B	.	.	.
Union NU	0.00000000 B	.	.	.
SystemTitle Biomed Equipment Tech Sr	0.11395145 B	0.08176178	1.39	0.1649
SystemTitle Biomedical Equip Tech Supervsr	0.34049310 B	0.10536122	3.23	0.0014
SystemTitle Biomedical Equipment Tech	-0.14996949 B	0.06672064	-2.25	0.0256
SystemTitle Environmental Safety Tech	-0.06478063 B	0.10906720	-0.59	0.5532
SystemTitle Equipment Technician	-0.17690122 B	0.07460533	-2.37	0.0186
SystemTitle Equipment Technician Sr	0.28055163 B	0.12309057	2.28	0.0236
SystemTitle Lab Research Technician	-0.37169663 B	0.06384042	-5.82	<.0001
SystemTitle Lab/Research Technician Sr	-0.12659106 B	0.06552760	-1.93	0.0547
SystemTitle Media Broadcast Technician	0.00000000 B	.	.	.
SystemTitle Media Technician	-0.22522493 B	0.09366520	-2.40	0.0170
SystemTitle Media Technician Senior	-0.10794681 B	0.08245676	-1.31	0.1919
SystemTitle Research Assistant	-0.55532598 B	0.10635281	-5.22	<.0001
SystemTitle Research Project Assistant	-0.35837164 B	0.06834161	-5.24	<.0001
SystemTitle Safety Technician	-0.14473936 B	0.13608536	-1.06	0.2887
SystemTitle Scientific Electronics Tech	0.05555842 B	0.13612129	0.41	0.6836
SystemTitle Scientific Equipment Tech	0.00000000 B	.	.	.