Assessment of Salary Equity

Study objective: Assess salary differences related to gender, race/ethnicity, and age, while controlling for legitimate employment-related variables important to explaining pay differences. The study was conducted by Dr. Wendy Stock, professor of economics at Montana State University.

Methodology: The analysis rested on three statistical models:
- Model 1 regresses salaries on gender, ethnicity/race, age, and a set of employment-relevant variables (seniority and experience, rank, employment class, tenure status, educational background, and college/unit). The model is used to determine if gender, ethnicity/race, and age are statistically significant determinants of salaries once legitimate employment-related factors are controlled for. A variant of model 1 is used to predict salaries for individual employees based only on their employment-related characteristics, i.e., not their gender, ethnicity/race, or age, and to compare those predictions against actual salaries. Employees with salaries that appear to be "outliers" were identified.
- Model 2 regresses observed salary separately for men and women, and for whites and non-whites, on in employment-related characteristics of men and women, and of whites and non-whites. The model is used to decompose the salary differences into an explainable component, for example, average salaries for men are lower because their average level of educational attainment is lower, and an unexplained component.
- Model 3 assesses whether or not there are statistically significant different rates of return to employment-related variables, e.g. years of experience, for men versus women and for whites versus non-whites.

Key findings for faculty:
- Differences in the salaries of men and women and of whites and non-whites largely disappear once employment-relevant factors are controlled for.
- The majority of pay gaps in the faculty data can be explained by differences in legitimate employment-related characteristics.
- Differences in rank are the most important sources of differences in employment-related characteristics of men v. women and whites v. non-whites
- A non-tenure track position carries larger negative returns for women than for men.

Key findings for staff:
- Differences in the salaries of men and women and of whites and non-whites are statistically significant (once employment-relevant factors are controlled for); however, the model is not statistically robust as evidenced by the fact that the coefficients on gender and ethnicity/race change when salary grade is excluded from the model. Most likely, the model suffers from endogeneity bias in that salary grade is itself affected by gender or race/ethnicity.
- Differences in salaries by gender and race/ethnicity are primarily due to differences in employment-relevant characteristics of the groups.
- The salary grade variable is the most important sources of differences in employment-related characteristics of men v. women and white v. non-whites in staff positions.

- Women (and also whites) in lower salary grades experience larger negative salary penalties associated with being in lower-level positions than do men (and non-whites) in those lower salary grades.