

## Appendix C

### Executive Summary of <University> Faculty Salary Equity Study

#### Background

<The University> annually conducts analyses of faculty and staff salaries. Originally managed internally, beginning in 2012 external, independent consultants have been hired to design and conduct these studies. More recently, Human Resources and the <Committee name> have collaborated regularly on faculty salary equity studies, engaging faculty and administrators in setting specifications, selecting external consultants and disseminating results. These studies are independent of parallel studies commissioned through <University> Human Resources. In 2015, <an external consultant>, Human Resources and the <Committee name> first co-sponsored a study, thus establishing a collaborative process and methodology. Since that time, two additional studies have followed these guidelines while refining the statistical model.

This report summarizes the methodology and findings of the 2018 faculty salary equity study. In cases where individual salaries are considerably lower than expected, Human Resources will follow up with associated leadership as appropriate based on results of the analysis. Documentation related to compensation processes, including benchmark salary figures, can be found on the Human Resources website (link provided).

#### Executive Summary

The dataset used for the 2018 study consists of information from a total of <#> tenured and pre-tenured <University> faculty. (Deans, faculty in endowed chairs, and working retirees were not included).

The dependent variable used throughout this study was the natural logarithm of the annualized academic year 2017-2018 base salary. The independent variables were: benchmark

Appendix to:

Marchetti, C. E. & Bailey, M. B. (2022). The Importance of HOW in Faculty Salary Equity Studies: Development and Impact of an ADVANCE Salary Equity Study and Workshop Series to Promote an Inclusive Academic Environment, *The Advance Journal*.

salary, years in rank; years of service; years at tenure; years left to tenure; three-year average performance rating 2013-2017; and dichotomous (or “dummy”) variables for gender, rank, tenure status, management position flag, college, STEM flag, 2017 performance rating category, terminal degree, and AALANA (African American, Latino American, Native American) status. (Note: The AALANA acronym continues to be used but the race/ethnicity categories currently used by the federal government are Black or African American, Hispanic or Latino, and American Indian or Alaskan Native. These classifications do not include internationals.) Other variables were also considered for inclusion within the model and were excluded because of insignificance or lack of institutional tracking, such as years of experience prior to employment at <the University>.

It was found that benchmark salary and years in rank accounted for approximately 75% of the variation in salary. In addition, college, management position, rank, and performance rating were significant predictors of salary, and with the addition of these variables to the model, approximately 82% of the variation in salary is explained. Gender, AALANA status, tenure status, years at tenure, time left to tenure, terminal degree, and STEM flag were not significant predictors of salary.

## **Methodology**

To understand differences in salary, we estimated three regression models that iteratively introduced controls for measureable factors that should legitimately affect pay. The hierarchical approach enabled us to view the additive effect of each variable upon the fit of the model and observe how the coefficients and their statistical significance values changed with each addition. All models used the natural log of annual salary (i.e., 9-month, full-time equivalent) as the dependent variable, and were first estimated with the dummy variable for gender as the only

independent variable; additional variables were successively added based on their explanatory power.

**Table C1.**

***Salary Equity Study Models***

ALL MODELS		***Performance Rating Measure	
Dependent Variable	Ln(Salary)*		
Independent Variables	Ln(Benchmark**) <ul style="list-style-type: none"> <li>College</li> <li>STEM Flag</li> <li>Rank</li> <li>Tenure Status</li> <li>Years in Rank</li> <li>Years of Service</li> <li>Years at Tenure</li> <li>Years Left to Tenure</li> <li>Terminal Degree Flag</li> <li>Management Position Flag</li> <li>Gender</li> <li>AALANA Status</li> <li>***Performance Rating</li> </ul>	Model 1	No Performance Data Included <n = #>
		Model 2	2017 Performance Rating Category <n = #>
		Model 3	Five-Year Average Performance Rating (2013-2017) <n = #>

\* Natural log of annual salary (i.e., 9-month, full-time equivalent)

\*\* Based on teaching discipline (CIP code) and rank

Models 1, 2 and 3 differ in how they incorporate performance rating (see Table C1): **Model 1** did not use any performance data, **Model 2** used the 2017 performance rating category (unsatisfactory, does not meet expectations, meets expectations, exceeds expectations, outstanding), **Model 3** used the five-year average performance rating (2013, 2014, 2015, 2016, 2017). The three models provided similar results. The coefficient of each independent variable indicates its effect on the dependent variable, controlling for all the other variables included.

**Findings**

As expected, benchmark, years in rank, management position, rank, and performance rating were significant predictors of salary with positive coefficients. According to <the external consultant>,

As expected, all else equal, <the University> pays more for positions with greater benchmark compensation. Salary benchmarks are chosen to reflect the position and the rank... That would tend to make salary benchmark correlated with the rank and college variables. While there is a shared covariance among [benchmark, college, rank] and pay, each captures individual aspects the other does not.

Essentially, the salary benchmark coefficient captures the impact of pay for a position in the market in a particular discipline at a certain rank. (Note: <College name> uses one benchmark per rank, applied to all disciplines. Similarly, <second College name> has one benchmark per rank, applied to all disciplines, for all ranks except Professor, where a set of benchmarks are provided by years in rank.) Because rank has already been accounted for via benchmark, its coefficient captures the impact of promotion on salary. The college variable, which is also entwined with discipline and thus benchmark, captures the impact of past pay practices or current choices in how to pay to market. The coefficients for the <#> colleges varied, with some positive and some negative compared to the baseline college, <College name>.

Total years of service at <the University> (possibly including those outside of the tenure track) and tenure status were significant predictors with negative coefficients. <The external consultant> explains the “years of service” coefficients in this way:

The impact of years in current rank is typically to push someone up within the pay range for that position or rank, consistent with a positive regression coefficient. The impact of total years of service is normally divided between the positive effect that results in someone being in a higher rank or position (and thus estimated there) and the remaining (negative) effect of years in a prior position being an indicator of how long it takes to get to that level...

The estimated coefficients for the gender (female flag) and AALANA status variables, while negative, were not statistically significant from zero in any of the models, indicating that the observed average salary difference by gender or AALANA status could be attributed to chance in a broader population, as opposed to some systemic source. (It should be noted that random error is present in all measurement but should not impact findings as it will differ across groups and individuals, theoretically zeroing out. Alternatively, systematic error is indicative of something that is consistently present across groups or individuals and affects the distribution positively or negatively, thereby introducing bias.)

### **Recommendation**

For the 2018 faculty salary equity study, the <Committee name> worked collaboratively with <University> Human Resources to set specifications and hire <the external consultant> to conduct the analysis, continuing to follow the methodology and process established during the 2015 study to ensure that stakeholders can have high levels of confidence in the process and the results. <The University> is committed to conducting these studies on an annual basis. This study once again used a unique approach in terms of the number and breadth of people involved, working in partnership with the consultants to develop a salary model and report, and demonstrating transparency through a commitment to disseminating results. The <Committee name> recommends that <the University> continue to use and develop a collaborative process and resulting methodology to conduct annual faculty salary equity studies.

Recommendations for future analysis:

- Return to using a Three-Year Average for Performance Rating (not five-year).
- Establish one college as the baseline college for all future studies.
- Limit and refine the number of experience variables:

- Drop Years at Tenure and Years Left to Tenure.
- Continue to use Years in Rank.
- Investigate using Years in Tenured/Tenure-Track Position Prior to Current Rank  
(instead of Total Years of Service OR Total Years Prior to Current Rank).
- Continue to combine small academic units that do not reside in a college into an “Other” college category.