

NC State Faculty Salary Equity Study – Fall 2006 University Planning and Analysis

Overview

In 2001, NC State allocated more than \$700,000 in salaries and benefits to remedy salary inequities reported in the “North Carolina State University Report on the University-Wide Salary Equity Study,” an analysis based in 2000 salaries conducted by Haignere, Inc. A study using the same methodology was conducted using 2003 salary by NC State’s University Planning and Analysis that found salary inequities remain but were greatly reduced. The 2006 study, also conducted by UPA, finds a salary disparity averaging \$491 for minority males and no salary disparity for women.

Because there is still a disparity for minority males, more needs to be done to improve the salary disparities for minority males. It is important to note that this study reflects the circumstances of the faculty population as a whole, and individual salaries should be evaluated on a case-by-case basis.

Methodology

The 2006 NC State Faculty Salary Equity Study replicated portions of Haignere, Inc.’s study. An executive summary of that report is available, upon request, at NC State’s University Planning and Analysis office.

The Haignere, Inc. study and the 2006 NC State Faculty Salary Equity Study employed a regression methodology similar to previous faculty salary equity studies at NC State. A regression equation is used to predict what the salaries for females and minority males would be if their career attributes (such as rank, degree, and previous experience) were rewarded in the same way as those of white males. Meritorious performance is not a factor in this analysis.

The difference between the predicted salary and a person’s actual salary is called the salary residual. The average residual for a gender/race group measures the difference between the actual salaries of those in a group and a statistical estimate of what they would have been paid if they had been white males. A negative residual indicates that, on average, the actual salaries of faculty members in the group (e.g. minority males) are lower than salaries of white males. A positive residual means that, on average, the actual salaries of those in the group are higher than those of white males.

The regression model employed the following variables:

- Race/Gender – white male, female, minority male
- Highest Earned Degree – PhD, First Professional, Master’s, below Master’s
- Tenure Status – tenured, on tenure track, not on tenure track
- Administrative Title – yes or no
- Rank – professor, associate professor, assistant professor, instructor, lecturer
- College – used to represent discipline at the university level
- Previous experience – years between highest degree date and first NC State hire date

- Years at NCSU Before Current Rank – years between hire date and current rank date
- Years at Current Rank – years between 2006 and current rank date

The study population included all full-time faculty in academic departments and Student Affairs who are permanent, temporary, or on leave with pay as of September 30, 2006. Administrators (e.g. department heads and deans) whose primary responsibility is not instruction are excluded as are faculty outside the ten colleges or Student Affairs. In some cases, certain administrators were included because the unique nature of their responsibilities more closely resembled those of faculty than administrators (e.g. Coordinators in Physical Education and CHASS; Program Directors in Textiles, Management, and Design; Directors in Veterinary Medicine, Education, Natural Resources, CHASS, Design, Engineering, and CALS).

Because a minimum number of observations are required for accurate regressions, some colleges were combined to increase the population to acceptable levels. In the 2006 study, regression groups were CALS; Engineering; CHASS; PAMS; Design, Natural Resources, Education, and Student Affairs; and Textiles, Management, and Veterinary Medicine.

Limitations of the Study

Several factors may confound this analysis. The faculty populations change with time because some faculty left the study population and others entered it through changes in employment status and title. In addition, it is not possible to categorize past increases made for equity concerns from those salary increases made for other reasons (e.g. counter offers, promotions in rank). This study does not address issues of salary adequacy or market-appropriate salaries; whether faculty groups are over- or underpaid relative their colleagues at other institutions was not considered. Finally, this study’s methodology doesn’t address many college-specific salary considerations, which need to be evaluated outside this study’s parameters. For example, in the College of Veterinary Medicine three college-specific issues skew the results but aren’t evaluated in this study: 1) differences in average age of white males and females/minority males, 2) specialty status of faculty not tracked by UPA, and 3) many faculty possessing multiple doctoral degrees (PhDs with an DVM is common).

Results for Tenure Track Faculty Members

The first regression analysis included only faculty who are tenured or on the tenure track. This analysis corresponds to the data presented in Figure 19 in the University Reported prepared by Haignere, Inc., which was used as the basis for the 2001 salary remedy. Then tenure track analysis includes 845 white males, 298 women, and 152 minority males.

2006 Faculty Salary Equity Survey - White Male Regression Model

	n			Average Residual (Actual - Predicted)		Percent Underpaid		Total Wage Difference		
	White Males	Females	Minority Males	Females	Minority Males	Females	Minority Males	Females	Minority Males	All
All Faculty	988	474	171	-\$469	-\$1,327	59.3%	59.1%	-\$222,306	-\$226,936	-\$449,242
Tenure Track Faculty	845	298	152	\$466	-\$491	56.0%	55.3%	\$0	-\$74,614	-\$74,614

The residual for females – which was -\$1167 in 2000 and -\$297 in 2003 – is now a positive \$466. This figures suggests there is no salary inequity for female faculty who are tenured or on tenure track.

The residual for minority males – which was -\$2,424 in 2000 and -\$1276 in 2003 – has been reduced to -\$491. Although minority males are still, on average, paid less than comparable white males, the gap has decreased by approximately 80% since 2000.

Tenure, Tenure Track Faculty Only							
	Adjusted R-Square	White Males	Females		Minority Males		
		n	n	residual	n	residual	
CALS	0.434	264	73	420	16	3444	
Design & Textiles	0.682	72	21	-2021	13	3642	
Education	0.665	25	29	41	5	108	
Engineering	0.763	146	18	2820	52	-1859	
Nat Resource	0.689	46	11	-4699	6	4291	
CHASS	0.691	125	78	-183	13	-1828	
PAMS	0.700	98	30	251	33	-4297	
Vet Medicine	0.723	20	10	-4140	5	-5489	
Management	0.396	44	14	18315	7	13997	
Student Affairs	0.862	5	0		1	-6202	

Results for All Faculty

A second analysis probed the salary equity of all faculty in the population, regardless of tenure status. Given the combination of colleges, all but two females and minority male faculty member had a white male counterpart. However, some categories (e.g. Lecturer and Instructor) often had very few white males reducing the validity of regression analysis. Despite this, inferences can be drawn about salary equity within this population by comparing the residuals from tenure-track only population to those of the entire faculty. Differences in regression results can be attributed to the addition of non-tenure track faculty into the regression model. This population includes 988 white males, 474 females, and 171 minority males.

Females in the expanded population have an average residual of -\$469, which is very different from the tenure-only residual. This suggests that non-tenured females have a larger disparity between their white male counterparts than do tenured females.

The residual for minority males in the combined tenure track and non-tenured track group is - \$1,327 and more negative than the tenured-only population. This suggests, that like women, non-tenured track males experience more salary inequity than do tenured minority males.

All Faculty in Population						
	Adjusted R-Square	White Males	Females		Minority Males	
		n	n	residual	n	residual
CALS	0.4734	278	102	487	17	3351
Design & Textiles	0.718	36	26	-4588	13	2561
Education	0.736	34	38	200	5	-112
Engineering	0.7658	164	27	2862	58	-2189
Nat Resource	0.696	53	17	-4365	8	5311
CHASS	0.7048	166	147	-1695	15	-3664
PAMS	0.6455	113	46	275	36	-5049
Vet Medicine	0.8071	72	41	-7794	7	-8728
Management	0.4953	52	20	14672	8	10670
Student Affairs	0.8279	20	10	-6644	3	-6890

Cost of Additional Remedy

The results of this study suggest salary inequities continue to improve for tenured or tenure-track faculty. However, the non-tenure track faculty inequities are growing. To address the inequities for tenured or tenure track faculty would require an additional investment of \$75,000 plus benefits. This figure may change after accounting for salary issues outside the scope of the salary equity study.