

College of Southern Nevada Study Update – Initial Pay Equity Analysis

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Agenda

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- Methodology
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 - Administrative Faculty
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Objectives

- The objective of this analysis is to determine if there are any indications of systematic pay disparities between employees of differing race, age or gender, isolate specific areas as possible, and identify key contributing factors. This analysis is completed separately for Academic Faculty and Administrative Faculty groups.
- The analysis adheres to conditions defined in the Federal Equal Pay Act (EPA) of 1963, which forbids wage discrimination on the basis of gender.
- In addition, this study includes analysis of other protected classes, in accordance with the Title VII of the Civil Rights Act of 1964.



Equal Pay Definitions & Requirements (1 of 3)

- Specific objectives of the analyses are to review the effect of various elements on pay differentials, such as:
 - Gender
 - Age
 - Race/Ethnicity
 - Years of Service (years in position or total years experience)
 - Job Value (represented by pay grade midpoint)
- Statistical analyses were performed in accordance with standard, professionally accepted methods and those methods that are recognized by the Equal Employment Opportunity Commission (EEOC).



Equal Pay Definitions & Requirements (2 of 3)

- The Equal Pay Act of 1963 forbids wage discrimination on the basis of gender when:
 - Employees perform equal work in the same establishment.
 - Employees perform jobs requiring equal skill, effort and performed responsibility under similar working conditions.
- Pay differences between equal jobs can be justified by an affirmative defense. Differences between men and women performing equal work are legal if these differences are based on:
 - Seniority
 - Merit or quality of performance
 - Quality or quantity of production



Equal Pay Definitions & Requirements (3 of 3)

- Employers have sometimes asserted that they must pay more due to market rates or values:
 - The courts have been clear that basing pay disparities entirely on prevailing market rates is not an acceptable defense and is exactly the type of practice the EPA was intended to rectify.
 - Market value qualifies as a defense only if the employer can demonstrate that it assessed the marketplace value of the particular individual's job-related qualifications, and that the compensation disparity is not based on gender.
- The most common method of identifying and/or determining possible pay equity problems is to perform a statistical analysis of the employer's neutral compensation policy or practice.



Methodology

- The accepted methodology in the analysis of a pay system for Equal Pay issues is to conduct a series of statistical tests. The purpose of the tests is to discover whether there are any pay differences between protected groups and other employees that are statistically significant, and whether these differences can be explained by a factor other than gender, race, or age.
- We have completed the following analyses:
 - Overall General Comparison: This method takes into account the dispersion of employees in each pay grade, by gender, race, ethnicity, and age.
 - Overall Regression Analysis: This method is an effective technique to learn the effect of multiple variables on a given outcome. Multiple regression allows the researcher to ask (and hopefully answer) the general question "what is the best predictor of pay".

Pay Gap Comparison – Administrative Faculty (1 of 2)



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Average Pay Gap

- We compared average pay by gender and ethnicity across the organization.
- This shows the general pay gaps without the inclusion of other contributing factors that will be included in the regression analysis.
- Even though this is limited and does not identify systemic issues, it enables comparison of the uncontrolled (i.e. does not control for job comparability) pay gap between gender and ethnicity in CSN.
- The table below shows the average gender and race pay gap at CSN.

Gender Pay Gap	Average Male Annual Rate	Average Female Annual Rate	Average White Annual Rate	Average Non-White Annual Rate
Average Annual Rate	\$75,733	\$70,670	\$75,148	\$69,977
Pay Difference Ratio		0.93		0.93

Pay Gap Comparison – Administrative Faculty (2 of 2)



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Average Pay Gap

- We compared average pay of protected groups to white male employees.
- This shows the general pay gaps without the inclusion of other contributing factors that will be included in the regression analysis.
- Even though this is limited and does not identify systemic issues, it enables comparison of the uncontrolled (i.e. does not control for job comparability) pay gap between protected and non-protected groups in CSN.

Gender Pay Gap	Average White Male Annual Rate	Average Female Annual Rate	Average Non-White EE Annual Rate
Average Annual Rate	\$75,155	\$70,670	\$69,977
Pay Difference Ratio		.92	.91



Demographic Profile – Administrative Faculty

Overall General Comparison

- We conducted an initial general comparison by gender and race at the organization level.
- The distribution of employees by gender is skewed toward female employees.
- There is a consistent distribution of race headcount at the organization level.

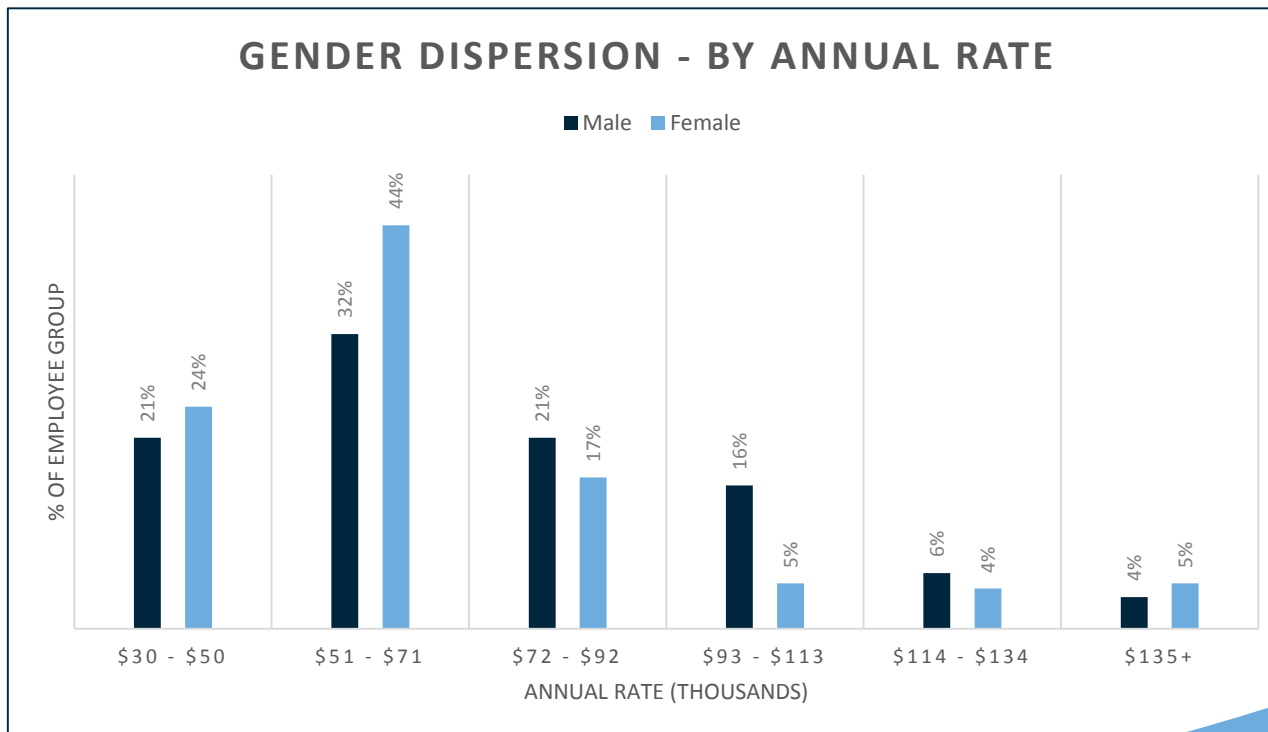
Gender	Male Count	Male %	Female Count	Female %
Overall	114	39%	180	61%

Race	White Count	White %	Non-White Count	Non-White %
Overall	151	51%	143	49%

General Distribution of Pay – Administrative Faculty (1 of 4)

Overall Dispersion of Gender by Actual Pay

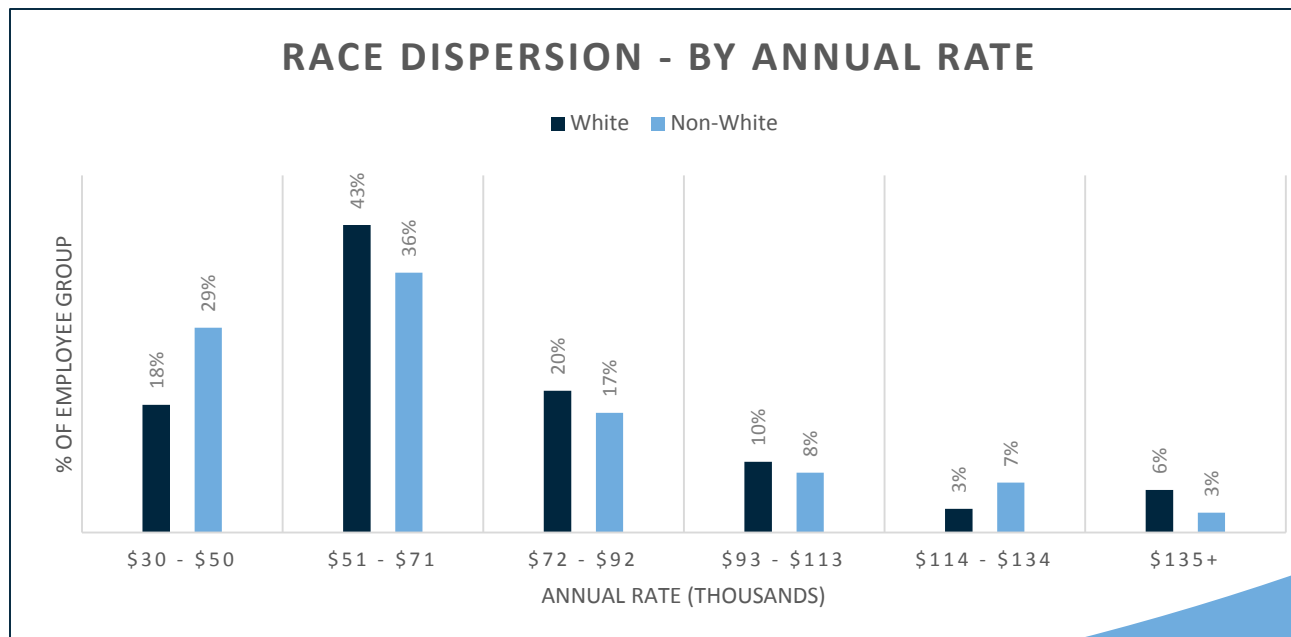
- Overall, 68% of female employees are allocated to salary groupings between \$30,000 to \$71,000, compared to 53% of males.
- 37% of males are allocated to the ‘middle’ salary groupings between \$72,000 - \$113,000, compared to 22% of females.



General Distribution of Pay – Administrative Faculty (2 of 4)

Overall Dispersion of Race by Actual Pay

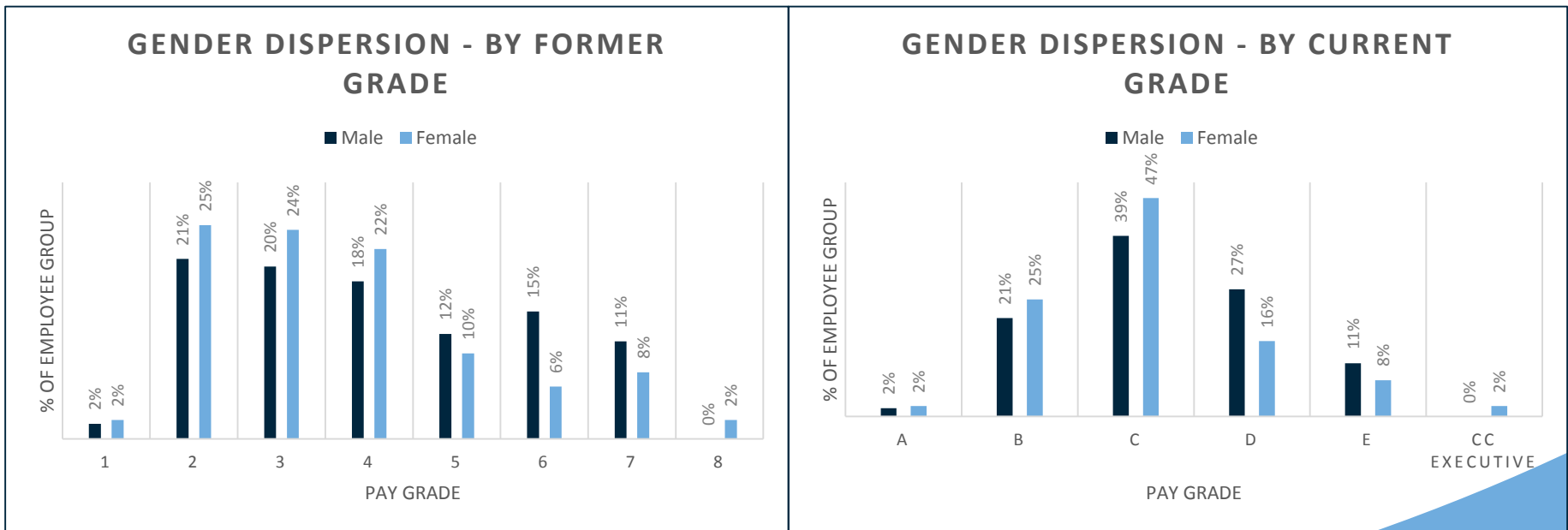
- There is a consistent distribution of white and non-white employees across the actual pay rate ranges.
- The highest concentration of white and non-white employees exists between \$30,000 - \$92,000.
- There are more white employees in the highest pay rate category, however this is not a representative sample of the diversity of the College.



General Distribution of Pay – Administrative Faculty (3 of 4)

Overall Dispersion of Gender by Former and Current Pay Grade (Job Value)

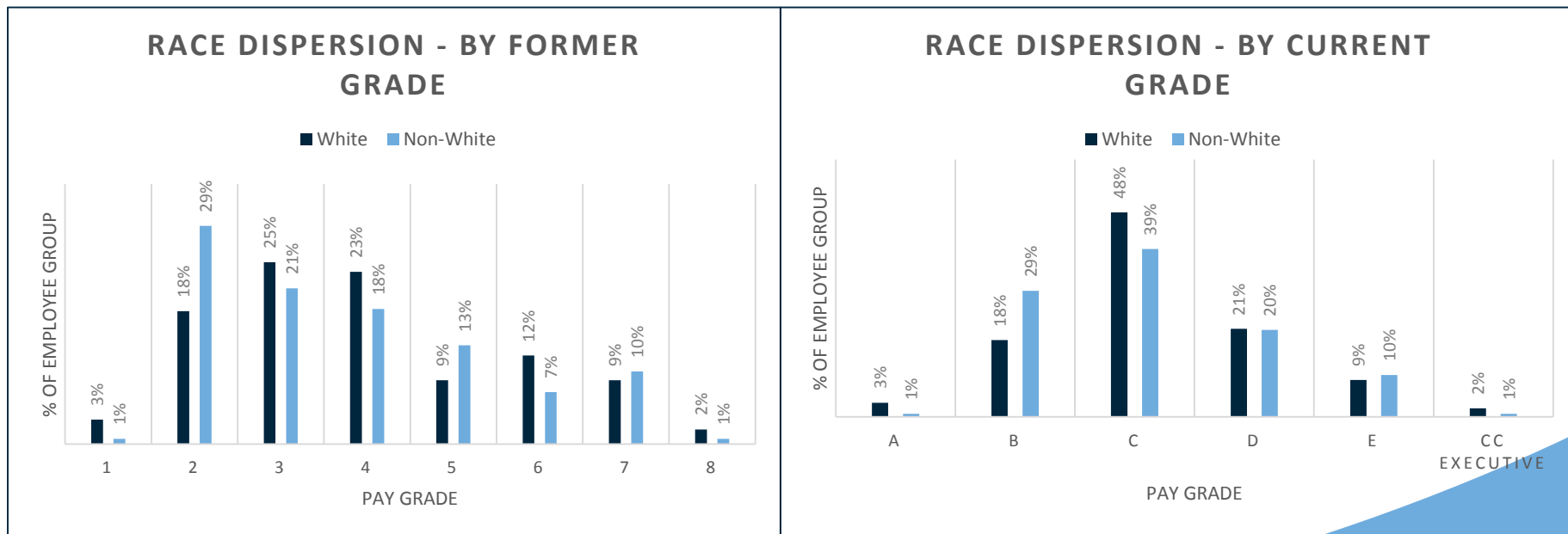
- 72% of females are allocated to grades B and C (former grades 2-4), compared to 60% of males.
- 24% of females are allocated to grades D and E (former grades 5-7), compared to 38% of males.



General Distribution of Pay – Administrative Faculty (4 of 4)

Overall Dispersion of Race by **Former and Current** Pay Grade (Job Value)

- There are comparatively more non-white employees in grade B, while there are more white employees in grade C.
- There is a consistent distribution of white and non-white employees across all remaining pay grades.





Pay Gap Comparison – Academic Faculty (1 of 2)

Average Pay Gap

- We compared average pay by gender and ethnicity across the organization.
- This shows the general pay gaps without the inclusion of other contributing factors that will be included in the regression analysis.
- Even though this is limited and does not identify systemic issues, it enables comparison of the uncontrolled (i.e. does not control for job comparability) pay gap between gender and ethnicity in CSN.
- The table below shows the average gender and race pay gap at CSN.

Gender Pay Gap	Average Male Annual Rate	Average Female Annual Rate	Average White EE Annual Rate	Average Non-White EE Annual Rate
Average Annual Rate	\$73,188	\$72,949	\$73,242	\$72,569
Pay Difference Ratio		1		0.99



Pay Gap Comparison – Academic Faculty (2 of 2)

Average Pay Gap

- We compared average pay of protected groups to white male employees.
- This shows the general pay gaps without the inclusion of other contributing factors that will be included in the regression analysis.
- Even though this is limited and does not identify systemic issues, it enables comparison of the uncontrolled (i.e. does not control for job comparability) pay gap between protected and non-protected groups in CSN.

Gender Pay Gap	Average White Male Annual Rate	Average Female Annual Rate	Average Non-White EE Annual Rate
Average Annual Rate	\$73,608	\$72,949	\$72,569
Pay Difference Ratio		0.99	0.99



Demographic Profile – Academic Faculty

Overall General Comparison

- We conducted an initial general comparison by gender and race at the organization level.
- There is a consistent distribution of gender headcount at the organization level.
- There are significantly more white employees as compared to non-white employees.

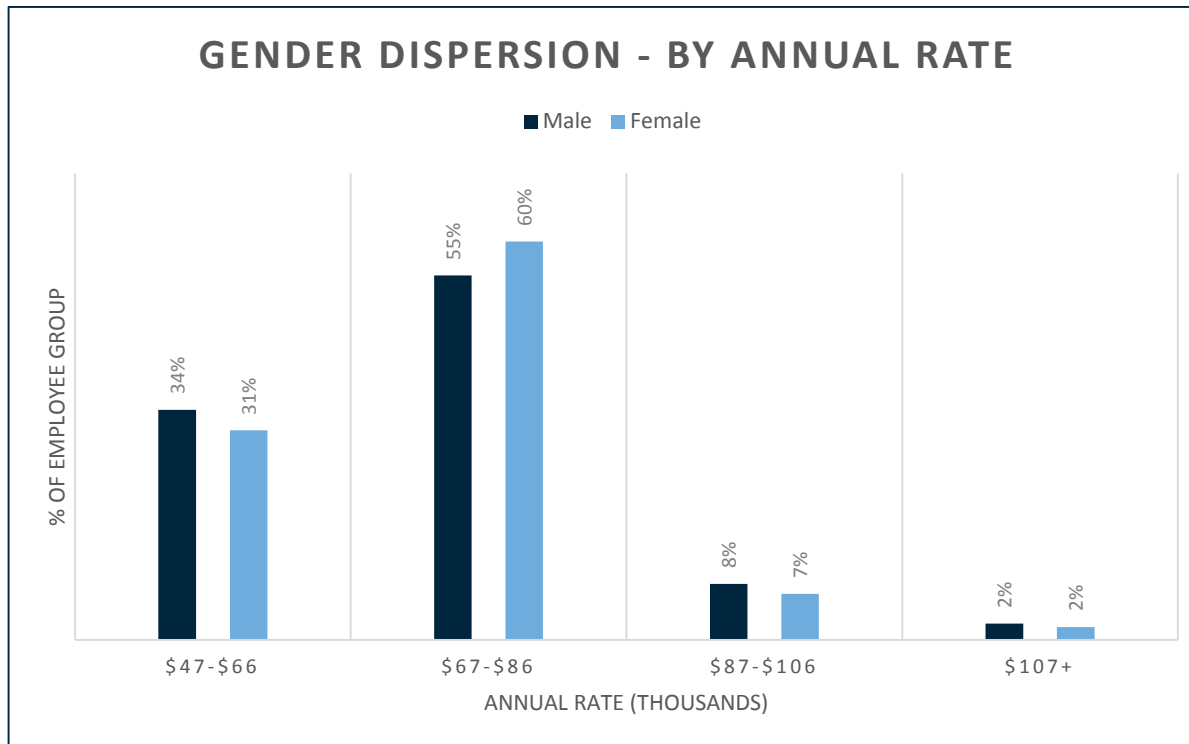
Gender	Male Count	Male %	Female Count	Female %
Overall	287	52%	261	48%

Race	White Count	White %	Non-White Count	Non-White %
Overall	411	75%	137	25%

General Distribution of Pay – Academic Faculty (1 of 4)

Overall Dispersion of Gender by Actual Pay

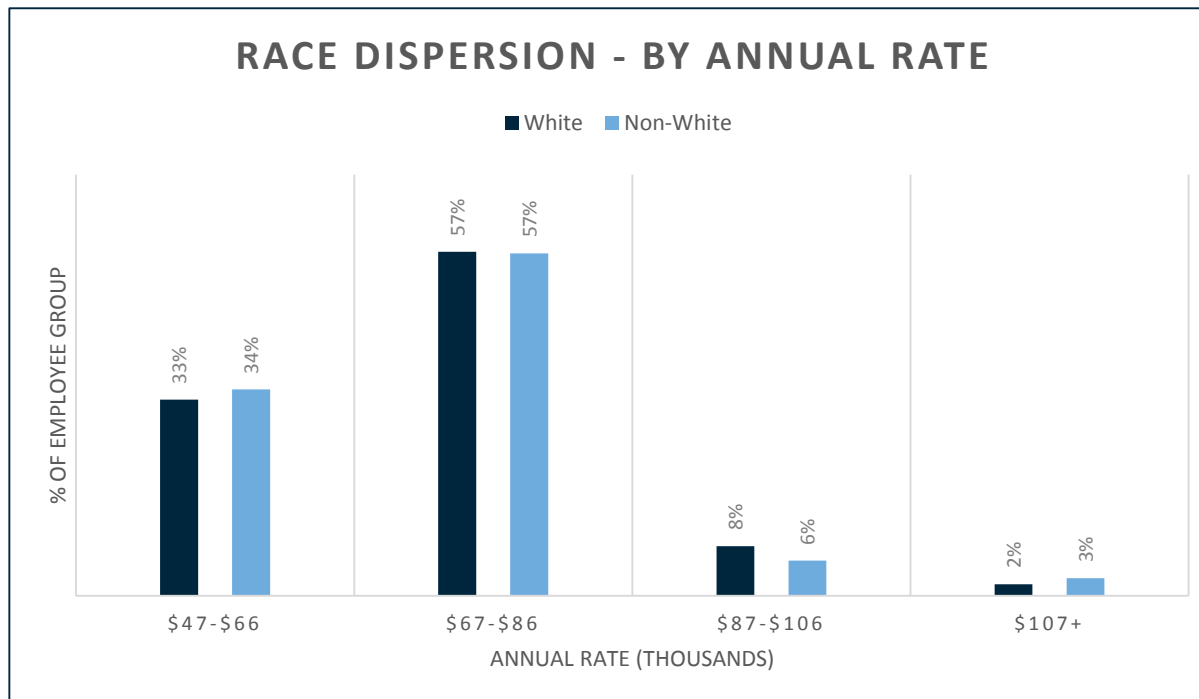
- There is a consistent distribution of males and females across the actual pay rate ranges.
- The highest concentration of both males and females exists between \$47,000 - \$86,000.



General Distribution of Pay – Academic Faculty (2 of 4)

Overall Dispersion of Race by Actual Pay

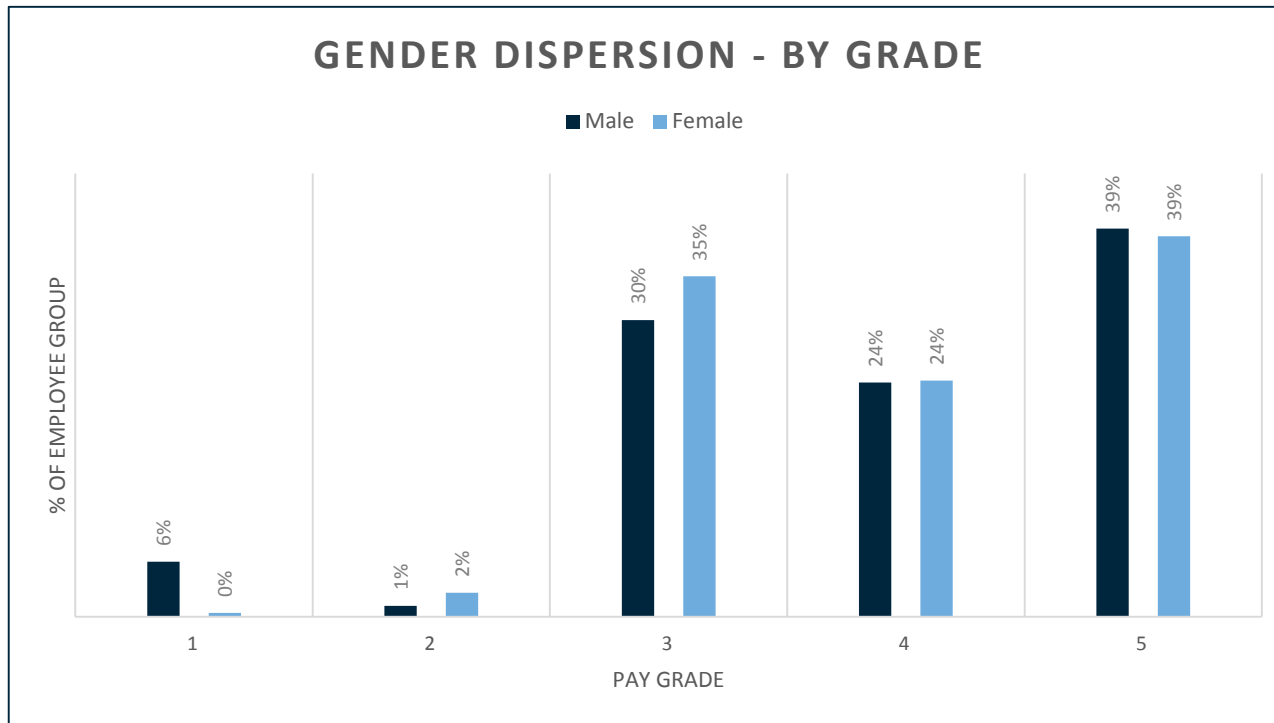
- There is a consistent distribution of white and non-white employees across the actual pay rate ranges.
- The highest concentration of white and non-white employees exists between \$47,000 - \$86,000.



General Distribution of Pay – Academic Faculty (3 of 4)

Overall Dispersion of Gender by Pay Grade (Job Value)

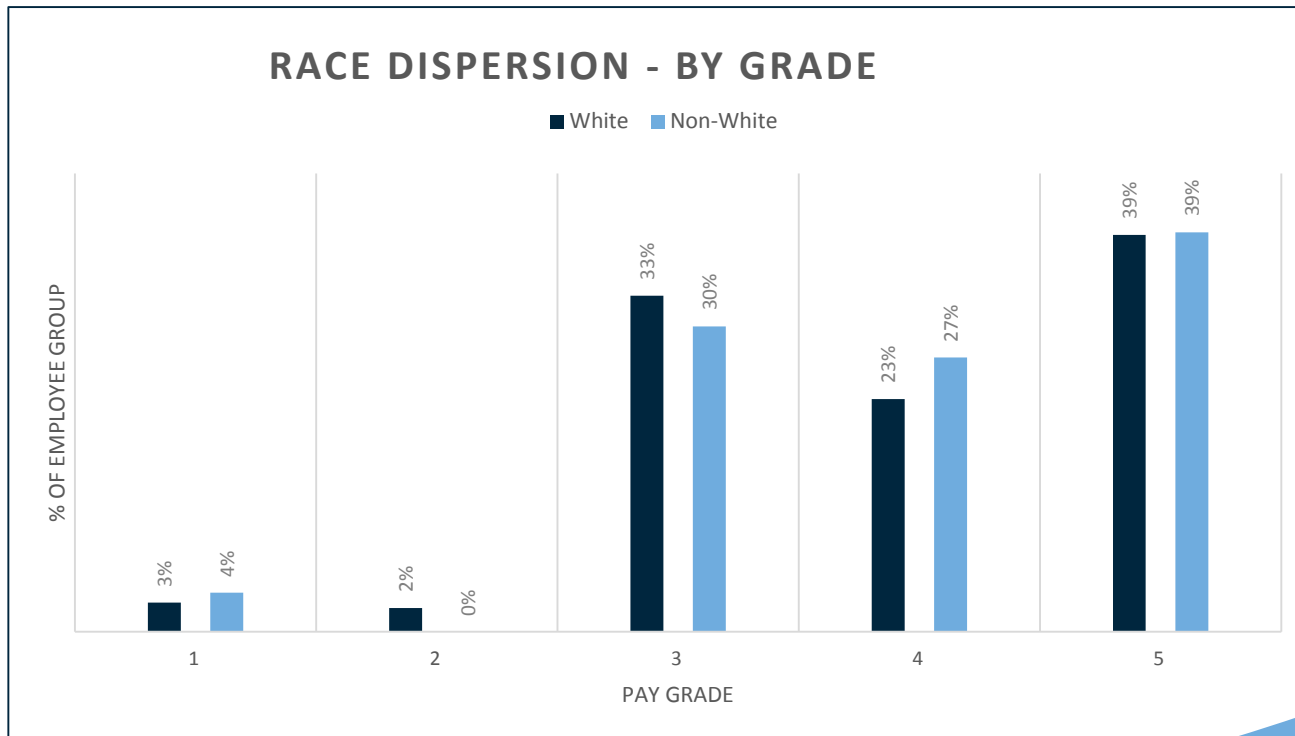
- There is a consistent distribution of males and females across all pay grades.



General Distribution of Pay – Academic Faculty (4 of 4)

Overall Dispersion of Race by Pay Grade (Job Value)

- There is a consistent distribution of white and non-white employees across all pay grades.
- Concentration of both white and non-white employees in pay grades 3-5.





Regression Analysis (1 of 3)

Regression Analysis Approach

- Specific objectives of the analyses are to review the effect of various elements on pay differentials:
 - Gender
 - Age
 - Race
 - Seniority (years in position or total years experience)
 - Job Value (represented by Pay Grade)
- Separate regression analyses were completed for Academic Faculty and Administrative Faculty.
- Statistical significance for inclusion in the formula was defined as $p < 0.05$. This is the accepted level of statistical impact on the result.



Regression Analysis (2 of 3)

Regression Analysis Approach

- Coefficient of Determination (R squared): the percentage variation of the dependent variable (base salary) that can be explained by the regression model.
 - R square value of 1.0 indicates that the model explains all variability of dependent variable (base salary).
 - R square value of 0 indicates the model does not explain the variability of the dependent variable (base salary).

R Square	Explanatory Power
0.1 to 0.3	Weak
0.3 to 0.7	Moderate
0.7 to 1.0	Strong



Regression Analysis (3 of 3)

Regression Analysis Approach

- Statistical Significance Level (P-value): This is a judgment of the quality of the test data. The statistical significance of a result is the probability that the observed relationship or a difference occurred by pure chance, and that in the population from which the sample was drawn, no such relationship or differences exist. Results that are significant at the $p < 0.05$ level are commonly considered statistically significant.

P-Value	Interpretation
Less than 0.05	Strong relationship
Greater than 0.05 and Less than 0.1	Little to no relationship
0. Greater than 0.1	No relationship

Regression Analysis – Administrative Faculty (1 of 6)

Regression Analysis Approach

- We used the following independent variables for the regression analysis:

Variables	Status	Code
Job Value	Pay Grade Midpoint	1 to 8 (former); A-E (current)
Seniority	Years in current position	-
Age	40 or Above	40 or Above = 1
Age	Below 40	Below 40 = 0
Gender	Male	Male = 0
Gender	Female	Female = 1
Race	White	White = 0
Race	Non-White	Non-White = 1

Regression Analysis – Administrative Faculty (2 of 6)



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Regression Analysis Results

Group	R Square	Job Value (Pay Grade Midpoint)	Seniority (Years in Current Title)	Age	Gender	Race
All Administrative Faculty <u>Current Grades</u>	0.87	Positive Significant	Positive Significant	Not Significant	Not Significant	Not Significant
All Administrative Faculty <u>Former Grades</u>	0.89	Positive Significant	Positive Significant	Not Significant	Not Significant	Not Significant

- Only "Negative Significant" predict possible pay equity problems.
- The regression analysis shows that no protected groups (Female, Non-White, Employee over 40 years old) are subject to significant pay differences.
- Detailed regression outputs are provided on the following slides.

Regression Analysis – Administrative Faculty

(3 of 6)

Regression Analysis Results

- The following table is the regression output for Administrative Faculty, using [current grade midpoint](#) as one predictor variable.

<i>Regression Statistics</i>				
Multiple R	0.935867494			
R Square	0.875847967			
Adjusted R Square	0.871460969			
Standard Error	10704.39799			
Observations	294			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-8969.44425	6410.56468	-1.399166017	0.1629
Current Grade Midpoint	0.868254786	0.020871887	41.5992473	0.0000
African American	-3958.968961	6433.147121	-0.615401589	0.5388
Hispanic	-4266.57682	6419.335604	-0.664644612	0.5068
White	124.105492	6299.517627	0.019700793	0.9843
Asian	459.4218287	6744.265528	0.068120365	0.9457
Two or More	-2396.346537	6775.695146	-0.353667998	0.7239
Native American	-1564.358808	8305.077094	-0.188361744	0.8507
Gender (Male = 0; Female = 1)	421.4387267	1307.57844	0.322304738	0.7475
Age (<40 = 0; >=40 = 1)	-289.9686175	1612.900038	-0.179780898	0.8575
Years in Current Position	927.9752806	182.3803733	5.08813127	0.0000

Regression Analysis – Administrative Faculty

(4 of 6)

Regression Analysis Results

- Following the first regression analysis, we removed all variables that were not statistically significant. We then re-ran analyses until only significant factors remained. In this case, our second round of analysis resulted in current midpoint and years in position remaining statistically significant.
- This indicates that current midpoint and years in current position explain 87% of variability in base salary.

<i>Regression Statistics</i>				
Multiple R	0.933520069			
R Square	0.871459719			
Adjusted R Square	0.87057628			
Standard Error	10741.17211			
Observations	294			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-10340.47517	1987.022905	-5.204004013	3.68914E-07
Current Grade Midpoint	0.867558116	0.020099993	43.16211016	0.0000
Years in Current Position	921.0220321	171.2172542	5.379259446	0.0000

Regression Analysis – Administrative Faculty

(5 of 6)

Regression Analysis Results

- The following table is the regression output for Administrative Faculty, using [former grade midpoint](#) as one predictor variable.
- The College utilizes former ranges for employee placement, thus we find it important to conduct both comparisons.

<i>Regression Statistics</i>				
Multiple R	0.949274342			
R Square	0.901121776			
Adjusted R Square	0.897627846			
Standard Error	9552.90939			
Observations	294			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-2653.128373	5697.794708	-0.465641272	0.641830441
Old Grade Midpoint	0.938347555	0.019803422	47.38310036	0.0000
Years in Current Position	796.5473871	162.8149533	4.892347853	0.0000
African American	-5376.427246	5743.217267	-0.936135096	0.3500
Hispanic	-3712.687926	5726.869357	-0.648292757	0.5173
White	-1144.47028	5623.549549	-0.203513861	0.8389
Asian	1381.04851	6016.734974	0.229534543	0.8186
Two or More	-263.2489376	6042.612164	-0.04356542	0.9653
Native American	2172.303915	7404.676749	0.293369176	0.7695
Gender (Male = 0; Female = 1)	601.2840063	1167.103249	0.515193499	0.6068
Age (<40 = 0; >=40 = 1)	15.10803863	1436.265661	0.010518972	0.9916

Regression Analysis – Administrative Faculty

(6 of 6)

Regression Analysis Results

- Following the first regression analysis, we removed all variables that were not statistically significant. We then re-ran analyses until only significant factors remained. In this case, our second round of analysis resulted in former midpoint and years in position remaining statistically significant.
- This indicates that former midpoint and years in current position explain 89% of variability in base salary.

<i>Regression Statistics</i>				
Multiple R	0.947006206			
R Square	0.896820754			
Adjusted R Square	0.896111618			
Standard Error	9623.393127			
Observations	294			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-4217.966605	1650.289073	-2.555895614	0.011099689
Old Grade Midpoint	0.936765402	0.019151975	48.91220899	0.000
Years in Current Position	797.3949065	153.6792334	5.188696538	0.000



Regression Analysis – Academic Faculty (1 of 4)

Regression Analysis Approach

- We used the following independent variables for the regression analysis:

Variables	Status	Code
Job Value	Pay Grade Midpoint	1 to 5
Seniority	Total Years of Experience	-
Age	40 or Above	40 or Above = 1
Age	Below 40	Below 40 = 0
Gender	Male	Male = 0
Gender	Female	Female = 1
Race	White	White = 0
Race	Non-White	Non-White = 1



Regression Analysis – Academic Faculty (2 of 4)

Regression Analysis Results

Group	R Square	Job Value (Pay Grade Midpoint)	Seniority (Years in Current Title)	Age	Gender	Race
All Academic Faculty	0.86	Positive Significant	Positive Significant	Positive Significant	Not Significant	Not Significant

- Only "Negative Significant" predict possible pay equity problems.
- The regression analysis shows that no protected groups (Female, Non-White, Employee over 40 years old) are subject to significant pay differences.
- Detailed regression outputs are provided on the following slides.



Regression Analysis – Academic Faculty (3 of 4)

Regression Analysis Results

- The following table is the regression output for Academic Faculty, using [current grade midpoint](#) as one predictor variable.

<i>Regression Statistics</i>				
Multiple R	0.930982996			
R Square	0.866729338			
Adjusted R Square	0.864085079			
Standard Error	4691.433407			
Observations	515			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-17288.49353	2905.640515	-5.949976757	5.02313E-09
Current Midpoint	0.918234888	0.029454443	31.17475008	0.0000
Total Yrs Experience	945.6115601	26.27343482	35.99116624	0.0000
White	2636.149835	1941.772114	1.357600007	0.1752
Asian	1573.525707	2057.532967	0.764763303	0.4448
African American	3514.9344	2107.617134	1.667729088	0.0960
Hispanic	3306.834269	2075.587831	1.593203727	0.1117
Two or More	2226.832714	2475.675529	0.899484883	0.3688
Native American	393.8777713	2857.7442	0.137828211	0.8904
Age (40+ = 1; <40 = 0)	2287.299174	701.1714871	3.262110934	0.0012
Gender (Male = 0; Female = 1)	53.73413241	418.1143286	0.128515405	0.8978



Regression Analysis – Academic Faculty (4 of 4)

Regression Analysis Results

- Following the first regression analysis, we removed all variables that were not statistically significant. We then re-ran analyses until only significant factors remained. In this case, our second round of analysis resulted in current midpoint, total years of experience, and age remaining statistically significant.
- This indicates that current midpoint, total years of experience, and age explain 86% of variability in base salary.

<i>Regression Statistics</i>				
Multiple R	0.929971659			
R Square	0.864847286			
Adjusted R Square	0.864053826			
Standard Error	4691.972763			
Observations	515			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-14839.37852	2216.89541	-6.693765729	5.73709E-11
Current Midpoint	0.92060951	0.029360898	31.35495033	0.000
Total Yrs Experience	946.4582553	26.14264538	36.2036145	0.000
Age (40+ = 1; <40 = 0)	2253.111554	698.0726512	3.227617569	0.001



Initial Results

- **Pay Equity Review**
 - We find no systemic pay equity issues at this time.
 - More detailed comparisons will be conducted.
- **Job Description Review**
 - We have found no overarching concerns related to grade placement at this time.
 - We will have a more detailed update upon additional analysis.



Next Steps (1 of 2)

- **Pay Equity Review**
 - Discuss methodology with CSN project team to ensure we have captured all relevant information for analysis.
 - Collect market data for those market factor positions, to allow inclusion in pay equity analysis.
 - Upon confirmation of all data to be utilized, conduct detailed pay equity analyses using more refined employee groupings (i.e. department for Administrative Faculty; pay grade).
 - Conduct detailed comparisons by job title to identify potential pay equity issues.
- **Compression Analysis**
 - This analysis will follow completion of the overall pay equity and comparison reviews.



Next Steps (2 of 2)

- **Job Description Review**
 - Continue review of all job descriptions to confirm proper grade placement.
- **Salary Structure Review**
 - Provide recommendations for ongoing use of NSHE salary structure to limit compression and equity issues.
- **Prepare a draft study report for review by CSN project team.**