UNIVERSITY OF CENTRAL FLORIDA

FACULTY SALARY EQUITY STUDY - 2020

Summary of the UCF Working Group's Findings and Recommendations

An analysis of 2020-21 academic year salaries for full time, tenured, tenure earning, and non-tenure faculty based on salaries and roles as of November 2020. This report includes descriptive and multivariate analyses by rank and summarizes aggregate findings and population characteristics.

FEBRUARY 2021

REPORT PREPARED BY FACULTY SALARY EQUITY STUDY WORKING GROUP
Members include representatives from Faculty Excellence, Faculty Senate, Human Resources, Office of Institutional Equity, Institutional Analytics, and Institutional Knowledge Management

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UCF 2020 FACULTY SALARY EQUITY STUDY

EXECUTIVE SUMMARY

BACKGROUND

In 2016, the faculty senate at the University of Central Florida commissioned the office of Institutional Knowledge Management to research gender and ethnicity salary inequities among the faculty ranks at the university. A diverse team consisting of faculty, researchers, and human resource representatives collaborated over seven months to study and present findings on the charge and issue.

Using descriptive analyses as well as a nested linear regression on 1,606 faculty (1,519 professors, instructors, and lectures plus 87 administrators from the president to college deans and directors), the results of the 2016 study indicated that both female and underrepresented minority associate faculty earned less than their male and white peers did respectively. As a result, the university instituted policy adjustments to compensation practices along with financial adjustments to the most affected faculty in order to address the issue.

While the 2016 study did provide key insights into faculty salary disparities from a university level, it did not address impacts of ADI as a separate factor or possible inequities within the colleges, within tenure faculty, within non-tenure faculty, due to salary compression or due to salary inversion.

GENESIS OF 2020 FACULTY SALARY EQUITY STUDY

In 2020, the faculty senate proposed and accepted resolution 2019-2020-15 (Appendix J), which called for a five-year periodic analysis of faculty salary to cover the areas of tenure and non-tenure salary equity (e.g. gender/race/ethnicity) along with studying potential salary compression and inversion inequities.

Starting in April 2020 and completing in February 2021, a diverse team consisting of faculty, researchers, and human resource representatives collaborated to study and present findings to address the resolution. This report addresses the salary equity portion of the resolution. The salary compression and inversion portion of the resolution are addressed in a separate report.

SAMPLE DATA AND METHODOLOGY

Sample Data	**Salary Equity Analysis** – Tenured/Tenure Earning Tenured or tenure-earning faculty employed full-time as of November 1st, 2020 (N= 942). Administrative faculty and faculty for MD programs were excluded. **Salary Equity Analysis –** Non-Tenure Earning Non-tenure earning faculty employed as of November 1st, 2020 (N= 672).

Methodology	**Salary Equity Analysis** This study includes descriptive and multivariate analyses. Multivariate Regression models were used to explore the effect of various factors on salary by faculty both at the university and within college. Additionally, prediction intervals were used to identify extreme and cautionary outliers: faculty whose salary was below the lowest predicted value.

FINDINGS

- Salary Equity – Tenure/Tenure Earning
  - **There are no statistically significant differences in salary due to gender, race or ethnicity at the University level.**
  - Records of individual faculty whose salary falls below the lowest bounds of predicted salary intervals, based on the control factors, will be made available to appropriate administrators for review of salary.
- Salary Equity – Non-Tenure Earning
  - **There are no statistically significant differences in salary due to gender, race, or ethnicity at the University level.**
  - Records of individual faculty whose salary falls below the lowest bounds of predicted salary intervals, based on the control factors, will be made available to appropriate administrators for review of salary.

CONCLUSIONS AND RECOMMENDATIONS

The committee concurs with the findings that there are no statistically significant differences in salary due to gender, race or ethnicity at the University level for either the Tenured/Tenure Earning or Non-tenure Earning faculty except as note in one College-level model discussed below.

The tenured/tenure earning outlier model identified some faculty outliers but is limited in its interpretation due to it not controlling for the discipline or department within a college and may both fail to include and exclude faculty in the analysis.

The non-tenured earning outlier model identified some faculty outliers but did not reveal any distinct patterns identified by race or gender. Sample size is a limitation for this analysis as is the weaknesses of adjusted R-squared for the regression upon which the outcomes are based. Further, identified median salary differences between female and male scholars may be due to differing job codes rather than gender. As such, the results are inconclusive with regards to female scholar faculty salary and their male colleagues.

The committee did identify a finding worth the attention of the Provost and the Dean of the College of Arts and Humanities. The CAH regression model reveals statistically significance differences between respective male and female Assistant and Associate Professor categories inferring inequality against white males.

Given that most college models lacked the sample size to provide confidence in inferential outcomes, the committee recommends that future analyses explore additional approaches. This may include, for example, merging similar Colleges to create subsets for analyses that may yield sufficient cell sizes and more robust subset results. Non-parametric techniques applied to a population without administrators in the population may prove useful in identifying the Colleges that might be merged based on similar market demand as expressed in salary levels.

UNIVERSITY OF CENTRAL FLORIDA 2020 FACULTY SALARY EQUITY

INTRODUCTION

In 2016, the faculty senate at the University of Central Florida commissioned the office of Institutional Knowledge Management to research gender and ethnicity salary inequities among the faculty ranks at the university. A diverse team consisting of faculty, researchers, and human resource representatives collaborated over seven months to study and present findings on the charge and issue. Using both descriptive and multivariate analysis techniques, the results of the 2016 study did show that both female and underrepresented minority associate faculty earned less than their male and white peers respectively. As a result, the university instituted policy adjustments to compensation practices along with financial adjustments to the most affected faculty in order to address the issue.

The 2016 study group based their modeling and analysis on "predictor variables of interest includ(ing) demographic characteristics (gender and race/ethnicity), measures of experience (e.g. rank, tenure status, time at UCF, number of ranks held), structural factors (college/department and employee class), and merit-based factors (e.g. administrative responsibilities and teaching/research awards received).

In 2020, the faculty senate proposed and accepted resolution *2019-2020-15 (Appendix J)*, which called for a five-year periodic analysis of faculty salary to cover the areas of tenure and non-tenure salary equity (e.g. gender/race/ethnicity) along with studying potential salary compression and inversion inequities. The analyses and results presented in this study directly addresses the new faculty senate resolution for the 2020 period with regards to salary equity with both tenured and tenure-earning faculty and non-tenure earning faculty.

The previous 2016 study showed that there existed significant salary inequities with respect to both gender and underrepresented minorities for tenured/tenure earning faculty at the Associate Professor ranks. In addition, there were 32 faculty across ranks who were identified as having salaries below a predicted value, 18 of which needed a critical review. One major shortcoming of the 2016 analysis was how Administrative Discretionary Increases (ADI's) were handled. The 2016 study did not distinguish between ADI's and other types of merit pay. Since removing the ADI's which faculty received could not be a performed, the total number of merit pay instances, which included ADI's was used. This current study improves upon the previous in that merit pay is now split into ADI's and other merit types which will allow for the analysis to find any direct impacts ADI's have on faculty salary.

Another discovery from 2016 was that the home college of the faculty member did have impacts on salary, but further analysis into each college was not performed due to time constraints. Many studies on the topic of faculty inequity cite either the impact individual colleges play on salary or directly attempt to study the impact within colleges. This study aims to address whether inequities exist at both the university level and the college levels. Lastly, while many studies focus on just the tenured/tenure earning faculty, this study will also address the large population of non-tenure earning faculty for the first time.

SAMPLE

Salary and job data were based on subsets, described below, from a total dataset containing faculty data from 1993 - 2020. Any salary increases (retroactive or otherwise) and any tenure status or job status changes applied after this date are not included in this sample. Salary, demographics, and other information on faculty members were gathered from PeopleSoft. In order to ensure data integrity, some annual records kept for longstanding employees prior to 2002 may not be included in the sample[1]. However, all awards and pay increases are available for the duration of the employees' time at UCF.

- **Tenure and Tenure Faculty Analysis (Non-Admin Faculty)**

  - A total of 942 (Appendix B) full-time tenured/tenure track faculty members from the 2020-21 academic year (Fall 2020) were used in three separate analyses, including 276 Professors, 357 Associate Professors, and 309 Assistant Professors. Less than full time faculty (n= 34) and non-tenure-earning (n= 777) were sequentially excluded from the original dataset for this portion of the study. Additionally, faculty from College of Medicine MD Programs[2] (n= 17) and faculty who predominantly serve as administrative faculty[3] were excluded (n= 123). Finally, one faculty member whose salary is considered a significant outlier[4] was removed from the study. Note: descriptive statistics for these administrative faculty can be found in Appendix K.

- **Non-Tenure Earning Faculty Analysis (Non-Admin Faculty)**

  - Information from a total of 672 (Appendices E & H) full-time non-tenure track faculty members from the 2020-21 academic year (Fall 2020) was used in a regression analysis. Please note that non-tenure Earning faculty (n= 811) who work less than full time (n= 22) or serve predominately as administrative faculty[5] (n= 84) were sequentially excluded from the original dataset for this portion of the study. Furthermore, faculty from College of Medicine MD Programs [6] (n= 33) were removed from the Non-Tenure Earning faculty dataset. In all, the non-tenure earning faculty could be grouped based on their job code into seven categories including Lecturers (n= 276), Instructors (n= 193), Scholars (n= 45), Specialized Faculty (n= 37), Professors (n= 53), Instructional Designer (n= 37), and Librarian (n= 31). Table 1 in Appendix E provides the detailed grouping information for the non-tenure earning faculty data set used in this study.
  - A subset consisting of Instructors and Lecturers (n= 469) was extracted from the non-tenure earning faculty sample for additional analyses. Table 2 in Appendix E listed a further grouping information for the Instructors and Lecturers used in the Instructor/Lecturer models.

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[1] In the current research model, this only affected the number of ranks held at UCF. Counts of rank(s) held prior to, but not during or after, 2002 may not be accounted for in the analysis.
[2] Faculty whose home department is reported as College of Medicine Clinical Sciences, Internal Medicine, and Medical Education
[3] Except for Coordinator, faculty with any level of administrative function are excluded.
[4] Based on the result of Rosner's test (for reference see Rosner, B. (1983)).
[5] Same criterion applied to tenured/ tenure-earning sample selection is applied here. See footnote 3 for details.
[6] Faculty whose home department is reported as College of Medicine Clinical Sciences, Internal Medicine, and Medical Education.

METHODS

TENURE / TENURE EARNING EQUITY ANALYSES

OUTCOME VARIABLE

The main outcome variable includes the reported 9-month salary for 2020 for each faculty member. Salaries were converted to a 9-month equivalent amount for faculty members on 12-month contracts[7]. Natural logarithm of the annual salary is applied because the transformed value more closely represents a normal curve in the distribution than the raw salary (See Appendix D).

PREDICTOR VARIABLES

Demographics include gender (male and female) and race/ethnicity. The race/ethnicity variable was coded into four categories including White, Asian, Underrepresented Minority, and International. Underrepresented minorities include faculty identified as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial. International faculty include all faculty currently identified as "Non-Resident Alien" according to IPEDS definitions ("Definitions for New Race and Ethnicity Categories", n.d.). The multivariate models applied to estimate Tenured/Tenure-Earning faculty salary also include an interaction term between gender and race.

Control Variables include total number of years employed as a faculty member at UCF[8]; total number of distinct ranks that the faculty have held at UCF; college (based on home department assignment); the total number of TIP, RIA, and SoTL awards earned; and the total number of merit pay increases earned (regardless of dollar amount)[9] due to Administrative Discretionary Increase (Merit-ADI) and due to across the board increases (Merit-Other). The number of times faculty have been away on paid leave is also included in the models[10] (See Appendix A for variable definition).

Additional control variables applied to the college models include Rank (Assistant, Associate, and Full Professors). When appropriate, the models also included a gender by rank interaction term.

ANALYSIS METHODOLOGIES

[7] According to the most current bargaining agreement (https://www.collectivebargaining.ucf.edu/CBA/final2019-2021fullbook.pdf) in 8.7(a)(2) ". Any 12-month employee salaries will be multiplied by 81.82 percent to obtain an academic year salary." (page 23)

[8] Calculated as the total number of years that the faculty member has been actively employed as a faculty at UCF, subtracting any "gap" years where the faculty was not actively employed.

[9] Pay increases with Action Reasons including (a) Merit; (b) Merit, Market, Equity Pay Increase; (c) Merit Salary Increase; (d) Out of Cycle Merit Increase; (e) Professorial Excellence Pay; (f) Special Pay Increase; and (g) Counteroffers. Depending on if it is a cross-board pay increase, this increase is further divided into Merit-ADI and Merit-Other. While a cross-board increase is considered as Merit-Other, all remaining pay increase applied to the individual faculty is considered Merit-ADI.

[10] This variable does not include regular annual or sick leave awarded to faculty members but rather serves as a proxy for time off for sabbaticals, parental leave, etc. There were no significant differences identified between leave reasons (i.e. sabbatical vs. FMLA) or leave types (i.e. paid leave vs. unpaid leave). Thus, all leave reasons are counted as one total sum.

Descriptive, bivariate, and multivariate quantitative methods were used to analyze factors correlated with tenure/tenure-earning faculty salaries for the 2020-21 academic year. The multivariate model consists of a linear regression of the logarithms of faculty members' annual salaries. Appendix C includes a detailed table of findings of significance for each variable included in the three rank models, and Appendix D includes a detailed description of the analysis and modeling approaches.

It is important to note that prior to analyzing the Fall 2020 data using the multivariate regression models, non-parametric analyses (decision trees) were conducted using Fall 2019 data for model comparisons. Data were prepared and split into training and testing sets to generate and validate non-parametric decision tree models. Results from the non-parametric analysis are not provided here given its high testing errors, but were informative for this analysis as it pertains to shaping variables selection for the multivariate regression models. For example, patterns from the decision trees models provide insight to excluding administrative faculty and the validity of conducting deeper college level of regression analyses.

Faculty in primarily administrative roles were not used in this study due to the large variance and statistical errors that would be introduced due to the administrative salaries being such extreme outliers. Nevertheless, the process of exploring the impact of administrative roles as well as the composition of College on the salary are documented as supplemental materials in this report (see Appendix L). Due to the statistical weakness of these models, they were not considered for the basis of the results presented.

Additionally, predictive intervals were used to approximate the expected salary of each faculty member based on all variables in the model, with the exception of race and gender. Individual faculty members whose actual salary fell below the bounds of the predicted interval ($p < 0.10$) were flagged for review by the committee members.

NON-TENURE EARNING EQUITY ANALYSIS

OUTCOME VARIABLE

The main outcome variable includes the reported 9-month salary for 2020 for each non-tenure faculty member. Salaries were converted to a 9-month equivalent amount for faculty members on 12-month contracts[11]. The natural logarithm of the annual salary, which is used to more closely represent a normal curve in the distribution, is applied when analyzing salary difference for non-tenure earning faculty (See Appendix D).

PREDICTOR VARIABLES

Demographics include gender (male and female) and race/ethnicity. The race/ethnicity variable was coded into four categories including White, Asian, Underrepresented Minority, and International. Underrepresented minorities include faculty identified as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial. International faculty include all faculty currently identified as "Non-Resident Alien" according to IPEDS definitions ("Definitions for New Race and Ethnicity

[11] According to the most current bargaining agreement (https://www.collectivebargaining.ucf.edu/CBA/final2019-2021fullbook.pdf) in 8.7(a)(2) ". Any 12-month employee salaries will be multiplied by 81.82 percent to obtain an academic year salary." (Page 23).

Categories", n.d.). The multivariate models applied to estimate Non-Tenure-Earning faculty salary also include an interaction term between gender and rank.

Control Variables consist of two sets of inputs. First set is concerned with structural factors which include college (based on home department assignment), job code, doctoral degree, and visiting status. Please note that faculty in College of Graduate Studies, Optics and Photonics, and in other unspecified colleges were included in the model as the Other College due to insufficient faculty count within ranks for each aforementioned college. When it is appropriate, the models also include a gender by job code interaction term. The last set is about rewards and barriers that include the total number of TIP, RIA, and SoTL awards earned; and the total number of merit pay increases earned (regardless of dollar amount)[12] due to ADI (Merit-ADI) and across the board increases (Merit-Other)[13] (See Appendix A for Variable Dictionary and Appendix E for Job Code Groups).

ANALYSIS METHODOLOGIES

Descriptive, bivariate, and multivariate quantitative methods were used to analyze factors correlated with non-tenure earning faculty salaries for the 2020-21 academic year. The multivariate model consists of a linear regression of the logarithms of faculty members' annual salaries. Appendix F includes a detailed table of findings of significance for each variable.

Prior to conducting the multivariate regression analyses, correlation and stepwise regression analyses (i.e., forward and backward) were conducted for variable selection. Variables obtained from the stepwise regression are all included in the multivariate regression analyses. While race/ethnicity was not an informative variable for analyzing the non-tenure earning faculty's salary, it is included to meet the purpose of this study. Finally, a gender and job code interaction term is included in the model in order to tease out possible gender inequity across rank.

Because non-tenure earning faculty included a diverse set of job codes, in order to examine differences in salary, it is necessary to include the job code as a control variable. It is important to note that the job code variable is used slightly different across three non-tenure earning faculty regression models. In Model 1, all non-tenure earning faculty were grouped based on their job code into seven categories. The seven categories include Lecturers, Instructors, Scholars, Specialized Faculty, Professors, Instructional Designer, and Librarian. Although the same job code grouping method is used, for Model 2 samples include only Instructors or Lecturers (N= 469). In Model 3, job code is used to differentiate six ranks of Lecturers and Instructors. The six Instructor-Lecturer Ranks include Lecture, Associate Lecturer, Senior Lecturer, Instructor, Associate Instructor, and Senior Instructor. The table below provides a summary of how the job code is used in different non-tenure earning models. Table 1 and 3 in Appendix E provide detailed grouping information described above. Nevertheless, Instructor is the reference group for all three models.

[12] Pay increases with Action Reasons including (a) Merit; (b) Merit, Market, Equity Pay Increase; (c) Merit Salary Increase; (d) Out of Cycle Merit Increase; (e) Professorial Excellence Pay; (f) Special Pay Increase; and (g) Counteroffers.

[13] This variable does not include regular annual or sick leave awarded to faculty members but rather serves as a proxy for time off for sabbaticals, parental leave, etc. There were no significant differences identified between leave reasons (i.e. sabbatical vs. FMLA) or leave types (i.e. paid leave vs. unpaid leave). Thus, all leave reasons are counted as one total sum.

Model	Sample	Job Code	Reference Group
1	All non-tenure earning faculty (N= 672)	Job Code: Lecturers, Instructors, Scholars, Specialized Faculty, Professors, Instructional Designer, and Librarian	Instructors
2	Instructors/ Lecturers (N= 469)	Job Code: Lecturers, Instructors	Instructors
3	Instructors/ Lecturers (N= 469)	Rank: Lecture, Associate Lecturer, Senior Lecturer, Instructor, Associate Instructor, and Senior Instructor	Instructors

Table 1

Additionally, predictive intervals were used to approximate the expected salary of each faculty member based on all variables in the model, with the exception of race and gender. Individual faculty members whose actual salary fell below the bounds of the predicted interval ($p < 0.10$) were flagged for review. The names and characteristics of these individuals will be made available to appropriate college administrators for review.

RESULTS – TENURE / TENURE EARNING EQUITY

DESCRIPTIVE ANALYSIS

Overall, the data represent about 64% male faculty and about 63% White Tenure/Tenure-Earning faculty. More than three-quarters of professors (76%) are male and 67% of professors are White. Approximately 61% of the associate professors are male and about two-thirds (66%) of associate professors are white. While in the professor and associate ranks, white male is the predominate group, there is slightly more gender and racial diversity among assistant professors. Assistant professors consists of 58% men and 54% white (see Appendix B for descriptive characteristics by rank).

Tenured/ tenure-earning professors included in the sample have been employed as faculty at UCF for an average of 11.2 years as of November, 2020. Due to pandemic, only about 2% of the tenured/ tenure-earning faculty were hired in 2020, including one associate and seventeen assistant professors. Faculty members in this sample are predominately employed on 9-month contracts (99.5%). For the 0.5% of faculty, their 12-month base salary have been converted to 9-month equivalency (see footnote 7 for details).

The median salary for all tenured/ tenure-earning faculty included in the sample (n= 942) is $98,111. While Asian faculty have the highest median salary ($109, 750), the median salary for white and underrepresented minority faculty are $97,670 and $92,000 respectively. As a group, international faculty have the lowest salary ($90,813). Disregarding ethnicity, male faculty in this sample have a higher median salary ($102,680) than female ($88,414). The pattern stays the same within each ethnicity in that men have higher median salaries compared to their female peers (see Appendix B for median salary characteristics by gender and ethnicity within each rank).

Professors in general have a higher median salary than assistant or associate professors, and associate professors in general have a higher median salary than assistant professors. Within professors, the median salary among men is about $18,900 higher than the median salary among

women. This pattern again is observed in the other two ranks with male associate professors' median salary being about $5,000 more and male assistant professors' median salary being about $8,000 more than the female colleagues of the same rank.

Across all three ranks, the highest median salaries tend to be male-dominated colleges. In contrast, within each rank, lower median salaries are more likely to be female-dominated colleges, such as associate professors in CAH and assistant professors in CHPS. While the proportion of genders within each college is more balanced at the assistant level, COP appears to have only full-time male faculty regardless of rank (see Table 2; note that median salary represents the median for both male and female faculty within a college).

Table 2 Overall Median Salary and Proportion of College Tenure/ Tenure-Earning Faculty that are Male, by College and RANK (2020)

	Professors		**Associate Professors**		**Assistant Professors**	
	Median ($)	% Male	Median ($)	% Male	Median ($)	% Male
CAH	$105,037.51	64%	$79,982.75	46%	$59,899.50	53%
CBA	$237,368.42	81%	$175,000.00	69%	$162,658.13	87%
CCIE	$124,014.39	53%	$92,150.77	46%	$72,292.50	43%
CECS	$148,628.17	94%	$120,202.18	83%	$98,159.02	82%
CHPS	$143,644.17	29%	$87,986.89	54%	$70,000.00	26%
COM	$154,049.63	73%	$106,345.93	75%	$86,718.00	50%
CON	$124,935.17	17%	$99,718.27	17%	$84,375.68	33%
COP	$183,620.84	100%	$101,282.65	100%	$84,022.56	100%
COS	$118,791.39	85%	$91,962.20	65%	$79,199.02	59%
COG [1]	$123,171.69	86%	$108,044.09	80%	$92,926.85	44%
RCHM	$151,494.49	100%	$99,474.12	59%	$74,138.54	50%
Total	**$135,284.45**	**76%**	**$95,095.55**	**61%**	**$79,991.01**	**58%**

[1] COG stands for College of Graduate Studies.

MULTIVARIATE MODEL RESULTS – UNIVERSITY

Each of the models presented below highlight the independent effects of multiple factors that may contribute to salary differences among tenured/tenure-earning faculty at UCF. The effect of each variable assumes that all other factors are held constant. For example, a comparison between male and female would indicate that those two professors of the same rank are in the same department/college, ethnicity, and so on, where their only distinguishing difference would be their gender. Only variables that are relevant to the aim of the current study (gender and race/ethnicity) are discussed below. See Appendix C for an illustration of the complete regression model and variable significance. Given that White-Male faculty in College of Arts of Humanities are the reference groups for each rank, the descriptive statistics of their salaries are provided in table 3 below.

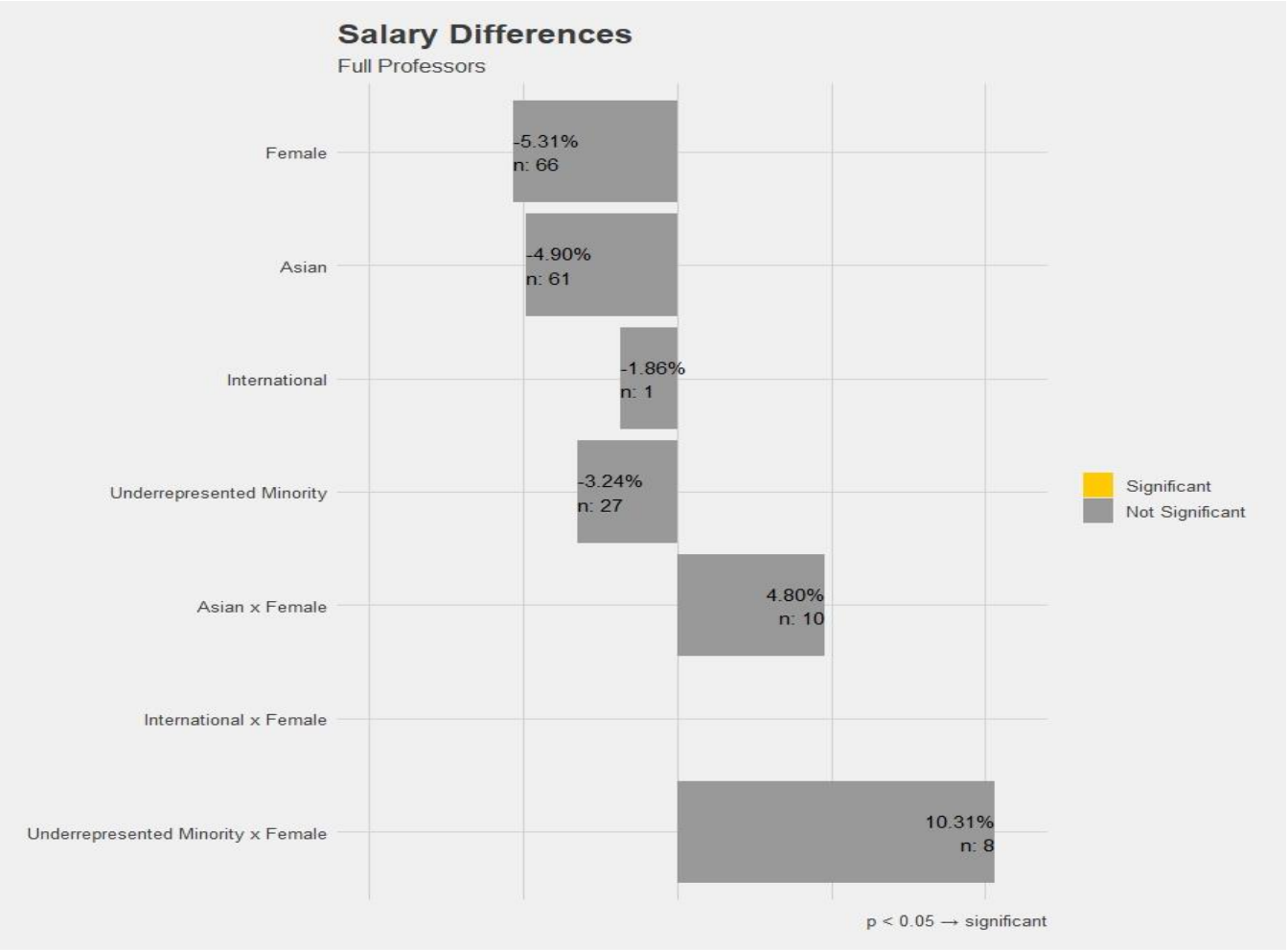
Table 3 - Descriptive Statistics of Faculty in College of Arts and Humanities (N= 117)

	COUNT	MEAN	S.D.	MIN	MEDIAN	MAX
FEMALE						
PROFESSOR	8	$ 106,699	$ 12,028	$ 90,096	$ 104,220	$ 126,717
ASSOCIATE PROFESSOR	25	$ 84,604	$ 11,612	$ 65,000	$ 84,868	$ 116,080
ASSISTANT PROFESSOR	18	$ 61,734	$ 7,367	$ 53,000	$ 59,900	$ 77,456
GRAND TOTAL	**51**	**$ 79,998**	**$ 18,660**	**$ 53,000**	**$ 78,633**	**$ 126,717**
MALE						
PROFESSOR	20	$ 120,659	$ 31,721	$ 81,364	$ 108,682	$ 204,723
ASSOCIATE PROFESSOR	25	$ 79,889	$ 10,806	$ 62,337	$ 79,899	$ 111,533
ASSISTANT PROFESSOR	21	$ 60,220	$ 9,137	$ 46,474	$ 58,000	$ 79,041
GRAND TOTAL	**66**	**$ 85,985**	**$ 31,010**	**$ 46,474**	**$ 79,470**	**$ 204,723**

MODEL 1: PROFESSORS

Based on the Fall 2020 data, neither gender, ethnicity, nor their interaction terms are significant in estimating Professors' salary (Figure 1 and Appendix C). However, variables related to experiences, such as total faculty years at UCF and number of ranks held at UCF, are significant in estimating their salary. The effects are rather negative in the sense that, given everything else is the same, working at UCF longer is associated with having less salary. Performance as translated into awards and merit recognition is positively associated with increased salary. For example, a one-unit increase in the number of ADI's is associated with a 4.9% increase in salary. Similarly, a one unit increase in the number of awards is associated with 3.5% increase in salary. Although the college variable is significant in differentiating salary, comparison across colleges is not as informative because this analysis provides a higher-level perspective of salary differences. An example of how to interpret a regression table for this study is provided in the end of Appendix D.

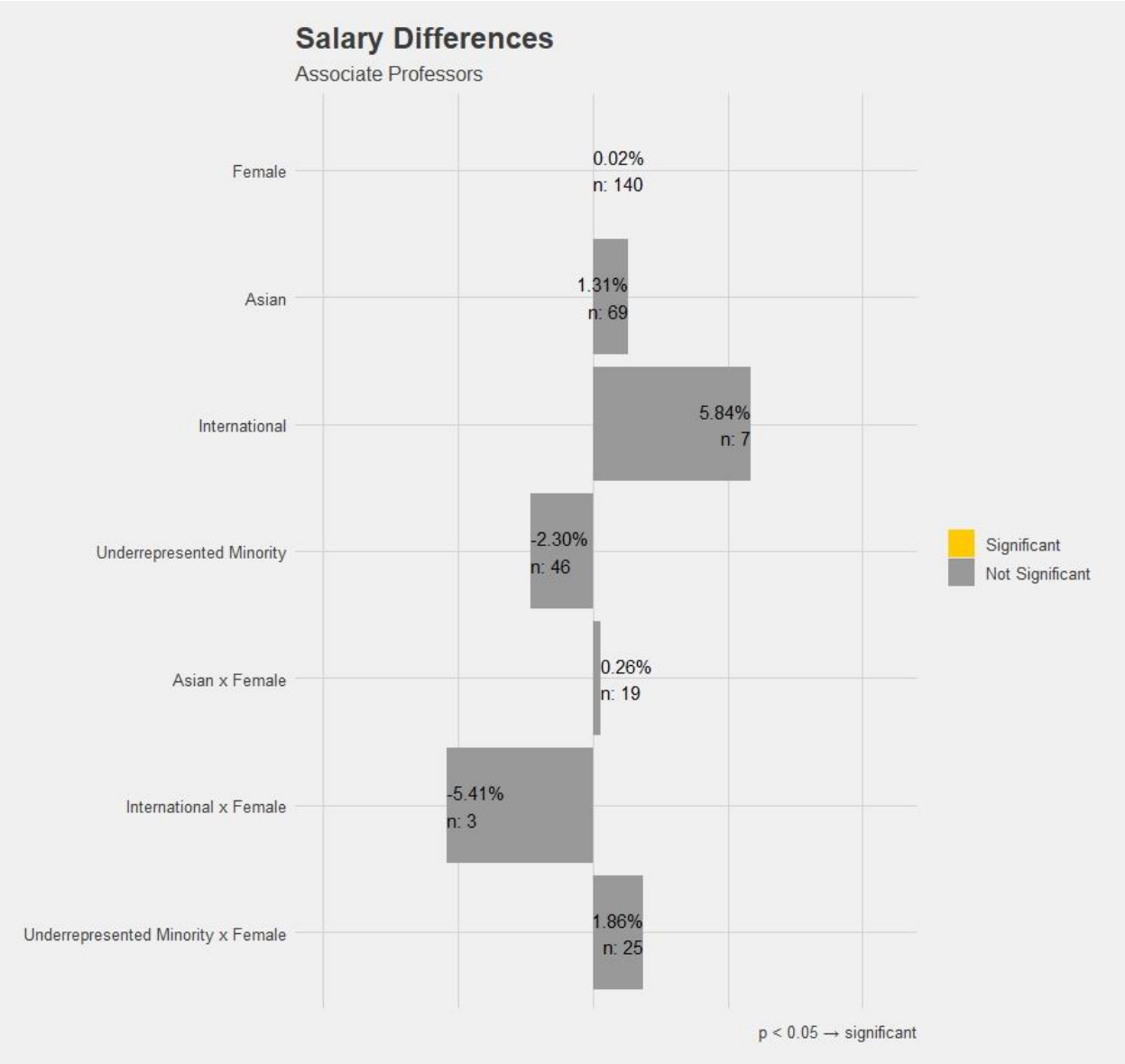
Figure 1 – Full Professor Model



MODEL 2: ASSOCIATE PROFESSORS

For Associate Professors, none of the gender or race/ethnicity related variables are significant in estimating Associate Professor's salary (Figure 2). Working longer at UCF is negatively related to higher salary. Furthermore, recognition through receiving awards or Merit-ADI is positively related to having a higher salary. These results are similar to the findings from the previous Professor analysis. However, for Associate Professors, a one unit increase in awards is associated with 5.6% increase in salary (in contrast to 3.5% increase for Professor). Although the college variable is significant in differentiating faculty salary, comparison across colleges might not be informative as it only provides a higher-level perspective of salary differences.

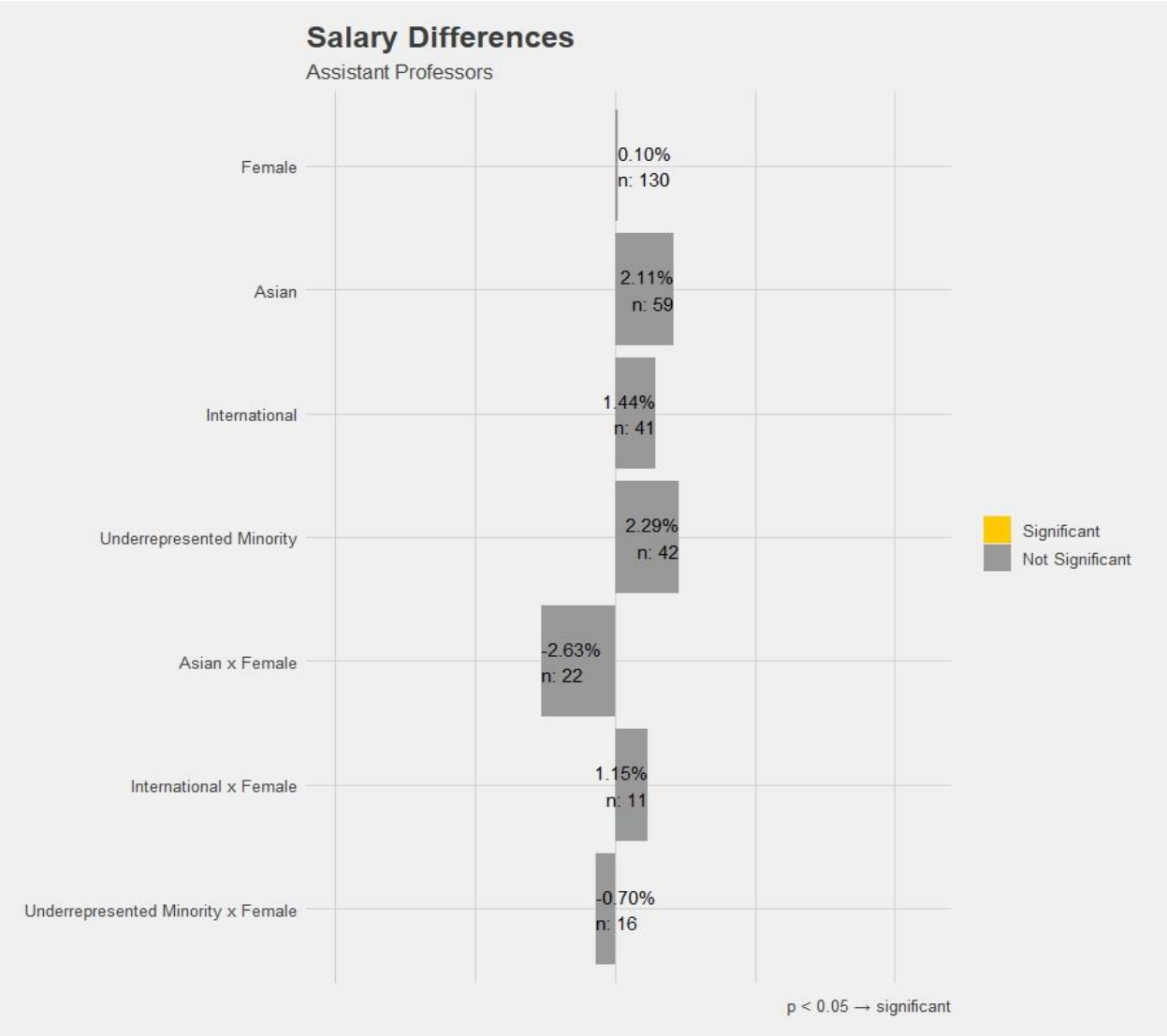
Figure 2 – Associate Professor Model



MODEL 3: ASSISTANT PROFESSORS

The best variable that could be used to differentiate Assistant Professor's salary is awards. Similar to the findings from the other two ranks, neither gender nor race/ethnicity are significant in differentiating Assistant Professor's Salary (Figure 3). A one unit increase in awards could potentially bring a 5.2% increase in salary compared to other Assistant Professors in the same College with the same demographic features and similar UCF experiences.

Figure 3 – Assistant Professor Model



MULTIVARIATE MODEL RESULTS – COLLEGE

The proportion of explained variance provides an indication of how well the model is in terms of estimating faculty salary among all colleges. The models for College of Business Administration (CBA) as well as College of Graduate Studies (COG) have the poorest performance of all the college models because only a small portion of variance is explained. Specifically, the CBA and COG models explain less than 50% of the variance, whereas other college models explain between 67% and 98% of the variance, based on the adjusted R-square (Appendix G). Because the sample size for most of the college models is small, the validity of the regression results becomes questionable. Thus, interpretation of the college models should take this limitation into account. Additionally, due to an insufficient number of a female sample, the estimated mean salary for each gender by rank is not available for the College of Optics and Photonics.

Based on the results, gender salary inequality is more noticeable in CON, CHPS, and CAH with female professors on average earning less than their male colleagues (appendix G). However, because there are also significant gender and rank interaction among these three colleges, interpretation of gender inequality should take into account variances associated with rank. That is, for those three colleges, inequity in salary should be examined by reviewing gender and rank simultaneously. For example, based on the CON model, female professors are estimated earning 32%[14] less than male professors if all the other conditions are the same. Based on the predicted mean salary (see the CON model in Appendix G), female associate professors earn slightly more than male associate professors. Because there is only one male professor and one associate professor in CON, cautions should be taken when interpreting the results of the CON model.

For the CHPS and CAH models, similar patterns are observed with female professors earning less than male professors (26% less for CHPS and 11% less for CAH) if everything else is the same. However, female assistant professors from both CHPS and CAH do slightly better (about 2% that is (exponent (0.32- 0.30)-1)*100) than their male colleagues of the same rank given that everything else is the same. Female associate professors from CAH also earn more (about 3% that is (exponent (0.15- 0.12)-1)*100) than their male colleagues of the same rank if everything else is the same.

Although not shown in Figure 4, for the rank of professor, male Asian and male Underrepresented Minority from COM earn more on average than their male White colleagues in COM (12% and 15%, respectively) if everything else is the same. As a group, underrepresented minority males from CON also earn about 6% more than the White male professors from the same college with similar UCF experiences.

In terms of control variables, Rank, Merits-ADI, Awards, and Total Rank counts are the most predominant variables in estimating faculty salary. While performance related variables such Merits-ADI and Awards generally have a positive relationship with salary, it was unusual to find that having more awards was negatively associated with salary for professors in Rosen College (i.e., one unit increase in award is associated with 7% less in salary). Further examinations (e.g., including award by gender or rank interaction terms) are required to explain in which circumstance or to whom is having an award not influential to salary increases for professors in Rosen College.

[14] To compute the percentage, apply the regression coefficients in the equation (exponent(-0.39) -1)*100.

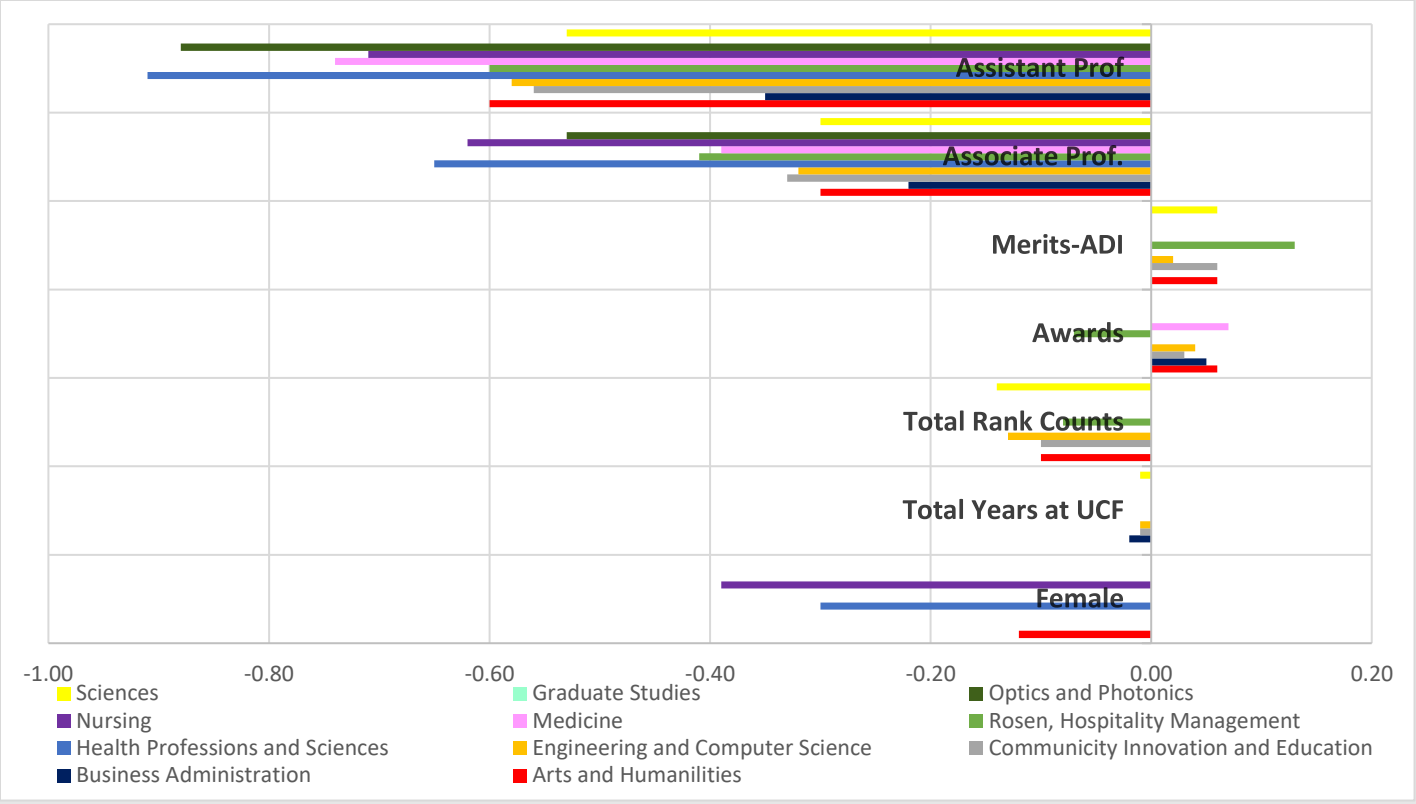


Figure 4. Regression Coefficients of Selected Variables-College Model

INDIVIDUAL OUTLIERS

A total of 22 faculty members were identified as having a salary below the lowest end of their predicted salary interval (using 90% C.I. as the threshold). Among them, 12 are considered to have a need for salary review ($p < 0.05$) and the remaining 10 may have a need for salary review ($p < 0.10$). Outliers include men (86%) and women (14%), as well as white (55%) and faculty of color (45%)[15]. Outlier faculty are more likely to be associate (41%) or assistant (36%) professors, compared to professors (23%). Three percent (3%) of assistant and associate professors are represented among the outliers, compared to two percent (2%) of professors. The model is limited in its interpretation due to it not controlling for the discipline or department within a college, and may both fail to include and exclude faculty in the analysis.

[15] The 45% consists of 23% Asian, 18% underrepresented minority, and 5% international. Although men and white faculty represent larger proportions of the outlier faculty, neither group is disproportionately represented compared to their overall representation among UCF Tenured/Tenure-Earning faculty in the sample.

RESULTS– NON-TENURE EARNING

DESCRIPTIVE ANALYSIS

The non-tenure earning faculty data consists of Lecturers (41%), Instructors (29%), Scholars (7%), Specialized Faculty (6%), Professors (8%), Instructional Designer (6%), and Librarian (5%). Overall, slightly more than half (55%) of the non-tenure earning faculty included in this sample are women. Compared to the tenure/tenure-earning faculty, the proportion of male and female faculty is more balanced within each rank of the non-tenure earning faculty (see Figure 5 for the percentage of genders by job code). Three quarters of all non-tenure earning faculty are White and about 15% of the non-tenure earning faculty are underrepresented minority.

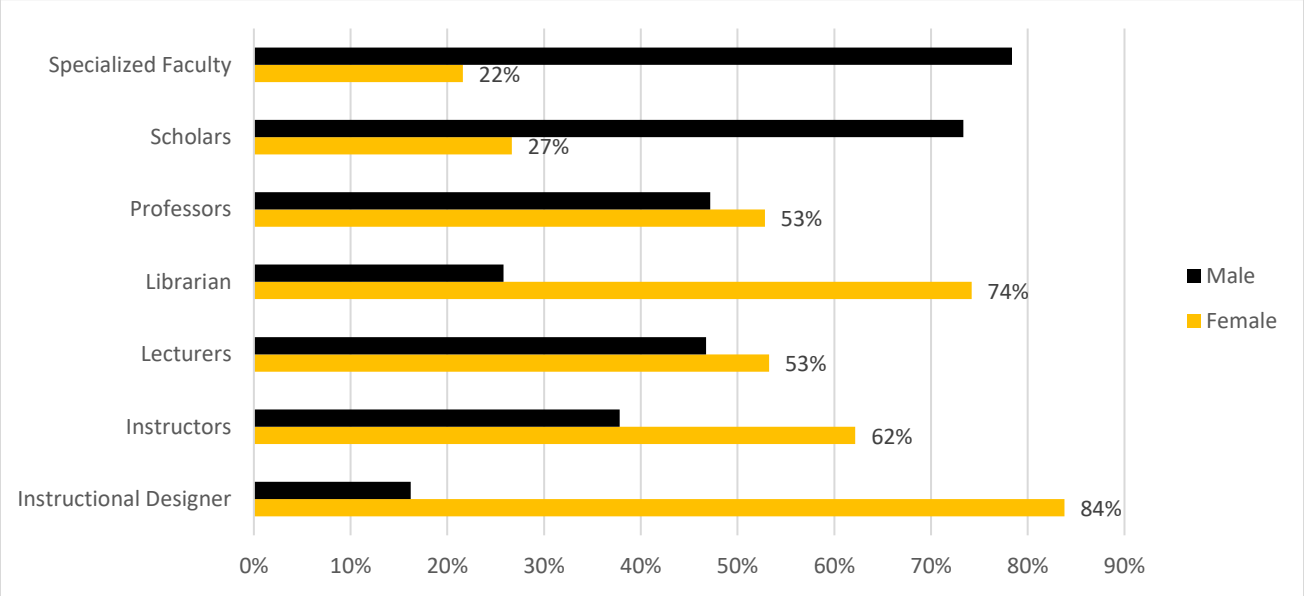


Figure 5. Proportion of Genders by Job Code

As of November 1, 2020, non-tenure track faculty included in this sample have been employed as faculty at UCF for an average of 9.2 years. Approximately 4% of the faculty included in this sample were hired in 2020, including 7 Lecturers, 2 Instructors, 8 Scholars, 3 Specialized Faculty, 5 Professors, 2 Instructional Designer, but zero Librarians. Approximately 40% of the non-tenure earning faculty have been employed with UCF for ten or more years, including 110 Lecturers, 81 Instructors, 19 Scholars, 14 Specialized Faculty, 17 Professors ,9 Instructional Designers, and 16 Librarians. Among the 672 non-tenure earning faculty, 32% of them were employed on 12-month contracts. All salaries reported here include 9-month equivalency for 12-month based employees.

The median salary for all non-tenure earning faculty in the sample (N= 672) is $63,761. Similar to the pattern found in tenured/tenure-earning faculty, Asian faculty have the highest median salary ($64,516), followed by White faculty ($64,356), and underrepresented minority ($61,077). International non-tenure earning faculty have the lowest median salary ($61,037). Regardless of ethnicity, median salary for male non-tenure earning faculty is higher than female non-tenure earning faculty ($66,100 and $61,091

respectively). This pattern is also noticeable within each ethnicity, except internationals. The median salary for the non-tenure earning international female is about $1,000 dollars more than their male peers (Appendix E).

Among all non-tenure earning faculty, CBA offers the highest median salary ($94,497) and CAH as a group has the lowest median salary ($50,699). Across all colleges, non-tenure earning faculty from the "Other" college category has the highest median salary ($112,114). Table 4A and 4B provide the overall median salary and percentage of female by college and job code.

Table 4A Overall Median Salary by College and Job Code

	Instructional Designer	Instructors	Lecturers	Librarian	Professors	Scholars	Specialized Faculty	College Median
CAH		$46,160	$52,458		$50,000	$80,906	$48,563	$50,699
CBA		$84,495	$112,496					$94,497
CCIE		$61,819	$64,182			$81,820		$64,182
CECS		$87,149	$77,000		$75,401	$61,804	$61,365	$75,000
CHPS		$65,064	$59,739		$77,739			$65,064
COM		$51,423		$57,076	$66,100	$53,756	$72,410	$62,577
CON		$69,411	$76,924		$91,709			$72,865
COS	$55,268	$56,993	$61,071		$72,205	$82,878	$49,092	$60,461
OTHER	$49,092	$48,065	$60,000	$55,903	$112,114	$83,711	$70,975	$61,091
RCHM		$64,528	$66,813		$94,700			$67,091
Total	**$51,137**	**$61,147**	**$63,875**	**$56,330**	**$81,000**	**$76,929**	**$69,547**	**$63,761**

Table 4B Percentage of Female by College and Job Code

	Instructional Designer	Instructors	Lecturers	Librarian	Professors	Scholars	Specialized Faculty
CAH	0%	75%	59%	0%	0%	100%	0%
CBA	0%	43%	29%	0%	0%	0%	0%
CCIE	0%	67%	76%	0%	0%	67%	0%
CECS	0%	33%	16%	0%	20%	25%	0%
CHPS	0%	74%	67%	0%	71%	0%	0%
COM	0%	75%	0%	100%	69%	50%	0%
CON	0%	100%	70%	0%	75%	0%	0%
COS	50%	44%	48%	0%	67%	13%	50%
OTHER	86%	67%	71%	69%	31%	20%	23%
RCHM	0%	42%	25%	0%	0%	0%	0%
Total	**84%**	**62%**	**53%**	**74%**	53%	27%	55%

RESULTS OF THREE REGRESSION MODELS FOR NON-TENURE TRACK FACULTY

The three models presented in Appendix F highlight the independent effects of multiple factors that may contribute to salary differences among non-tenure track faculty at UCF. The effect of each variable assumes that all other factors are held constant. For example, a comparison between male and female would indicate that those faculty of the same rank are in the same department/college, ethnicity, and so on, where their only distinguishing difference would be their gender. Only variables that are relevant to the current study (gender and race/ethnicity) are discussed below. See Appendix F for an illustration of the complete regression results.

The three regression models performed below did not detect a statistically significant difference in salary due to gender or ethnicity among non-tenure track faculty. However, controlling for all other variables in the model, female scholars earn less than their male colleagues with the same job code ($b = -0.15$, $p < .05$ see model 1 in Appendix F for details). However, the sample size is a limitation of this analysis. As shown in Appendix E- Figure 1, the median salary between female and male scholars differ significantly comparing to the difference between genders within each job code. However, the results are inconclusive with regards to female scholar faculty salary and their male colleagues.

Similar to the tenured/tenure-earning model, factors such as number of awards, merits-ADI, merits-Other are all considered influential to salary differences. Other variables that are unique to the non-tenure earning faculty include visiting status which also appears to be influential to non-tenure track faculty salary. For example, according to Model 1, visiting non-tenure track faculty are estimated to earn about 14% less than the regular faculty. (Appendix F).

INDIVIDUAL OUTLIERS- ALL NON-TENURE FACULTY

A total of 28 non-tenure earning faculty members were identified as having a salary below the lowest end of their predicted salary interval (using 90% C.I. as the threshold). Among them, 15 are considered to have a critical need for salary review ($p < 0.05$) and the remaining 13 are considered to have a cautionary need for salary review ($p < 0.10$). There were no distinct patterns identified by race or gender. Outliers include men (35%) and women (65%), as well as white (43%) and faculty of color (57%)[16]. Outlier faculty are more likely to be Scholars (42%) or Instructional Designers (31%) followed by Professors (12%), Lecturers (7%), Specialized Faculty (5%), and Instructors (3%). Outlier faculty are represented in 15 departments within 5 colleges.

[16] The 57% is consisted of 16% Asian, 14% underrepresented minority, and 26% international. Although women and white faculty represent larger proportions of the outlier faculty, neither group is disproportionately represented compared to their overall representation among UCF non-Tenure faculty in the sample. However, Asian and international faculty as outliers are disproportionately represented (compared to 7% Asian and 3% international in all non-tenure faculty sample).

CONCLUSION AND RECOMMENDATIONS

1. The committee concurs with the findings that there are no statistically significant differences in salary due to gender, race or ethnicity at the University level for either the Tenured/Tenure Earning or Non-tenure Earning faculty except as note in one College-level model discussed below.
2. The tenured/tenure earning outlier model identified some faculty outliers but is limited in its interpretation due to it not controlling for the discipline or department within a college and may both fail to include and exclude faculty in the analysis.
3. The non-tenured earning outlier model identified some faculty outliers but did not reveal any distinct patterns identified by race or gender. Sample size is a limitation for this analysis as is the weaknesses of adjusted R-squared for the regression upon which the outcomes are based. Further, identified median salary differences between female and male scholars may be due to differing job codes rather than gender. As such, the results are inconclusive with regards to female scholar faculty salary and their male colleagues.
4. The committee did identify a finding worth the attention of the Provost and the Dean of the College of Arts and Humanities. The CAH regression model reveals statistically significance differences between respective male and female Assistant and Associate Professor categories inferring inequality against white males.
5. Given that most college models lacked the sample size to provide confidence in inferential outcomes, the committee recommends that future analyses explore additional approaches. This may include, for example, merging similar Colleges to create subsets for analyses that may yield sufficient cell sizes and more robust subset results. Non-parametric techniques applied to a population without administrators in the population may prove useful in identifying the Colleges that might be merged based on similar market demand as expressed in salary levels.
6. The committee agrees with Senate resolution to perform salary equity and salary compression analyses every 5 years to monitor equity and compression in tenured/tenure earning and non-tenure-earning faculty salaries over time, consistent with the UCF mission.
7. To avoid using different salary data in the compression and equity analyses, the committee recommends that the 2025 salary equity and salary compression analyses be conducted with a targeted presentation to the Senate in Oct 2026 rather than March 2026. The time delay would ensure that the compression and the equity reports utilize UCF and CUPA data that correspond to the same years, 2020 – 2025.
8. The committee recommends future analysis continue administrative review of individual faculty whose salary fall below the lowest bounds of predicted salary intervals, based on the control factors, and commit to alleviating any substantiated salary inequities among existing employees.

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APPENDIX A- VARIABLE DICTIONARY

Variable Name	Possible Values	Definition
COLLEGE	Categorical e.g. College of Sciences	Faculty member's college or broad VP Org Categorization.
Gender	Categorical M = Male F = Female	Faculty member's self-reported gender.
Race/Ethnicity	Categorical White, Asian, International, Underrepresented Minority	Faculty's self-reported race/ethnicity with the following hierarchy applied- If faculty is a Non-Resident Alien then they are identified as International. Black, Hispanic, and Multi-racial are identified as Underrepresented Minority.
Doctoral Degree	Categorical Doctoral Degree, Less than Doctoral Degree	Faculty's official highest degree with the following hierarchy applied- If their degree are in Master, Bachelor's or equivalent then they are identified as Less than Doctoral Degree.
Rank	Categorical Assistant, Associate, and Full Professors	Faculty classification associated with their job code (e.g., Job Code 9001= Professors, Job Codes 9004/9005= Instructor/Lecturer).
Visiting	Categorical Visiting, Regular	Faculty employment that identifies their reappointment eligibility.
SUM_AWARDS	*Numeric* Range 0 - XX	Total number of TIP, RIA, or SoTL awards that faculty member received.
SUM_MERIT_ADI	*Numeric* Range 0 - XX	Total number of merit pay increases that faculty member received due to ADI (Administrative Discretionary Increase).
SUM_MERIT_OTHER	*Numeric* Range 0 - XX	Total number of merit pay increases that faculty member received due to across the board increases as recorded by UCF Human Resources.
SUM_PAID_LEAVE	*Numeric* Range 0 - XX	Total number of instances of paid leave for faculty member.
Tot_Faculty_Years_UCF	*Numeric* Range 1 - XX	Total number of years that faculty member has been actively employed as a faculty at UCF. Represents record year minus faculty hire year minus gap year(s).
TOT_NUM_RANK	*Numeric* Range 1 - XX	Total number of distinct ranks employee has had during time at UCF (or since 2002). Represents number of changes in ranks.
SALARY_9MO	*Numeric* XXXXXXX.XXX	Employee's contract salary for corresponding year. Includes 9 month equivalence salary for 12 month employees.

APPENDIX B – DESCRIPTIVE CHARACTERISTICS BY RANK (NON-ADMIN)

DESCRIPTIVE CHARACTERISTICS: PROFESSORS (*N* = 276)

Among full professors:

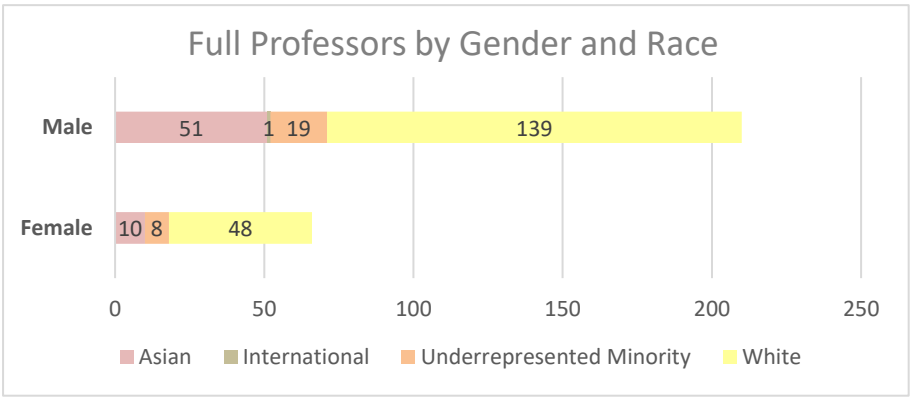
- 76% are male
- 68% are white
- International males have the highest median salary, followed by white males.
- Asian females have the lowest median salary, followed by White females
- Full professors in the College of Business Administration (CBA) have the highest median salary
- Full professors in the College of Arts and Humanities (CAH) have the lowest median salary

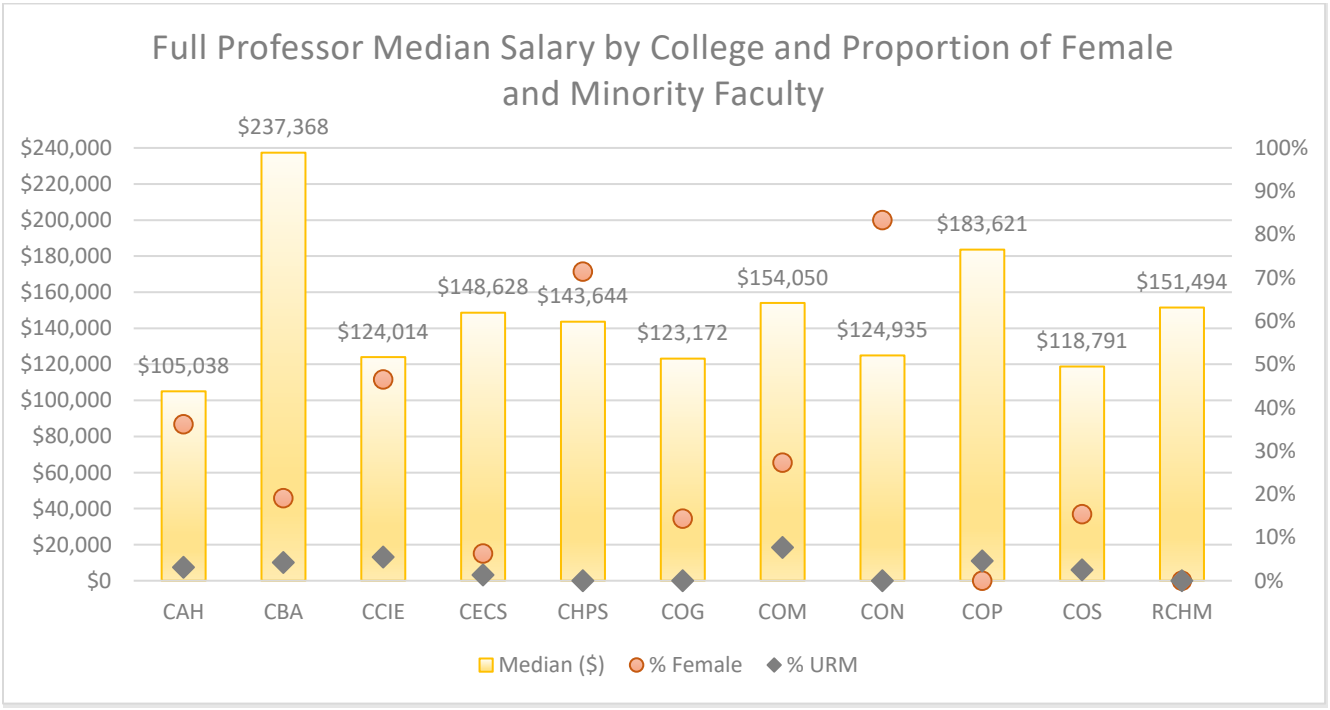
Table 1. Median Salary and Count of Professors by Gender and Ethnicity

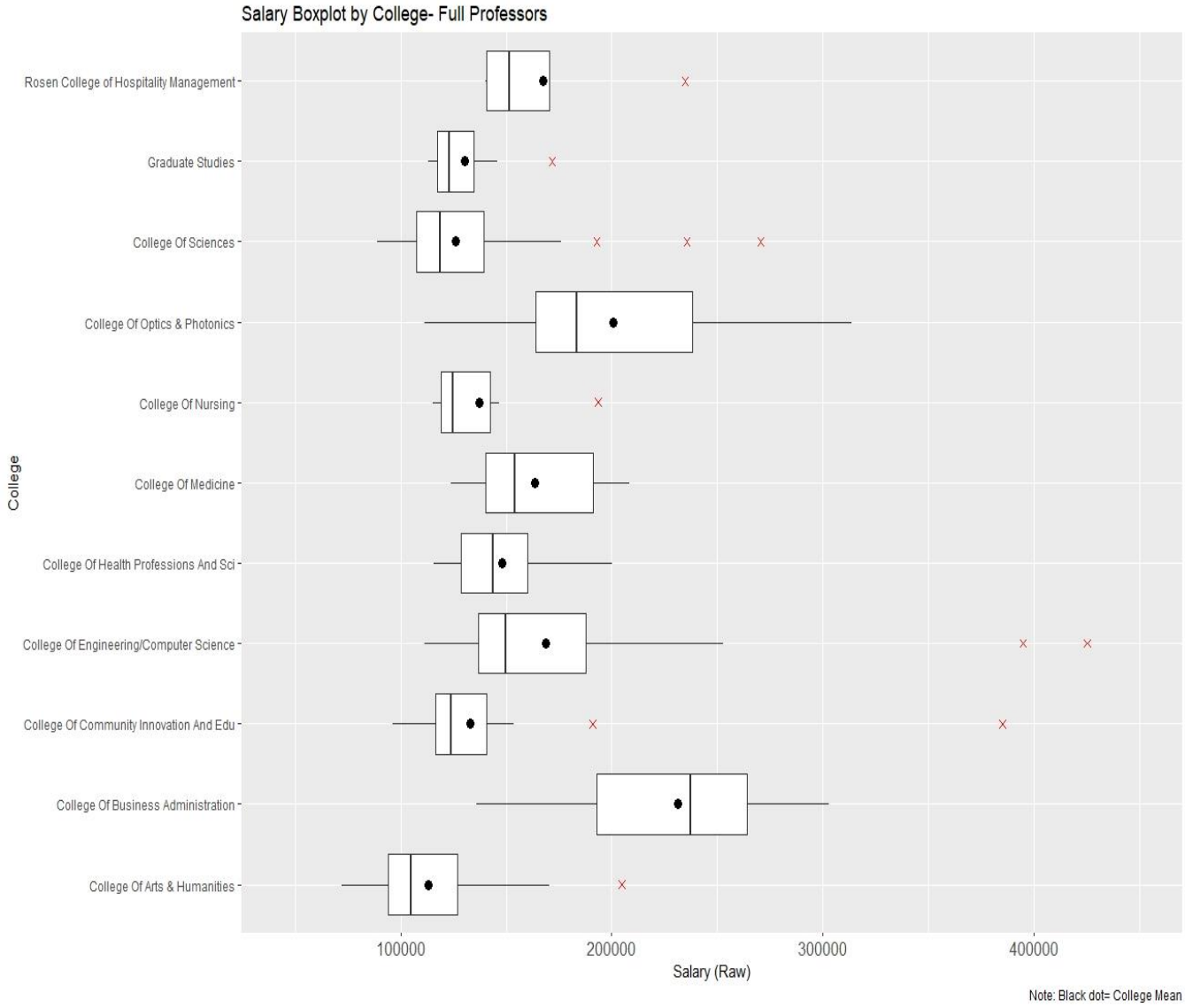
Ethnic Category	Female		Male		Total	
	n	Median	*n*	Median	*n*	Median
Asian	10	$119,755	51	$136,323	61	$131,117
International	0	$0	1	$142,558	1	$142,558
Underrepresented Minority [a]	8	$124,964	19	$135,898	27	$135,898
White	48	$120,836	139	$140,309	187	$135,535
Grand Total	**66**	**$120,503**	**210**	**$139,421**	**276**	**$135,284**

[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed it important to be transparent in reporting potential salary inequities for all groups.







Note. A red X represents an outlier which is located outside 1.5 times the interquartile range above the upper or below the lower quartile. A black dot represents the average salary of the group.

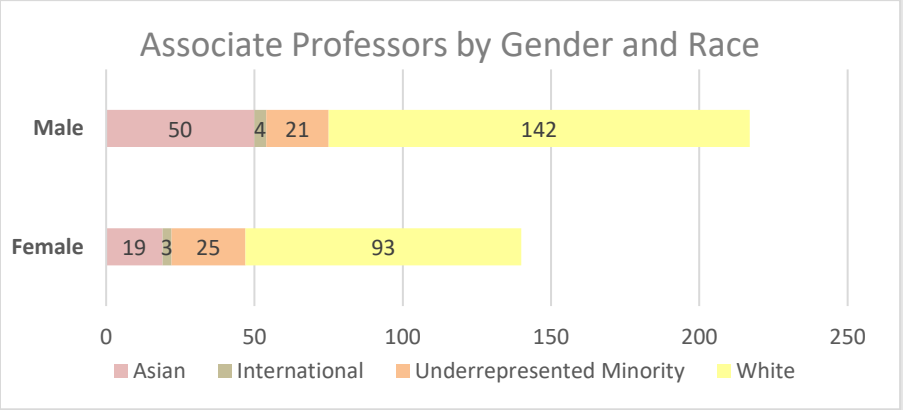
DESCRIPTIVE CHARACTERISTICS: ASSOCIATE PROFESSORS (N = 357)

Table 2. Median Salary and Count of Associate Professors by Gender and Ethnicity

	Female		Male		Total	
Ethnic Category	**n**	**Median**	**n**	**Median**	**n**	**Median**
Asian	19	$99,325	50	$110,372	69	$109,750
International	3	$93,988	4	$94,563	7	$94,253
Underrepresented Minority [a]	25	$88,814	21	$93,183	46	$90,119
White	93	$92,655	142	$96,347	235	$93,580
Grand Total	**140**	**$92,622**	**217**	**$97,609**	**357**	**$95,096**

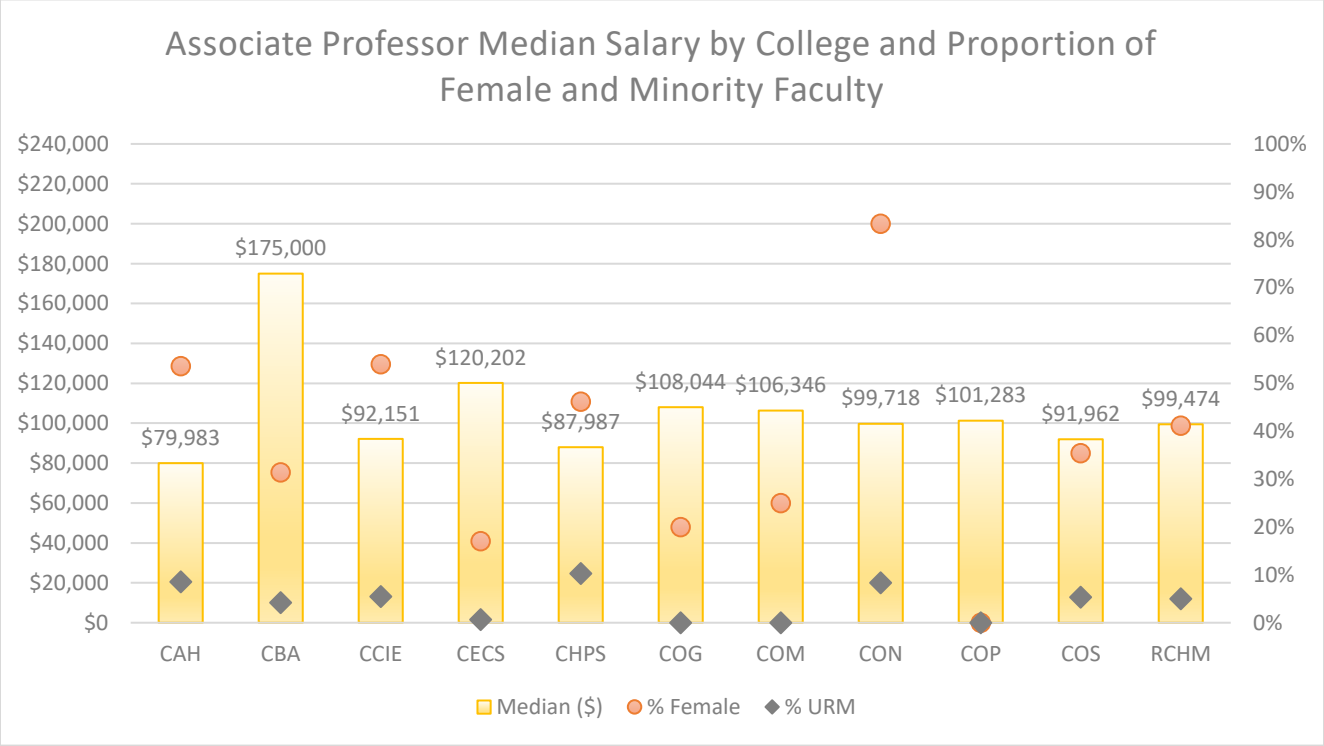
[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

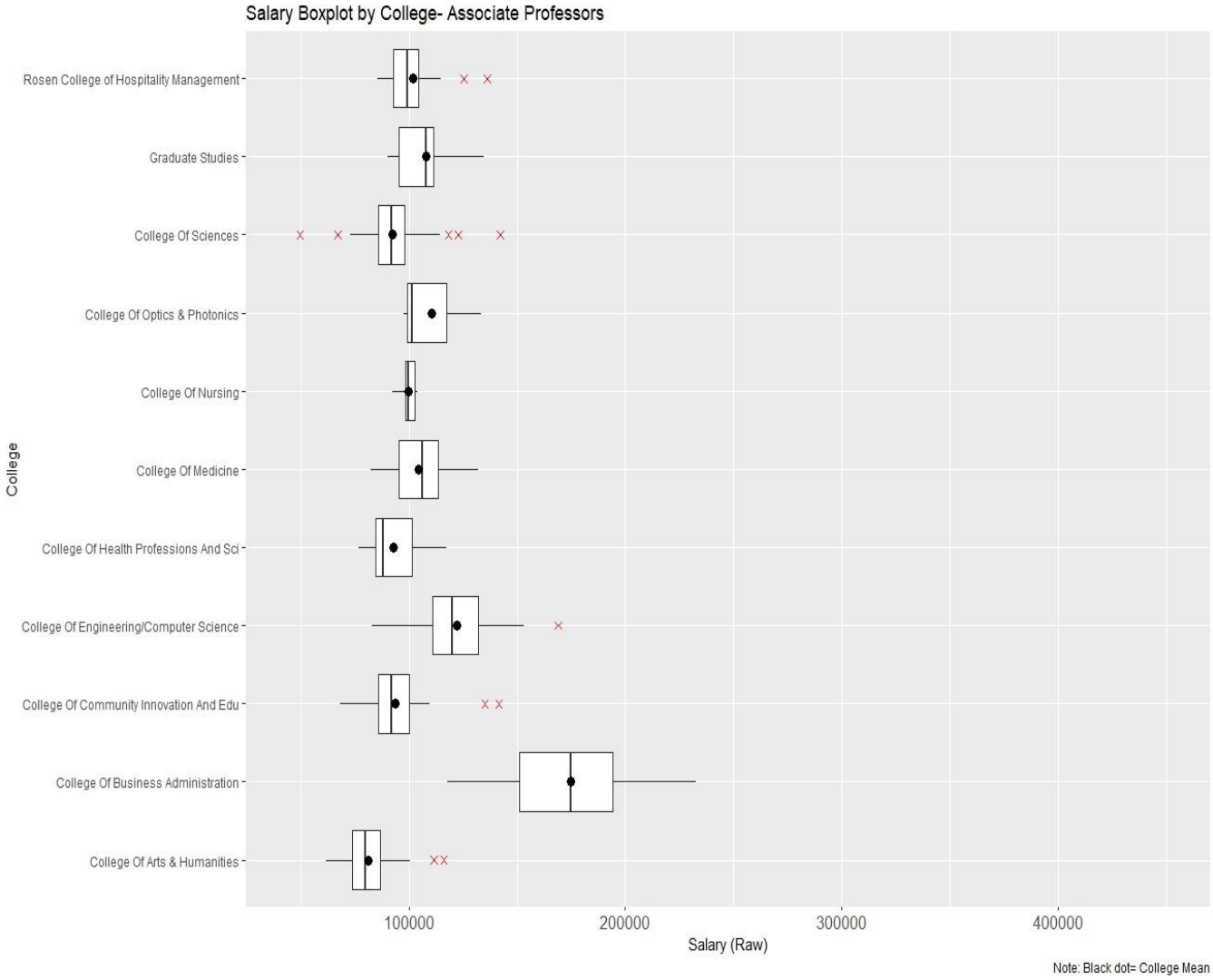
NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed it important to be transparent in reporting potential salary inequities for all groups.



Among associate professors:

- 61% are male
- 66% are white
- Asian males have the highest median salary, followed by white males.
- Underrepresented female Minority has the lowest median salary, followed by White females.
- Associate professors in the College of Business Administration (CBA) have the highest median salary
- Associate professors in the College of Arts and Humanities (CAH) have the lowest median salary





Note. A red X represents an outlier which is located outside 1.5 times the interquartile range above the upper or below the lower quartile. *A black dot represents the average salary of the group.*

DESCRIPTIVE CHARACTERISTICS: ASSISTANT PROFESSORS (*N* = 309)

Among assistant professors:

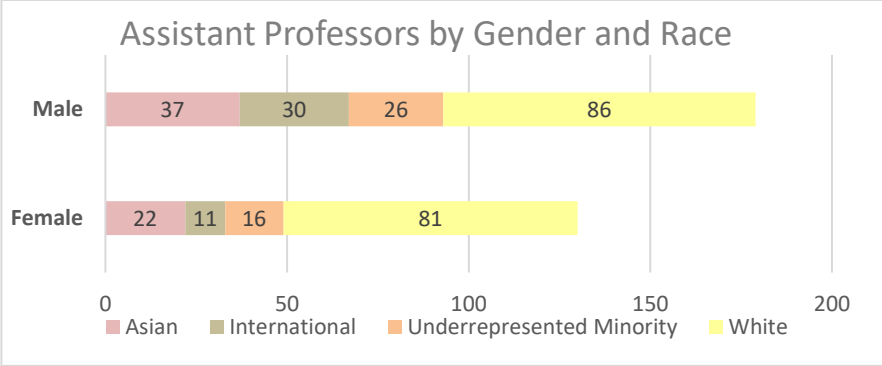
- 58% are male
- 54% are white
- International males have the highest median salary, followed by Asian males.
- Underrepresented female minority has the lowest median salary, followed by white females.
- Assistant professors in the College of Business Administration (CBA) have the highest median salary
- Assistant professors in the College of Arts and Humanities (CAH) have the lowest median salary

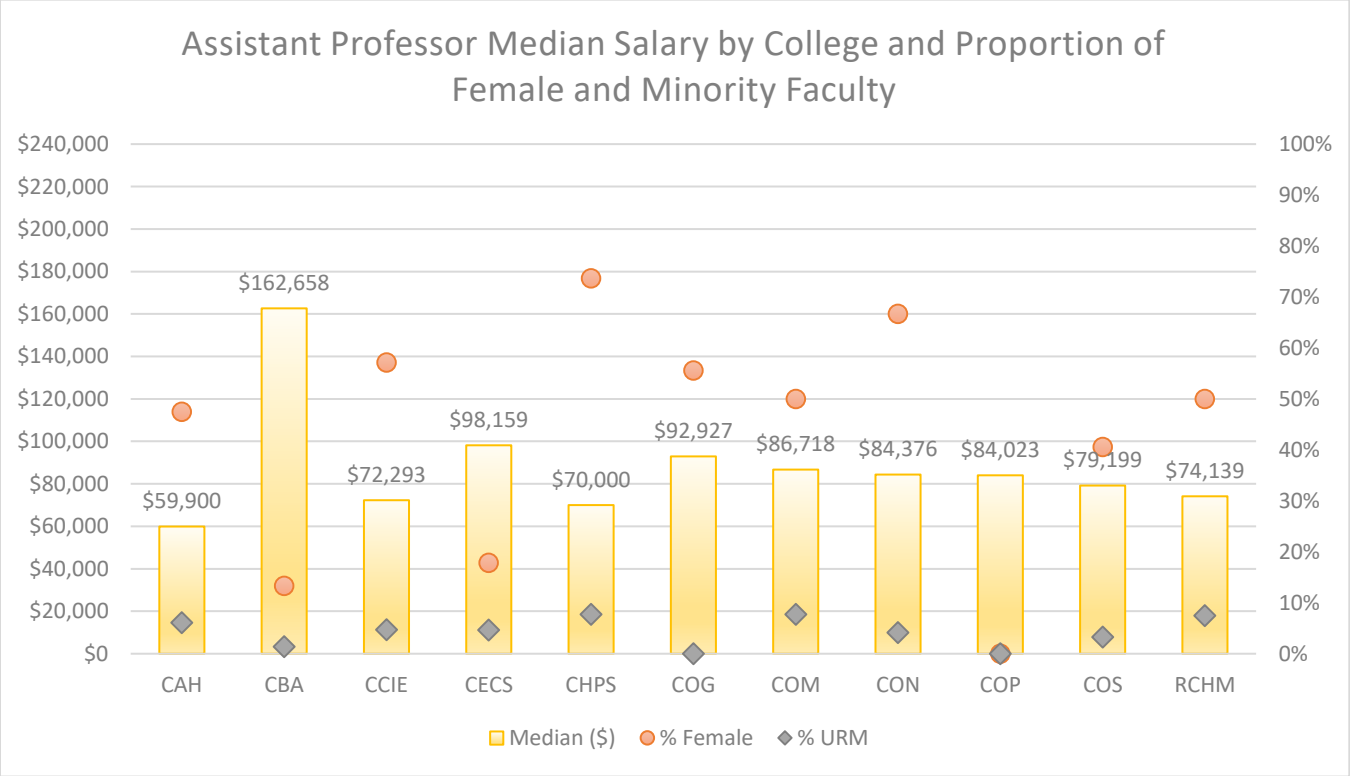
Table 3. Median Salary and Count of Associate Professors by Gender and Ethnicity

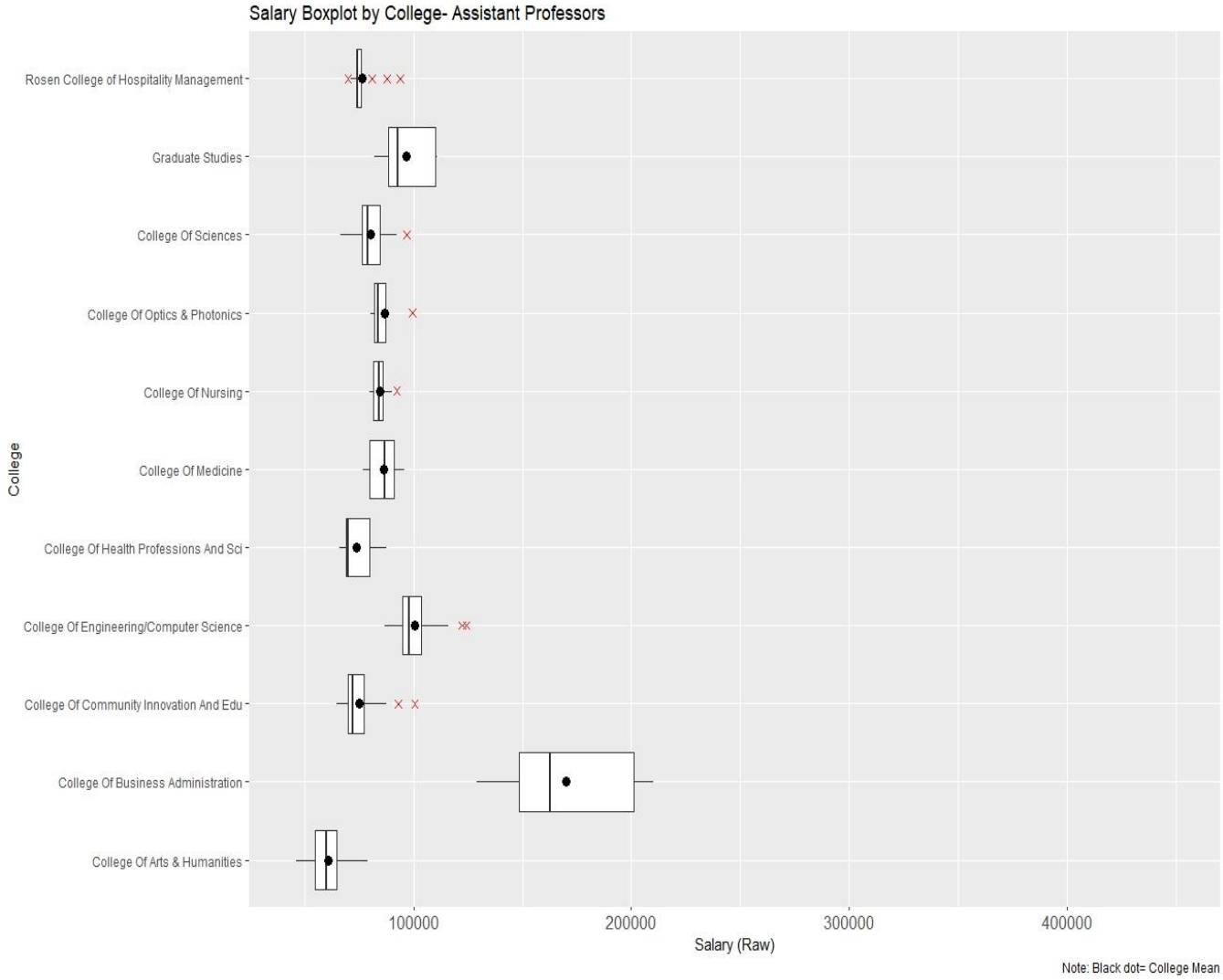
	Female		Male		Total	
Ethnic Category	**n**	**Median**	**n**	**Median**	**n**	**Median**
Asian	22	$80,400	37	$90,000	59	$88,361
International	11	$77,456	30	$92,391	41	$90,000
Underrepresented Minority [a]	16	$71,394	26	$82,620	42	$75,612
White	81	$76,559	86	$77,456	167	$77,456
Grand Total	**130**	**$75,996**	**179**	**$84,479**	**309**	**$79,991**

[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed it important to be transparent in reporting potential salary inequities for all groups.







Note. A red X represents an outlier which is located outside 1.5 times the interquartile range above the upper or below the lower quartile. *A black dot represents the average salary of the group.*

APPENDIX C – UNIVERSITY RANK MODELS OUTPUT TABLE

Definitions

- Predictor: a variable included in the regression model to estimate the outcome
- Estimate: a beta coefficient represents the effect size on outcome given all other variables in the model
- S.E.: standard error of the mean; provides an indication of how reliable the sample mean is in terms of representing a population mean. The bigger the S.E., the less reliable its representation.
- 95% Conf. Int.: the range of values where the true mean of the population could be with 95% confidence.
- *p*: observed probability that the null hypothesis is true. In the case of our study, most null hypotheses are beta =0 (no relationship). When *p* is small (e.g., *p*< .05), there is a small probability of observing this beta by chance if the true relationship is really zero.

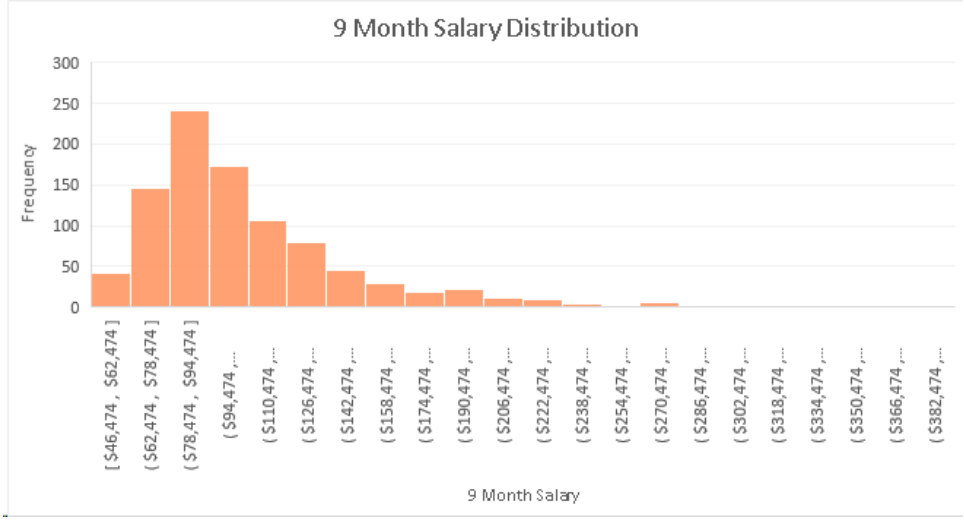
1. Reference Group= Male. 2. Reference Group= White. 3. Reference Group= College of Arts and Humanities.

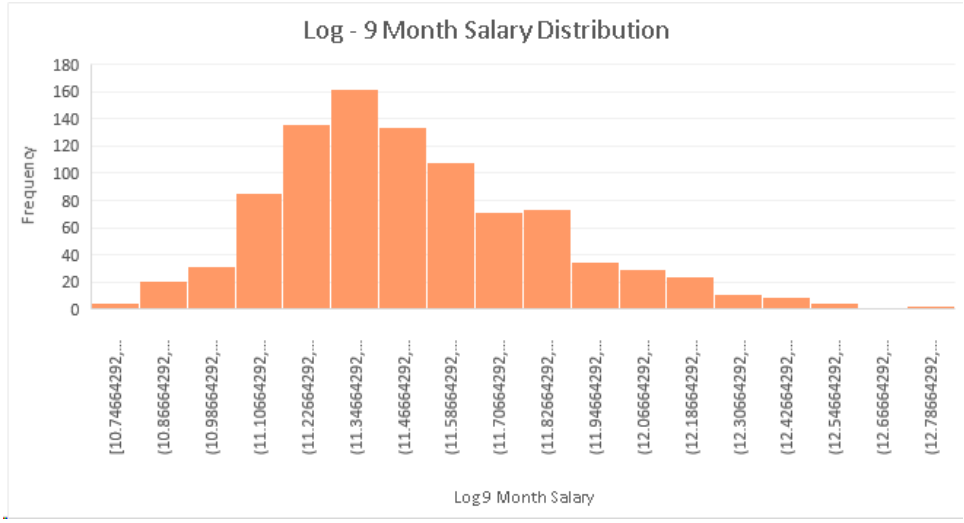
	Outcome Variable: LN(Adjusted 9 Month Salary)		
	Professor	Associate Professor	Assistant Professor
Input Variables	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)
Female[1]	-0.055 (0.035)	0.0002 (0.017)	0.001 (0.016)
Race/Ethnicity[2]			
Asian	-0.050 (0.031)	0.013 (0.022)	0.021 (0.020)
International	-0.019 (0.181)	0.057 (0.065)	0.014 (0.022)
Underrepresented Minority	-0.033 (0.044)	-0.023 (0.029)	0.023 (0.022)
Total Faculty Years at UCF	-0.008*** (0.002)	-0.009*** (0.002)	0.002 (0.002)
Number of Ranks Held at UCF	-0.144*** (0.014)	-0.054*** (0.014)	-0.012 (0.029)
College[3]			
College of Business Admin.	0.566*** (0.053)	0.717*** (0.027)	1.030*** (0.028)
College of Comm. Innov. & Edu.	0.114** (0.041)	0.118*** (0.024)	0.210*** (0.021)
College of Engin./ Computer Science	0.253*** (0.045)	0.346*** (0.028)	0.512*** (0.020)
College of Health Prof. & Sciences	0.161* (0.078)	0.103** (0.038)	0.207*** (0.026)
College of Hospitality Management	0.317*** (0.086)	0.181*** (0.035)	0.243*** (0.027)
College of Medicine	0.235*** (0.067)	0.194*** (0.037)	0.366*** (0.031)
College of Nursing	0.159* (0.083)	0.178** (0.054)	0.341*** (0.031)
College of Optics and Photonics	0.426*** (0.059)	0.291*** (0.076)	0.361*** (0.046)
College of Sciences	0.079* (0.037)	0.104*** (0.020)	0.288*** (0.017)
College of Graduate Studies	0.075 (0.081)	0.208*** (0.060)	0.468*** (0.036)
Number of Awards (TIP/RIA/SoTL)	0.035*** (0.006)	0.056*** (0.007)	0.052** (0.017)
Merit Pay Increases- ADI	0.049*** (0.010)	0.039*** (0.009)	-0.002 (0.016)
Merit Pay Increases- Other	-0.005 (0.010)	0.007 (0.007)	0.003 (0.012)
Number of Times Paid Leave	0.013 (0.012)	-0.002 (0.007)	-0.005 (0.011)
Female x Asian	0.047 (0.071)	0.003 (0.037)	-0.027 (0.030)
Female x International	NA	-0.056 (0.097)	0.011 (0.038)
Female x Under-repressed Minority	0.098 (0.085)	0.018 (0.040)	-0.007 (0.034)
Constant	11.984*** (0.052)	11.415*** (0.036)	10.996*** (0.033)
Observations (n)	276	357	309
Adjusted R^2	0.636	0.769	0.854

Note: Entries are given as log estimate (standard error).
**p<0.05; **p<0.01; ***p<0.001*

APPENDIX D – DATA AND ANALYSIS

SALARY VS. LOG SALARY





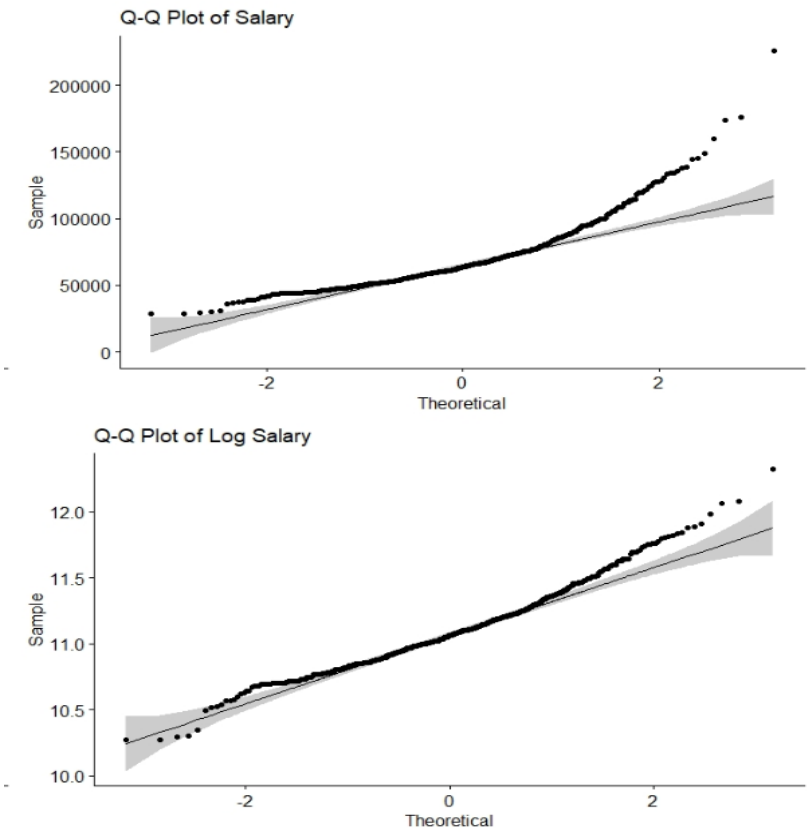
Changing our dependent variable has a drastic effect on how we interpret our results. Namely, do we believe that the factors in our data have an additive effect on salary, or a multiplicative one? Based on the available literature in similar salary equity studies, we chose to make the log salary our dependent variable. The above graphs present the distribution of salary and the LN (salary) for the Tenure Earning Faculty.

Salary data is by nature not normal, and since this analysis is being performed to assess factors that are additive, the log of the salary was used to bring the data closer to normality, which is shown in the Q-Q Plots presented below. In both Q-Q plots, the horizontal axis represents the theoretical normal distribution whereas the vertical axis represents the distribution of the sample. When the sample distribution is close to the theoretical normal distribution, the data points fall approximately along the 45-degree reference line.

The Schapiro-Wilk test is a test of normality in statistics that is often performed on a dataset when questions of normality arise. A Schapiro-Wilk test was performed for this dataset prior to studying faculty equity on the original salary data and its log to assess normality.

Original Data: W = .79812, p-value < 2.2e-16
LN of Salary: W = .96739, p-value = 7.199e-15

The results of the Schapiro-Wilk test still indicate a non-normalized distribution even after the LN transformation. However, looking at both the distribution and Q-Q plots, we see that the log transformation do bring the data closer to normal.



INTERPRETING LOG SALARY MODEL RESULTS

The multivariate model for salary is relatively simple, and looks like

$$\text{Adjusted 9 Month Salary} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p$$

Where p is the number of factors considered, and x is the value of a particular factor. The interpretation is equally straightforward. Say that x_1 was the total number of years a faculty member has been at UCF. For an increase of one year at UCF, we can expect an increase of β_1 dollars to the faculty member's salary. There is more nuance to interpreting categorical variables, but the point is that each variable is assumed to have an *additive* effect on salary.

The multivariate model for log salary, on the other hand, takes the form

$$\log(\text{Adjusted 9 Month Salary}) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p$$

When we exponentiate both sides, the equation becomes

$$e^{\log(\text{Adjusted 9 Month Salary})} = e^{\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p}$$
$$\text{Adjusted 9 Month Salary} = e^{\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p}$$
$$\text{Adjusted 9 Month Salary} = e^{\beta_0} * e^{\beta_1 x_1} * e^{\beta_2 x_2} * \ldots * e^{\beta_p x_p}$$

Note that the variables in this model have a *multiplicative* effect on salary, which changes how results are reported. Neither method is right or wrong, necessarily, just different.

IDENTIFYING EXTREME VALUES

The multivariate regression model can help identify issues on an aggregate level, but it is difficult to take corrective action on such results. To target individuals rather than broad groups, a slightly different method is necessary. Using models *with demographics factors excluded*, we can obtain a point estimate for predicted log

salary and a prediction interval. If any faculty member's actual log salary falls below the lower bound for their prediction interval, they are flagged for further investigation.

PREDICTION INTERVALS

Consider a hypothetical faculty member, Dr. Jane Doe. If we enter Jane's information into the model, we get an estimated log salary and prediction interval for her based on her experience, field, awards, etc. If a new faculty member came in with exactly the same qualifications, we can say with 95% confidence that her log salary should fall within that prediction interval.

If Dr. Doe's actual log salary is below the lower bound for the prediction interval, we should investigate further to see if there is a reason she is being underpaid. Note that if we wish to be more confident that the true salary falls within the prediction interval, we have to widen it, so fewer faculty members will be flagged for review. Conversely, reducing the level of confidence to something like 90% narrows the intervals, so more faculty will be flagged.

Why use prediction intervals rather than confidence intervals? Dr. Doe's 95% confidence interval means that we can say with 95% confidence that the *average* faculty member with her qualifications has a log salary in that range. Confidence intervals are considerably narrower than prediction intervals, and many individual observations fall outside it. Comparing the equations for calculating each is useful:

Let y_{new} be a new faculty member, $\widehat{y_h}$ be their predicted log salary, and x be the factors about them that affect their salary.

Prediction interval

$$\widehat{y_h} \pm t_{\frac{\alpha}{2},n-2} \times \sqrt{MSE \times \left(1 + \frac{1}{n} + \frac{(x-\bar{x})^2}{\sum(x_i-\bar{x})^2}\right)}$$

Confidence interval

$$\widehat{y_h} \pm t_{\frac{\alpha}{2},n-2} \times \sqrt{MSE \times \left(\frac{1}{n} + \frac{(x-\bar{x})^2}{\sum(x_i-\bar{x})^2}\right)}$$

Note that there is an extra term in the standard error of the prediction interval, which makes them wider.

INTERPRETING A REGRESSION COEFFICIENT AND CALCULATING THE PREDICTED SALARY

ESTIMATING LN(SALARY)

Using the regression table from College of Health Professions and Sciences (Appendix G), the salary of each rank could be calculated using the formula below:

Rank	**Equation for Calculating LN(Salary)**
Professor	12.04 -0.30*Female -0.05*Asian +0.08*International +0.03*Underrepresented Minority +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave

Associate	12.04 -0.30*Female -0.05*Asian +0.08*International +0.03*Underrepresented Minority +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave -0.65*Associate Prof +0.25*(Female*Associate Prof.)
Assistant	12.04 -0.30*Female -0.05*Asian +0.08*International +0.03*Underrepresented Minority +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave -0.91*Assistant Prof +0.32*(Female*Assistant Prof.)

Table 1

CALCULATING MALE'S AND FEMALE'S LN(SALARY) WITHIN A RANK

Step 1, Identify the formula:

Because White male is the reference group, the formula to calculate male Professor is simply replace Female from the aforementioned formula with 0:

12.04 -0.30*(0) +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave

The formula to calculate female Professor is replace Female from the aforementioned formula with 1:

12.04 -0.30*(1) +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave

Step 2, replacing variables with values:

In order to compare difference in salary between male and female Professors, we have to assume all other conditions are the same. That leaves:

Male Full Professor's LN(salary): 12.04 -0.30*(0)

Female Full Professor's LN(salary): 12.04 -0.30*(1)

From this step, we could see the difference is the coefficient of Female, -0.30. Specifically, female Professors are estimated to earn an average of 26% less (i.e., (exponent (-0.30)-1)*100) than male Professors if everything else is the same.

It is important to note that results of college regression model are constrained by its small sample size. Interpretations and implications generated based on the college models should be done with caution, taking into account the limitations in model performance and sample size.

CALCULATING MALE'S AND FEMALE'S LN(SALARY) WITH AN INTERACTION TERM

Step 1, Identify the formula:

Use Assistant Professors as an example, the LN(salary) for male Assistant Professor is to replace Female with 0 and Assistant Prof. with 1:

12.04 -0.30*(0) -0.05*Asian +0.08*International +0.03*Underrepresented Minority +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave -0.91*(1) +0.32*(0*1)

For female Assistant Professor is to replace Female with 1 and Assistant Prof. with 1:

12.04 -0.30*(1) -0.05*Asian +0.08*International +0.03*Underrepresented Minority +0.01*Total Years at UCF +0.03*Total Rank Counts +0.03*Awards -0.05*Merits_ADI -0.03*Merits_Other -0.04*Paid Leave -0.91*(1) +0.32*(1*1)

Step 2, replacing variables with values:

In order to compare difference in salary between male and female Assistant Professors, we have to assume all other conditions are the same. That leaves:

Male Assistant Professor's LN(salary): 12.04 -0.30*(0) -0.91*(1) +0.32*(0*1)

Female Assistant Professor's LN(salary): 12.04 -0.30*(1) -0.91*(1) +0.32*(1*1)

From this step, we could see the difference is the coefficient of Female and the Female*Assistant Prof. Interaction term, 0.02 (i.e., -0.30 +0.32). Specifically, female Assistant Professors are estimated to earn an average of 2% more (i.e., (exponent (0.02)-1*100) than male Assistant Professors, if everything else is the same.

As indicated previously, it is important to note that results of college regression model are constrained by its small sample size. Interpretations and implications generated based on the college models should be done with caution, taking into account the limitations in model performance and sample size.

APPENDIX E – DESCRIPTIVE STATISTICS I OF NON-TENURE EARNING FACULTY

Table 1. Frequencies of All Full-Time Non-Tenure Track Faculty (Fall 2020)

Job	JOB_CODE	Freq.	%
Lecturers (*n*= 276)	Lecturer	142	21.13
	Associate Lecturer	107	15.92
	Senior Lecturer	27	4.02
Instructors (*n*= 193)	Instructor	98	14.58
	Associate Instructor	66	9.82
	Senior Instructor	25	3.72
	Instructor Medicine	3	0.45
	Assoc Instructor of Medicine	1	0.15
Scholars (*n*= 45)	Research Associate	34	5.06
	Assistant Scholar/Scientist	4	0.60
	Asst Scholar/Scient/Eng Medici	4	0.60
	Associate Scholar/Scientist/E	2	0.30
	Scholar/Scientist/Engineer	1	0.15
Specialized Faculty (*n*= 37)	Assistant In	22	3.27
	Associate In	13	1.93
	Assistant in Medicine	2	0.30
Professors (*n*= 53)	Assistant Professor	23	3.42
	Associate Professor	11	1.64
	Assistant Professor Medicine	8	1.19
	Professor	6	0.89
	Associate Professor Medicine	4	0.60
	Professor of Medicine	1	0.15
Instructional Designer (*n*= 37)	Instructional Specialist	15	2.23
	Asst Instructional Designer	8	1.19
	Asoc Instructional Designer	7	1.04
	Senior Instructional Designer	7	1.04
Librarian (*n*= 31)	Medical Assistant Librarian	4	0.60
	Assistant Librarian	9	1.34
	Medical Librarian	1	0.15
	Associate Librarian	15	2.23
	Librarian	2	0.30
	Total	672	100.00

Table 2. All Full-Time Non-Tenure Track Faculty Salary Descriptive Statistics (N= 672)

	Instructors (n= 193)	Instructional Designer (n= 37)	Lecturers (n= 276)	Librarian (n= 31)	Professors (n= 53)	Scholars (n= 45)	Specialized Faculty (n= 37)
Mean	$ 64,019.44	$51,088.62	$ 68,909.06	$56,386.65	$ 87,134.77	$ 81,365.25	$ 69,538.97
Std.Dev	$ 17,458.29	$11,830.37	$ 20,804.65	$ 5,325.14	$ 32,135.42	$ 26,079.94	$ 12,549.26
Min	$ 36,000.00	$28,964.00	$ 39,000.00	$49,092.00	$ 50,000.00	$ 41,177.00	$ 45,000.00
Q1	$ 50,000.00	$47,319.00	$ 55,285.50	$51,860.00	$ 65,000.00	$ 59,291.00	$ 62,082.00
Median	$ 61,146.51	$51,137.00	$ 63,875.02	$56,330.00	$ 81,000.00	$ 76,929.00	$ 69,547.00
Q3	$ 73,157.96	$57,158.00	$ 75,436.04	$58,933.00	$ 97,174.00	$ 97,418.00	$ 76,501.00
Max	$135,800.90	$70,972.00	$176,007.68	$72,490.00	$225,758.00	$148,684.82	$114,004.00
MAD	$ 17,160.37	$ 8,120.20	$ 14,419.52	$ 4,940.02	$ 23,973.64	$ 27,442.93	$ 10,944.55
IQR	$ 23,157.96	$ 9,839.00	$ 20,007.17	$ 6,429.00	$ 32,174.00	$ 38,127.00	$ 14,419.00
CV	0.27	0.23	0.3	0.09	0.37	0.32	0.18
Skewness	1.1	-0.24	1.86	1.14	1.91	0.54	0.8
SE.Skewness	0.17	0.39	0.15	0.42	0.33	0.35	0.39
Kurtosis	1.43	-0.61	4.74	1.19	5.1	-0.44	2.41
N.Valid	193	37	276	31	53	45	37
Pct.Valid	100	100	100	100	100	100	100

Table 3. Frequencies of Instructor and Lecturer Rank

Job	JOB_CODE	IL_Rank	Freq
Lecturers (n= 276)	Lecturer	1-Lecture	142
	Associate Lecturer	2-Associate Lecturer	107
	Senior Lecturer	3-Senior Lecturer	27
Instructors (n= 193)	Instructor	4-Instructor	101
	Instructor Medicine		
	Associate Instructor	5-Associate Instructor	67
	Assoc Instructor of Medicine		
	Senior Instructor	6- Senior Instructor	25
Total			469

Table 4. Instructors and Lecturers Salary Descriptive Statistics (N= 469)

	Instructor (n= 101)	Associate Instructor (n= 67)	Associate Lecturer (n= 107)	Lecturer (n= 142)	Senior Instructor (n= 25)	Senior Lecturer (n= 27)
Mean	$ 56,205.24	$ 69,204.43	$ 73,467.07	$ 62,337.02	$ 81,693.05	$ 85,409.93
Std.Dev	$ 12,077.27	$ 17,816.66	$ 20,975.10	$ 17,962.20	$ 17,327.76	$ 20,749.38
Min	$ 36,000.00	$ 44,327.73	$ 51,610.22	$ 39,000.00	$ 58,849.49	$ 55,189.69
Q1	$ 47,994.61	$ 57,185.00	$ 61,071.04	$ 51,637.50	$ 67,330.25	$ 73,435.43
Median	$ 53,273.08	$ 67,090.62	$ 67,342.08	$ 58,544.04	$ 79,452.97	$ 82,620.00
Q3	$ 64,051.26	$ 76,044.00	$ 80,058.00	$ 66,661.91	$ 95,257.97	$ 94,603.29
Max	$108,896.62	$135,800.90	$176,007.68	$134,257.50	$120,931.67	$159,607.24
MAD	$ 12,669.77	$ 13,778.72	$ 10,856.07	$ 10,991.57	$ 22,170.98	$ 17,554.76
IQR	$ 16,056.65	$ 18,419.00	$ 18,510.64	$ 14,975.10	$ 27,927.72	$ 20,864.67
CV	0.21	0.26	0.29	0.29	0.21	0.24
Skewness	1.05	1.12	2.39	1.84	0.42	1.53
SE.Skewness	0.24	0.29	0.23	0.2	0.46	0.45
Kurtosis	2.05	1.74	6.84	3.6	-0.97	3.63
N.Valid	101	67	107	142	25	27
Pct.Valid	100	100	100	100	100	100

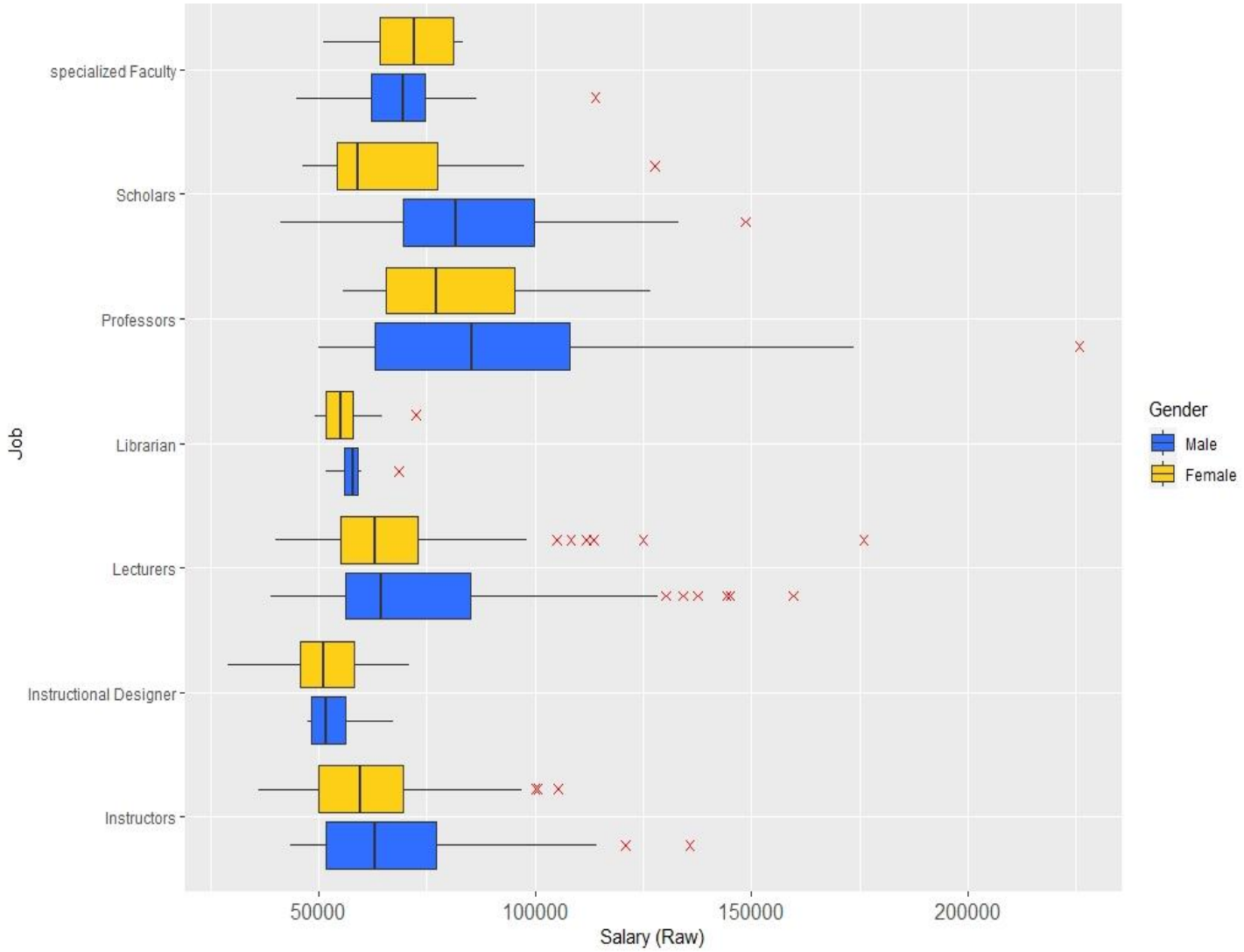


Figure 1 Salary Boxplot by Job for Non-Tenure Track Faculty (N= 672)

Note. A red X represents an outlier which is located outside 1.5 times the interquartile range above the upper or below the lower quartile.

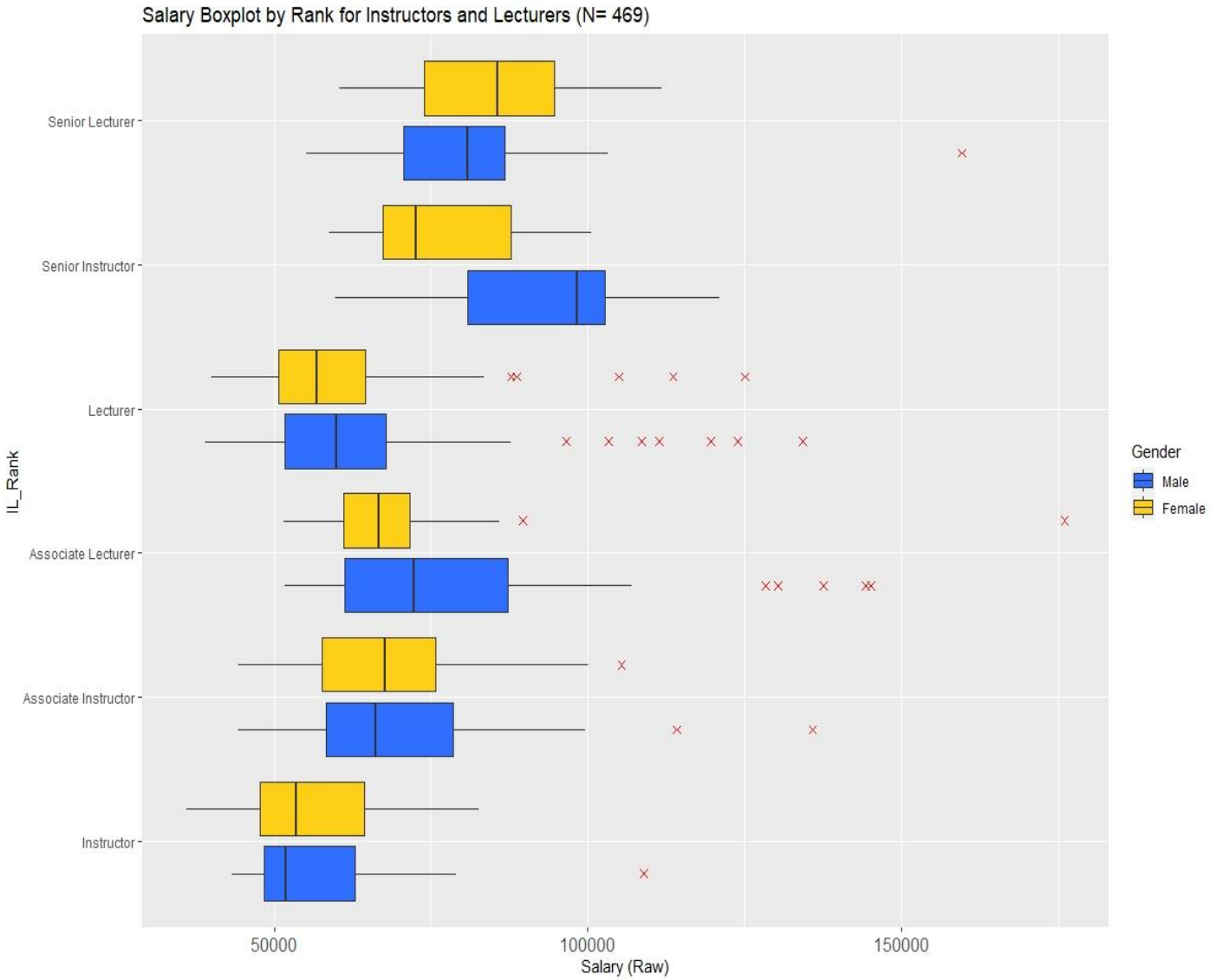


Figure 2 Salary Boxplot by Rank for Instructors and Lecturers (N= 469)

Note. A red X represents an outlier which is located outside 1.5 times the interquartile range above the upper or below the lower quartile.

APPENDIX F – REGRESSION MODELS FOR NON-TENURE EARNING FACULTY

Definitions

- Predictor: a variables that included in the regression model to estimate the outcome
- Estimate: a beta coefficient represents the effect size on outcome given all other variables in the model
- S.E.: a standard error of the mean provides an indication about how reliable the sample mean is in terms of representing a population mean. The bigger the S.E., the less reliable in its representation.
- 95% Conf. Int.: a 95% Confidence Interval could be interpreted as a range of values where the true mean of the population could be with 95% confidence.
- P: A P-value represents the probability that a null hypothesis could be true. In the case of our study, most null hypotheses are beta =0 (no effect). When p-value is small (e.g., p< .05), the chance that the variable has an impact on salary is great.

Model 1: Non-Tenure Tack Faculty Regression Coefficient Estimates

1. Reference= Male. 2. Reference= White. 3. Reference= Instructors. 4. Reference= Less than Doctoral Degree. 5. Reference= Regular. 6. Reference= College of Arts and Humanities.

	Outcome Variable: LN(Adjusted 9 Month Salary)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	10.71 ***	0.03	10.66 – 10.77	**<0.001**
Female[1]	-0.02	0.03	-0.07 – 0.03	0.351
Race/Ethnicity[2]				
Asian	-0.03	0.03	-0.08 – 0.03	0.340
International	-0.07	0.04	-0.15 – 0.01	0.088
Underrepresented Minority	0.01	0.02	-0.02 – 0.05	0.485
Job Code[3]				
Instructional Designer	-0.09	0.07	-0.24 – 0.06	0.236
Lecturers	0.09 **	0.03	0.04 – 0.15	**0.001**
Librarian	-0.14 *	0.07	-0.27 – -0.00	**0.044**
Professors	0.37 ***	0.04	0.28 – 0.46	**<0.001**
Scholars	0.30 ***	0.04	0.22 – 0.38	**<0.001**
Specialized Faculty	0.14 **	0.04	0.05 – 0.22	**0.002**
Doctoral Degree[4]	0.01	0.02	-0.03 – 0.05	0.623
Visiting[5]	-0.14 ***	0.03	-0.19 – -0.08	**<0.001**
College[6]				
College of Business Administration	0.63 ***	0.03	0.56 – 0.69	**<0.001**
College of Comm. Innov. & Educ.	0.21 ***	0.03	0.15 – 0.26	**<0.001**
College of Engineering/Computer Science	0.32 ***	0.03	0.25 – 0.38	**<0.001**
College of Health Professions & Science	0.28 ***	0.03	0.23 – 0.34	**<0.001**
College Of Medicine	0.10 *	0.04	0.02 – 0.19	**0.013**
College Of Nursing	0.39 ***	0.04	0.31 – 0.46	**<0.001**
College Of Sciences	0.17 ***	0.02	0.12 – 0.21	**<0.001**
Other Colleges	0.24 ***	0.03	0.18 – 0.31	**<0.001**
Rosen College of Hospitality Management	0.30 ***	0.04	0.21 – 0.39	**<0.001**
Awards	0.09 ***	0.01	0.07 – 0.11	**<0.001**
Merits-ADI	0.04 ***	0.01	0.02 – 0.06	**<0.001**
Merits-OTHER	0.02 ***	0.00	0.01 – 0.03	**<0.001**
Female x Inst. Designer	-0.11	0.08	-0.27 – 0.05	0.163

Female x Lecturer	-0.00	0.03	-0.07 – 0.06	0.896
Female x Librarian	0.07	0.07	-0.08 – 0.21	0.371
Female x Professor	-0.08	0.05	-0.19 – 0.02	0.116
Female x Scholar	-0.15 *	0.06	-0.27 – -0.03	**0.017**
Female x Specialized Faculty	0.02	0.07	-0.12 – 0.16	0.793
Observations			672	
R^2 / R^2 adjusted			0.665 / 0.649	

*Note: * p<0.05 ** p<0.01 *** p<0.001*

Model 2: Instructors and Lecturers Regression Coefficient Estimates

1. Reference= Male. 2. Reference= White. 3. Reference= Instructors. 4. Reference= Less than Doctoral Degree. 5. Reference= Regular. 6. Reference= College of Arts and Humanities.

	Outcome Variable: LN (Adjusted 9 Month Salary)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	10.72 ***	0.02	10.67 – 10.76	**<0.001**
Female[1]	-0.03	0.02	-0.07 – 0.01	0.150
Race/Ethnicity[2]				
Asian	0.02	0.03	-0.03 – 0.08	0.461
International	0.00	0.04	-0.08 – 0.09	0.922
Underrepresented Minority	0.03	0.02	-0.00 – 0.06	0.089
Lecturers[3]	0.10 ***	0.02	0.05 – 0.15	**<0.001**
Doctoral Degree[4]	-0.02	0.02	-0.06 – 0.02	0.315
Visiting[5]	-0.15 ***	0.03	-0.20 – -0.10	**<0.001**
College[6]				
College of Business Administration	0.64 ***	0.03	0.59 – 0.69	**<0.001**
College of Comm. Innov. & Educ.	0.21 ***	0.02	0.16 – 0.25	**<0.001**
College of Engineering/Computer Science	0.39 ***	0.03	0.33 – 0.44	**<0.001**
College of Health Professions & Science	0.29 ***	0.02	0.24 – 0.34	**<0.001**
College Of Medicine	0.14 *	0.07	0.01 – 0.27	**0.041**
College Of Nursing	0.41 ***	0.03	0.35 – 0.47	**<0.001**
College Of Sciences	0.17 ***	0.02	0.13 – 0.20	**<0.001**
Other Colleges	0.12 **	0.04	0.04 – 0.19	**0.002**
Rosen College of Hospitality Management	0.31 ***	0.04	0.24 – 0.38	**<0.001**
Awards	0.10 ***	0.01	0.08 – 0.11	**<0.001**
Merits-ADI	0.03 **	0.01	0.01 – 0.05	**0.002**
Merits-OTHER	0.02 ***	0.00	0.01 – 0.03	**<0.001**
Female x Lecturer	0.01	0.03	-0.03 – 0.06	0.555
Observations	469			
R^2 / R^2 adjusted	0.772 / 0.762			

Note:

** p<0.05 ** p<0.01 *** p<0.001*

Model 3: Instructors and Lecturers by Job Code Regression Coefficient Estimates

(1. Reference= Male. 2. Reference= White. 3. Reference= Instructors. 4. Reference= Less than Doctoral Degree. 5. Reference= Regular. 6. Reference= College of Arts and Humanities.)

	Outcome Variable: LN (Adjusted 9 Month Salary)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	10.70 ***	0.02	10.66 – 10.74	**<0.001**
Female[1]	-0.02	0.01	-0.04 – 0.01	0.124
Race/Ethnicity[2]				
Asian	0.01	0.03	-0.05 – 0.06	0.834
International	0.00	0.04	-0.08 – 0.08	0.996
Underrepresented Minority	0.03	0.02	-0.00 – 0.06	0.095
Rank[3]				
Associate Instructor	0.09 ***	0.02	0.05 – 0.14	**<0.001**
Associate Lecturer	0.20 ***	0.03	0.15 – 0.25	**<0.001**
Lecturers	0.11 ***	0.02	0.07 – 0.15	**<0.001**
Senior Instructor	0.19 ***	0.04	0.12 – 0.27	**<0.001**
Senior Lecturer	0.28 ***	0.04	0.21 – 0.36	**<0.001**
Doctoral Degree[4]	-0.02	0.02	-0.06 – 0.01	0.208
Visiting[5]	-0.14 ***	0.02	-0.19 – -0.10	**<0.001**
College[6]				
College of Business Administration	0.64 ***	0.02	0.60 – 0.69	**<0.001**
College of Comm. Innov. & Educ.	0.22 ***	0.02	0.18 – 0.26	**<0.001**
College of Engineering/Computer Science	0.39 ***	0.03	0.33 – 0.44	**<0.001**
College of Health Professions & Science	0.30 ***	0.02	0.25 – 0.34	**<0.001**
College Of Medicine	0.16 *	0.06	0.03 – 0.28	**0.015**
College Of Nursing	0.42 ***	0.03	0.36 – 0.48	**<0.001**
College Of Sciences	0.18 ***	0.02	0.14 – 0.21	**<0.001**
Other Colleges	0.13 ***	0.04	0.06 – 0.20	**0.001**
Rosen College of Hospitality Management	0.31 ***	0.03	0.25 – 0.38	**<0.001**
Awards	0.08 ***	0.01	0.06 – 0.10	**<0.001**
Merits-ADI	0.03 **	0.01	0.01 – 0.05	**0.009**
Merits-OTHER	0.00	0.00	-0.01 – 0.01	0.897
Observations			469	
R^2 / R^2 adjusted			0.790 / 0.779	

Note. There is no significant interaction effect between Gender and Rank. Including the interaction effect actually decreases the adjusted R^2. Thus, the model with no interaction effect is reported here.
** p<0.05 ** p<0.01 *** p<0.001*

APPENDIX G - COLLEGE PREDICTED SALARIES

COLLEGE OF ARTS AND HUMANITIES- PREDICTED SALARY BY GENDER AND RANK

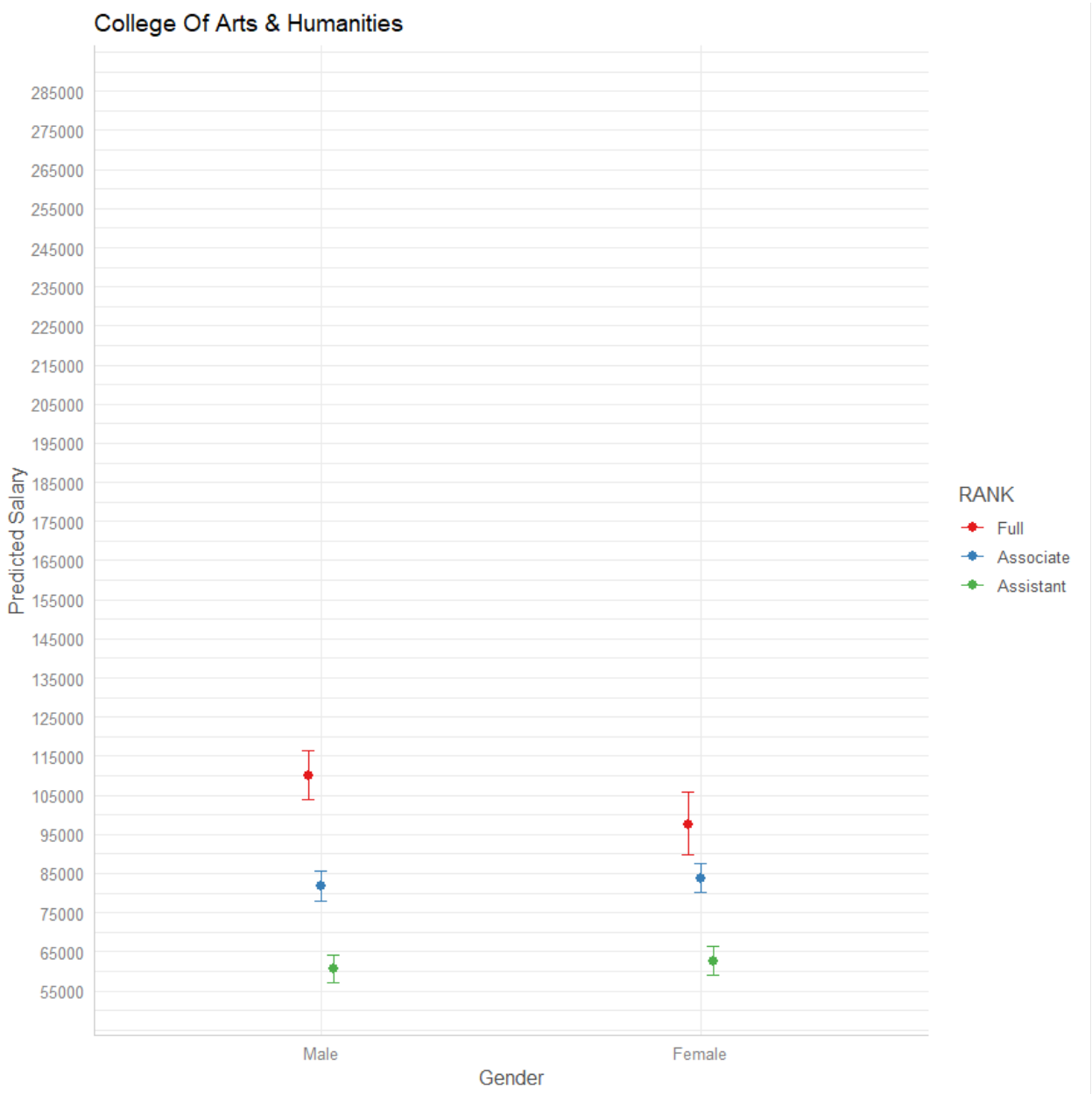
Reference groups: Gender: Male, Ethnicity: White, Rank: Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	11.69 ***	0.05	11.58 – 11.79	**<0.001**
Female	-0.12 **	0.04	-0.21 – -0.03	**0.008**
Asian	-0.07	0.04	-0.15 – 0.01	0.106
International	-0.02	0.04	-0.10 – 0.07	0.735
Underrepresented Minority	-0.01	0.03	-0.06 – 0.04	0.669
Total Years at UCF	0.00	0.00	-0.00 – 0.01	0.609
Total Rank Counts	-0.10 ***	0.02	-0.13 – -0.06	**<0.001**
Awards	0.06 ***	0.01	0.04 – 0.08	**<0.001**
Merits-ADI	0.06 **	0.02	0.02 – 0.10	**0.006**
MERITS-OTHER	-0.01	0.01	-0.03 – 0.00	0.127
Paid Leave	0.01	0.01	-0.01 – 0.03	0.432
Associate Prof.	-0.30 ***	0.04	-0.37 – -0.23	**<0.001**
Assistant Prof.	-0.60 ***	0.05	-0.69 – -0.51	**<0.001**
Female*Associate Prof.	0.15 **	0.05	0.04 – 0.25	**0.008**
Female*Assistant Prof.	0.15 **	0.05	0.04 – 0.26	**0.006**
Observations	164			
R^2 / R^2 adjusted	0.819 / 0.802			

*$p<0.05$ **$p<0.01$ ***$p<0.001$

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- "Dot" in middle represents predicted mean of salary
- "Dashes" are the upper and lower bounds of the predicted salary mean
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	23	13	36
Associate	32	37	69
Assistant	31	28	59
Total	86	78	164

Note. The content of this table represents each gender by rank count.

Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	12.51 ***	0.09	12.34 – 12.68	**<0.001**
Female	0.09	0.09	-0.10 – 0.28	0.370
Asian	-0.01	0.05	-0.11 – 0.10	0.894
International	-0.04	0.11	-0.26 – 0.17	0.694
Underrepresented Minority	-0.05	0.07	-0.20 – 0.10	0.488
Total Years at UCF	-0.02 **	0.01	-0.03 – -0.01	**0.002**
Total Rank Counts	-0.08	0.05	-0.19 – 0.02	0.103
Awards	0.05 *	0.02	0.01 – 0.08	**0.011**
Merits-ADI	0.03	0.03	-0.04 – 0.10	0.346
MERITS-OTHER	0.02	0.02	-0.03 – 0.06	0.461
Paid Leave	0.01	0.02	-0.04 – 0.06	0.684
Associate Prof.	-0.22 ***	0.06	-0.34 – -0.11	**<0.001**
Assistant Prof.	-0.35 ***	0.07	-0.50 – -0.21	**<0.001**
Female*Associate Prof.	-0.01	0.11	-0.24 – 0.22	0.935
Female*Assistant Prof.	-0.01	0.16	-0.34 – 0.31	0.943
Observations	71			
R^2 / R^2 adjusted	0.588 / 0.485			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

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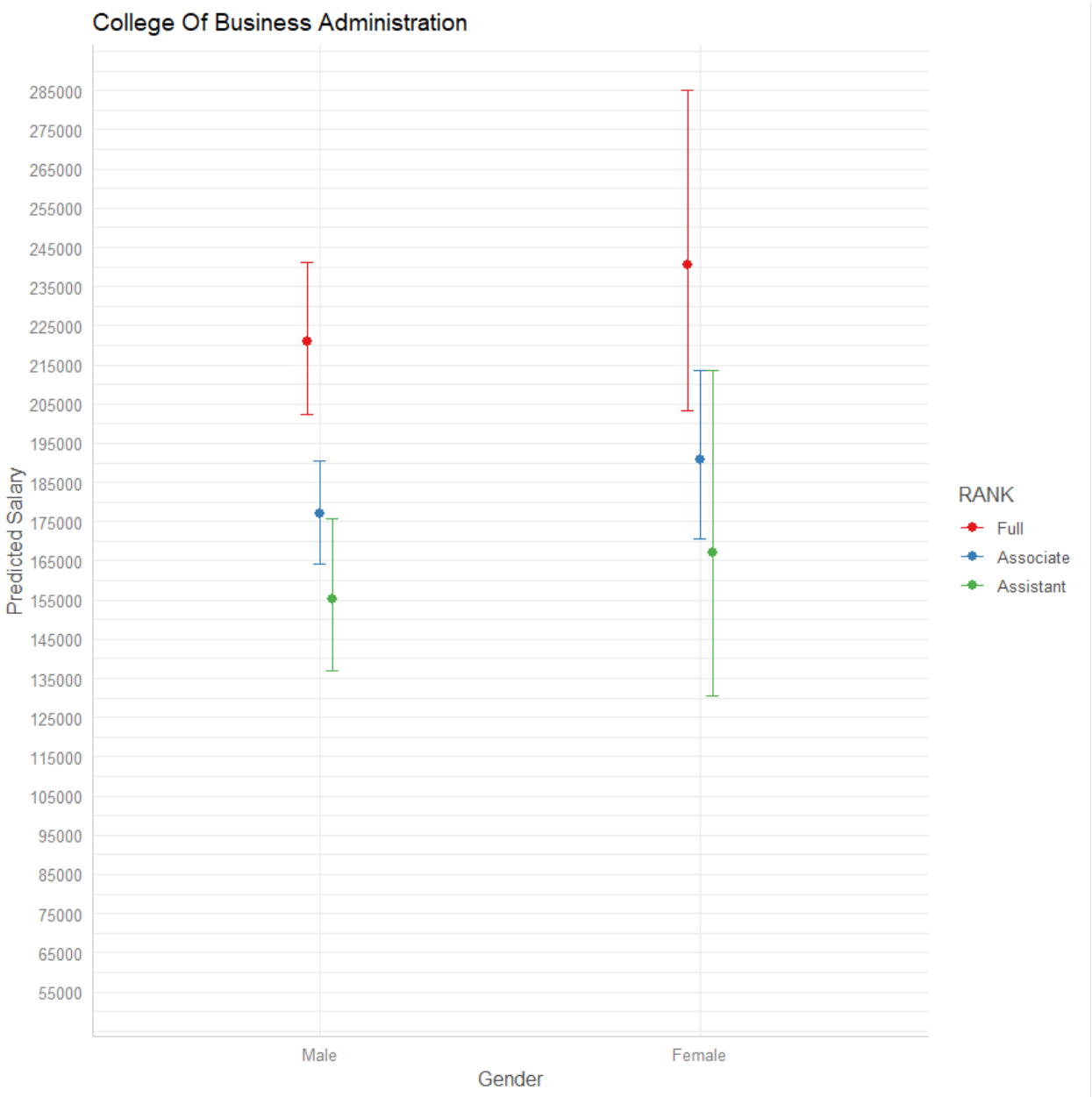
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	17	4	21
Associate	24	11	35
Assistant	13	2	15
Total	54	17	71

Note. The content of this table represents each gender by rank count.

COLLEGE OF COMMUNITY INNOVATION AND EDUCATION- PREDICTED SALARY BY GENDER AND RANK

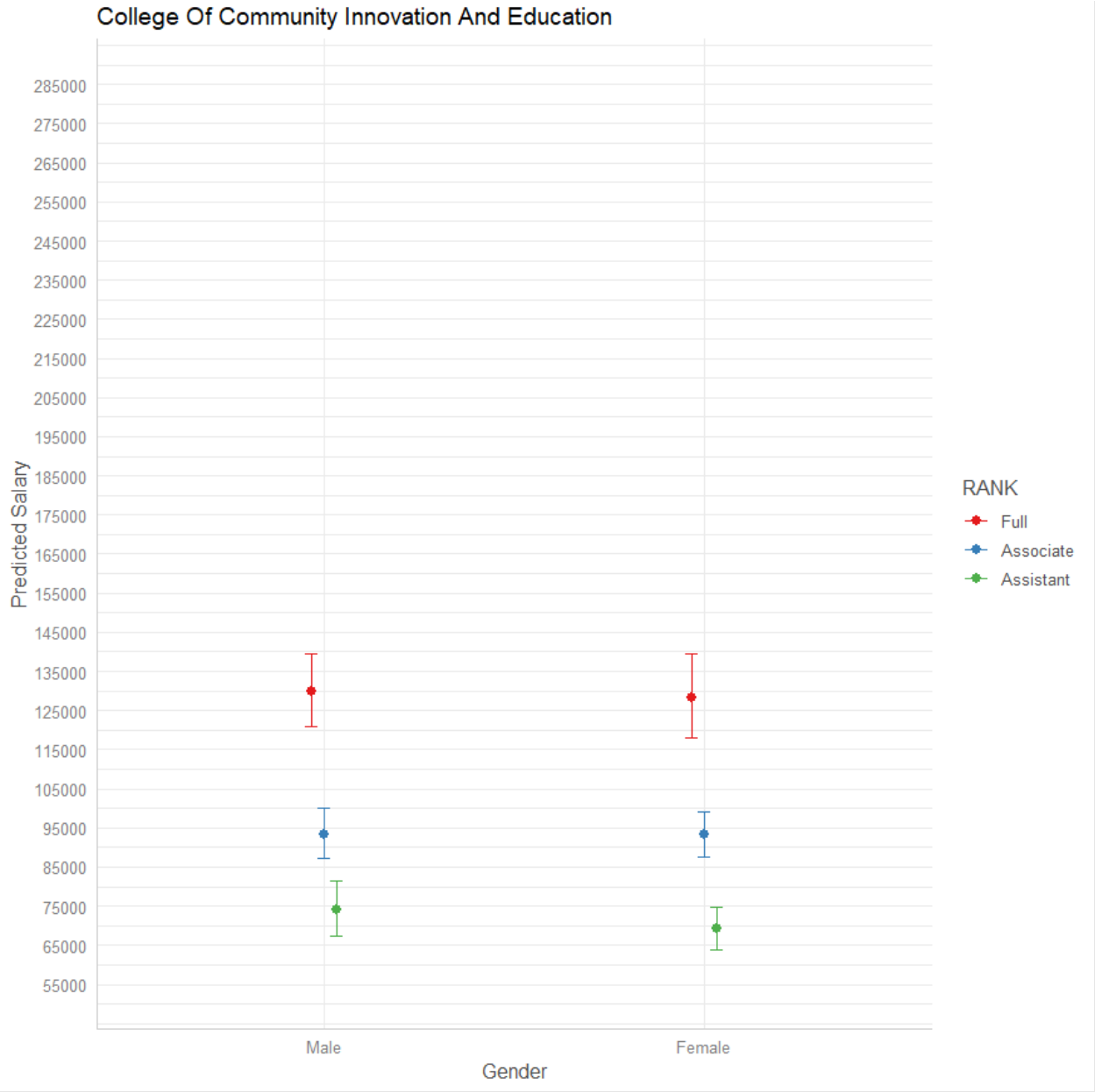
Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	11.93 ***	0.07	11.80 – 12.06	**<0.001**
Female	-0.01	0.05	-0.11 – 0.09	0.828
Asian	0.00	0.05	-0.09 – 0.09	0.968
International	0.01	0.10	-0.18 – 0.20	0.911
Underrepresented Minority	0.07	0.04	-0.01 – 0.15	0.074
Total Years at UCF	-0.01 *	0.00	-0.02 – -0.00	**0.042**
Total Rank Counts	-0.10 ***	0.03	-0.16 – -0.05	**<0.001**
Awards	0.03 *	0.01	0.00 – 0.05	**0.018**
Merits-ADI	0.06 *	0.02	0.01 – 0.10	**0.012**
MERITS-OTHER	0.01	0.02	-0.02 – 0.04	0.504
Paid Leave	-0.00	0.01	-0.03 – 0.03	0.935
Associate Prof.	-0.33 ***	0.05	-0.42 – -0.24	**<0.001**
Assistant Prof.	-0.56 ***	0.06	-0.68 – -0.44	**<0.001**
Female*Associate Prof.	0.01	0.07	-0.12 – 0.14	0.875
Female*Assistant Prof.	-0.06	0.07	-0.20 – 0.09	0.441
Observations	128			
R^2 / R^2 adjusted	0.712 / 0.676			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- "Dot" in middle represents predicted mean of salary
- "Dashes" are the upper and lower bounds of the predicted salary mean
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	23	20	43
Associate	23	27	50
Assistant	15	20	35
Total	61	67	128

Note. The content of this table represents each gender by rank count.

COLLEGE OF ENGINEERING AND COMPUTER SCIENCE- PREDICTED SALARY BY GENDER AND RANK

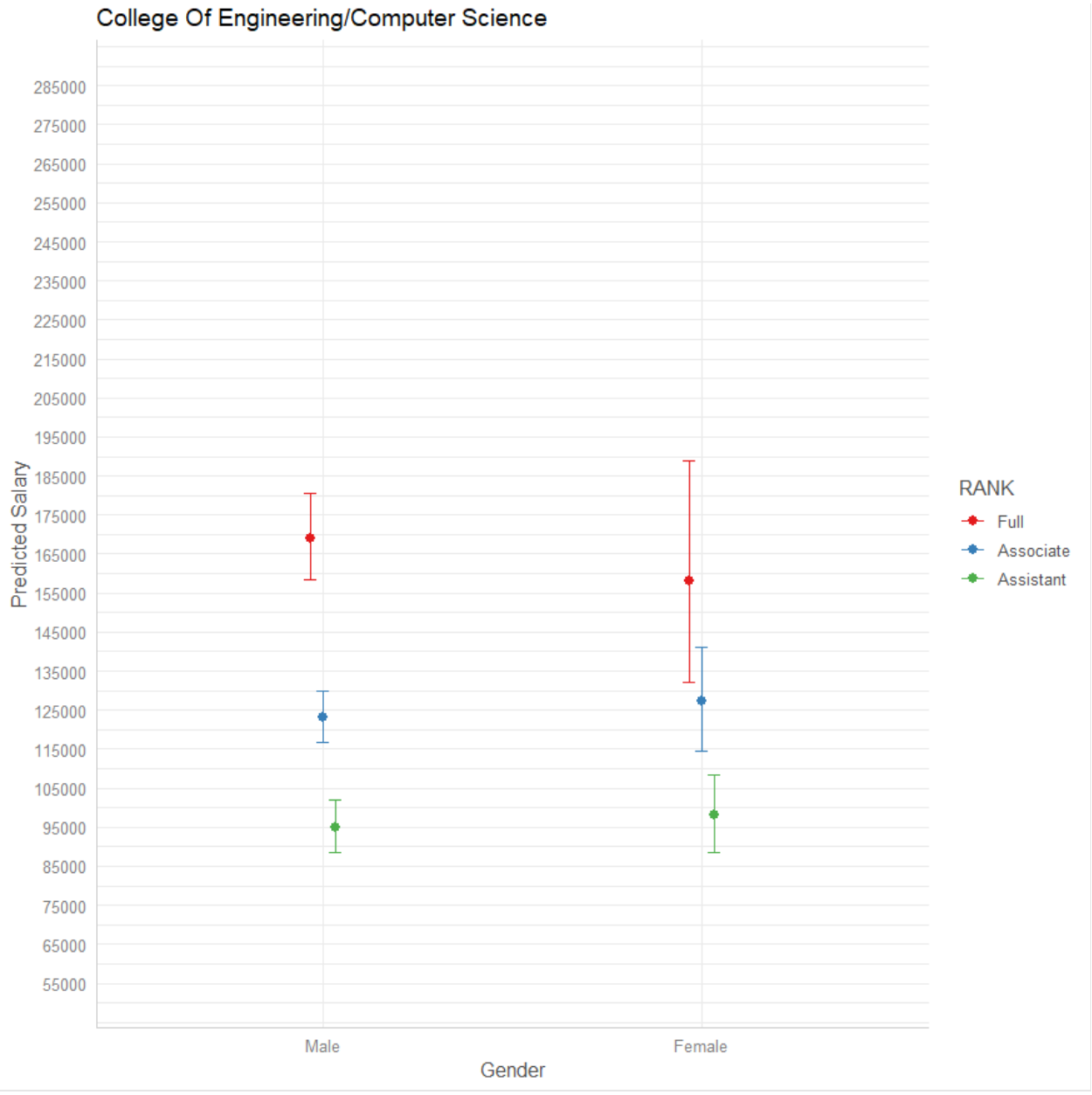
Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	12.28 ***	0.07	12.14 – 12.41	**<0.001**
Female	-0.07	0.09	-0.24 – 0.11	0.447
Asian	-0.01	0.03	-0.06 – 0.05	0.811
International	-0.05	0.05	-0.14 – 0.05	0.349
Underrepresented Minority	-0.03	0.05	-0.13 – 0.07	0.515
Total Years at UCF	-0.01 ***	0.00	-0.02 – -0.01	**<0.001**
Total Rank Counts	-0.13 ***	0.02	-0.18 – -0.09	**<0.001**
Awards	0.04 ***	0.01	0.03 – 0.06	**<0.001**
Merits-ADI	0.02 *	0.01	0.00 – 0.04	**0.031**
MERITS-OTHER	0.01	0.01	-0.02 – 0.04	0.393
Paid Leave	0.01	0.01	-0.02 – 0.04	0.622
Associate Prof.	-0.32 ***	0.04	-0.39 – -0.24	**<0.001**
Assistant Prof.	-0.58 ***	0.05	-0.68 – -0.47	**<0.001**
Female*Associate Prof.	0.10	0.11	-0.11 – 0.31	0.344
Female*Assistant Prof.	0.10	0.10	-0.10 – 0.31	0.333
Observations	151			
R^2 / R^2 adjusted	0.707 / 0.677			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- "Dot" in middle represents predicted mean of salary
- "Dashes" are the upper and lower bounds of the predicted salary mean
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	45	3	48
Associate	39	8	47
Assistant	46	10	56
Total	130	21	151

COLLEGE OF HEALTH PROFESSIONS AND SCIENCES- PREDICTED SALARY BY GENDER AND RANK

Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	12.04 ***	0.12	11.80 – 12.29	**<0.001**
Female	-0.30 *	0.12	-0.54 – -0.05	**0.019**
Asian	-0.05	0.08	-0.22 – 0.11	0.514
International	0.08	0.13	-0.18 – 0.35	0.518
Underrepresented Minority	0.03	0.06	-0.11 – 0.16	0.689
Total Years at UCF	0.01	0.01	-0.02 – 0.04	0.399
Total Rank Counts	0.03	0.07	-0.12 – 0.19	0.672
Awards	0.03	0.04	-0.05 – 0.10	0.476
Merits-ADI	-0.05	0.06	-0.18 – 0.08	0.440
MERITS-OTHER	-0.03	0.06	-0.15 – 0.08	0.548
Paid Leave	-0.04	0.04	-0.13 – 0.05	0.339
Associate Prof.	-0.65 ***	0.13	-0.91 – -0.39	**<0.001**
Assistant Prof.	-0.91 ***	0.12	-1.16 – -0.66	**<0.001**
Female*Associate Prof.	0.25	0.16	-0.08 – 0.57	0.134
Female*Assistant Prof.	0.32 *	0.14	0.04 – 0.61	**0.027**
Observations	39			
R^2 / R^2 adjusted	0.876 / 0.803			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- "Dot" in middle represents predicted mean of salary
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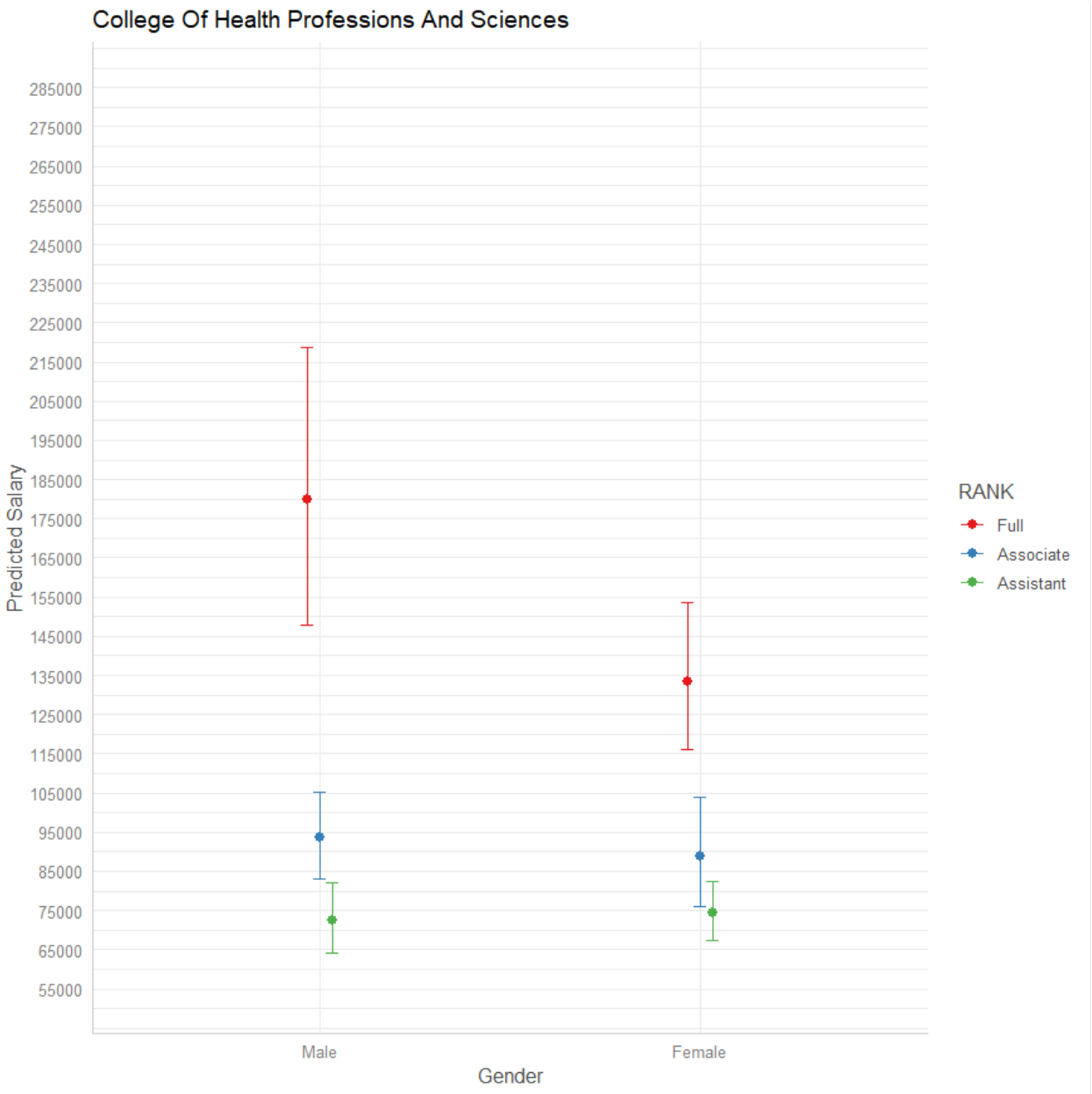
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	2	5	7
Associate	7	6	13
Assistant	5	14	19
Total	14	25	39

Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	12.16 ***	0.12	11.91 – 12.41	**<0.001**
Female	-0.05	0.10	-0.24 – 0.15	0.615
Asian	0.11 *	0.05	0.01 – 0.21	**0.038**
Underrepresented Minority	0.14 *	0.07	0.00 – 0.28	**0.050**
Total Years at UCF	-0.02	0.01	-0.04 – 0.00	0.084
Total Rank Counts	-0.06	0.05	-0.15 – 0.04	0.230
Awards	0.07 **	0.02	0.03 – 0.12	**0.001**
Merits-ADI	0.01	0.02	-0.03 – 0.05	0.547
MERITS-OTHER	-0.02	0.04	-0.09 – 0.06	0.661
Paid Leave	0.08	0.04	-0.01 – 0.17	0.078
Associate Prof.	-0.39 ***	0.07	-0.53 – -0.25	**<0.001**
Assistant Prof.	-0.74 ***	0.11	-0.96 – -0.52	**<0.001**
Female*Associate Prof.	0.05	0.12	-0.19 – 0.29	0.666
Female*Assistant Prof.	0.01	0.11	-0.23 – 0.24	0.958
Observations	39			
R^2 / R^2 adjusted	0.887 / 0.828			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

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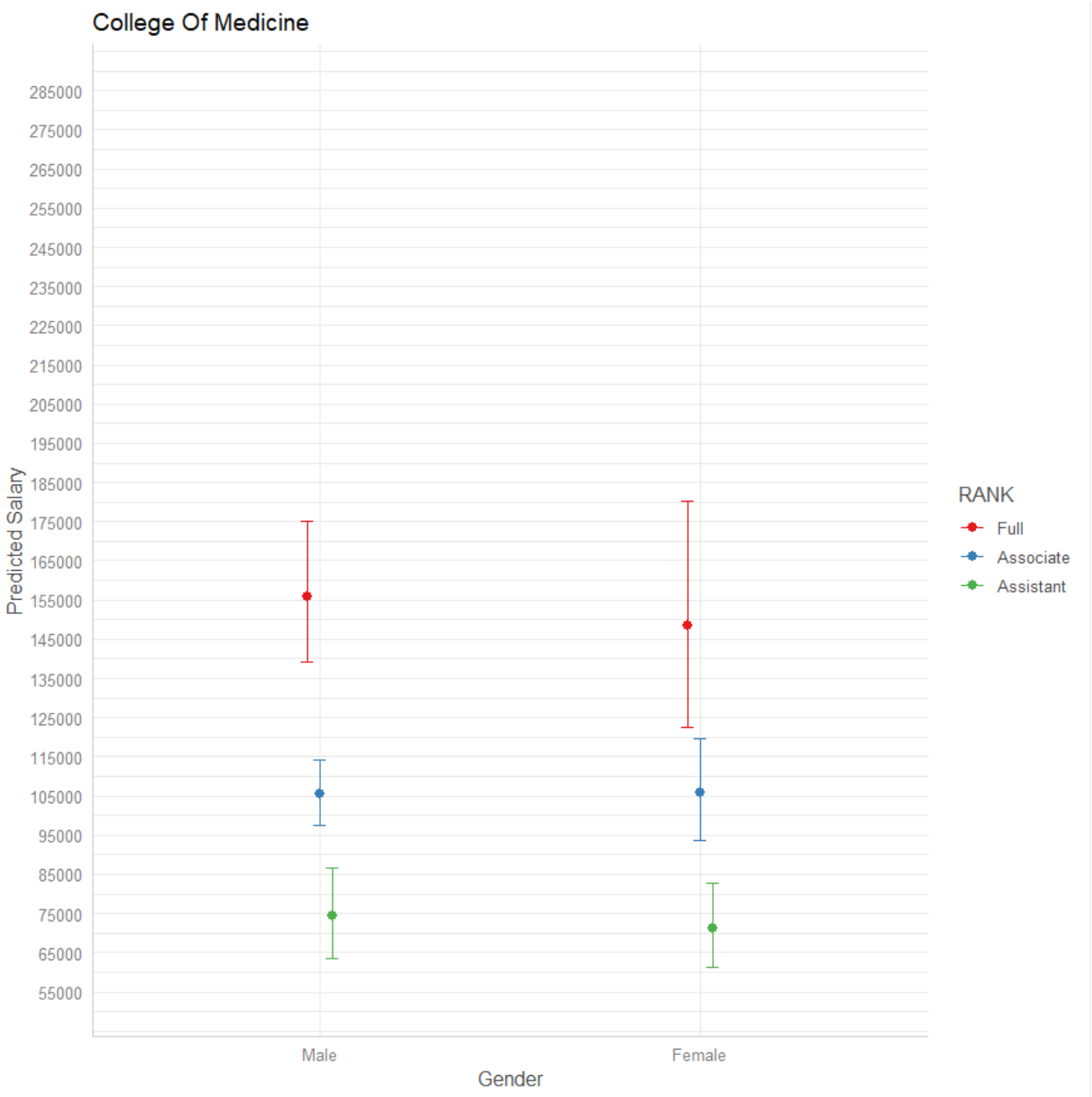
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	8	3	11
Associate	12	4	16
Assistant	6	6	12
Total	26	13	39

Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	12.08 ***	0.05	11.98 – 12.19	**<0.001**
Female	-0.39 ***	0.06	-0.51 – -0.26	**<0.001**
Asian	0.01	0.03	-0.05 – 0.07	0.658
Underrepresented Minority	0.06 *	0.03	0.01 – 0.12	**0.028**
Total Years at UCF	-0.00	0.01	-0.01 – 0.01	0.712
Total Rank Counts	-0.02	0.02	-0.07 – 0.03	0.401
Awards	-0.01	0.02	-0.06 – 0.03	0.465
Merits-ADI	0.02	0.03	-0.04 – 0.09	0.462
MERITS-OTHER	0.04	0.02	-0.01 – 0.09	0.105
Paid Leave	0.00	0.05	-0.11 – 0.12	0.961
Associate Prof.	-0.62 ***	0.07	-0.78 – -0.46	**<0.001**
Assistant Prof.	-0.71 ***	0.05	-0.83 – -0.59	**<0.001**
Female*Associate Prof.	0.41 ***	0.08	0.23 – 0.59	**<0.001**
Female*Assistant Prof.	0.37 ***	0.06	0.24 – 0.50	**<0.001**
Observations	24			
R^2 / R^2 adjusted	0.990 / 0.978			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

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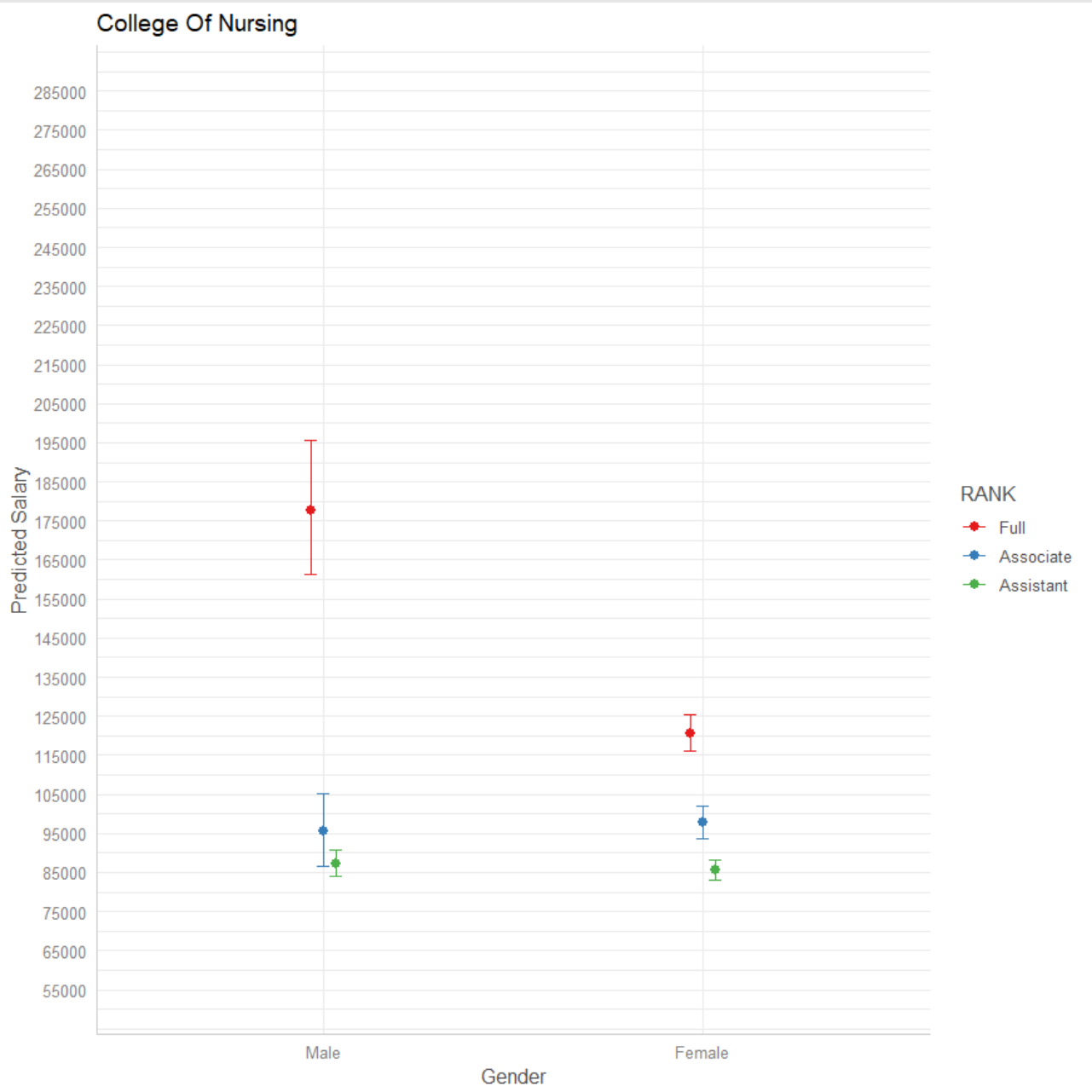
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	1	5	6
Associate	1	5	6
Assistant	4	8	12
Total	6	18	24

College of Optics and Photonics- Predicted Salary by Gender and Rank

Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	12.47 ***	0.28	11.85 – 13.08	**<0.001**
Total Years at UCF	-0.01	0.01	-0.03 – 0.01	0.184
Total Rank Counts	-0.17	0.09	-0.35 – 0.02	0.073
Awards	-0.06	0.08	-0.24 – 0.12	0.505
Merits-ADI	0.10	0.07	-0.05 – 0.26	0.176
MERITS-OTHER	0.03	0.09	-0.17 – 0.23	0.758
Paid Leave	-0.00	0.06	-0.12 – 0.12	0.976
Associate Prof.	-0.53 **	0.17	-0.89 – -0.17	**0.007**
Assistant Prof.	-0.88 **	0.24	-1.39 – -0.37	**0.003**
Observations	22			
R^2 / R^2 adjusted	0.836 / 0.735			

** p<0.05 ** p<0.01 *** p<0.001*

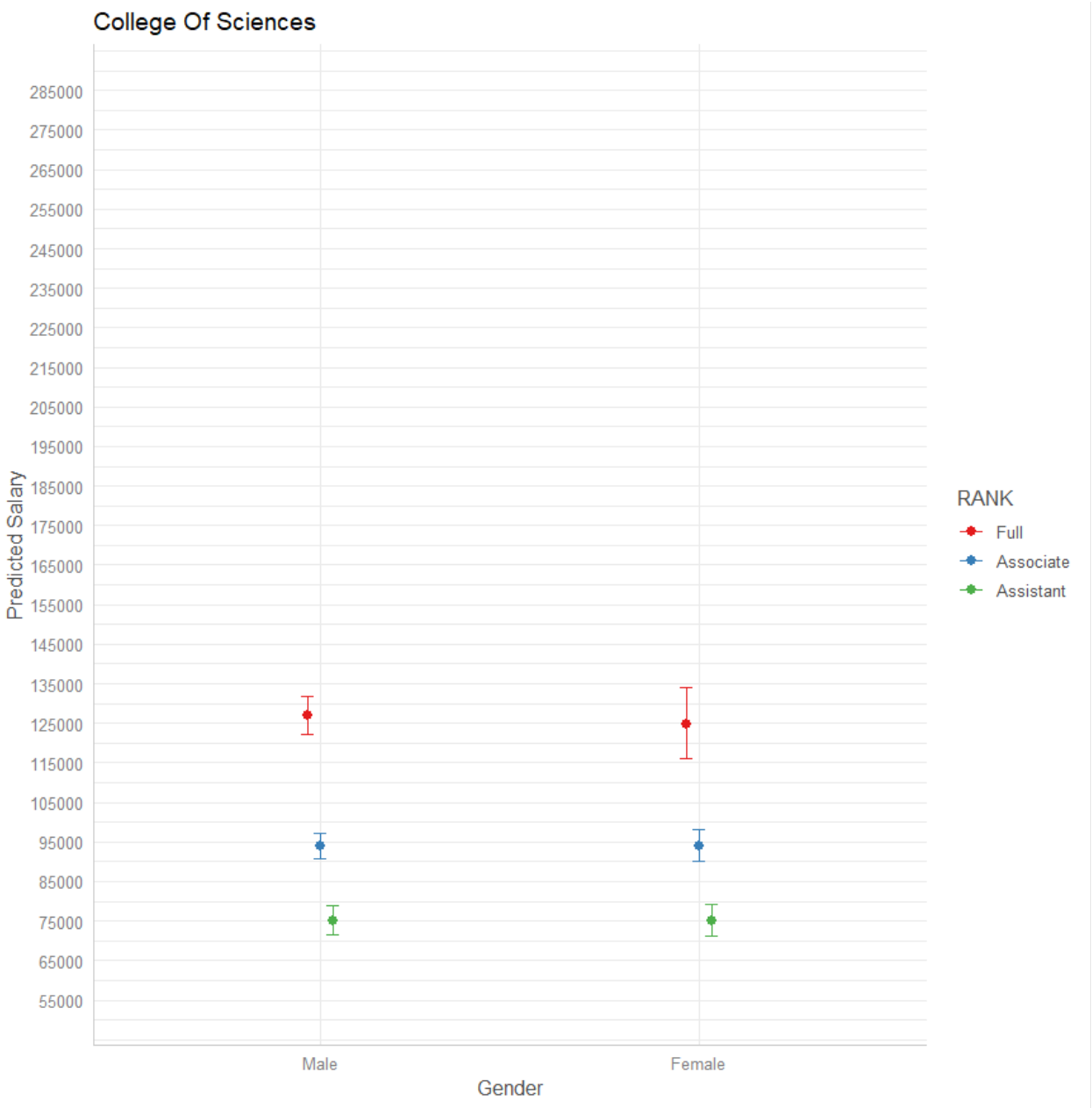
Reference groups: Gender: Male, Ethnicity: White, Rank: Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	11.98 ***	0.04	11.90 – 12.06	**<0.001**
Female	-0.02	0.04	-0.09 – 0.06	0.661
Asian	-0.00	0.02	-0.05 – 0.04	0.955
International	0.03	0.03	-0.04 – 0.09	0.409
Underrepresented Minority	-0.03	0.03	-0.08 – 0.02	0.247
Total Years at UCF	-0.01 ***	0.00	-0.01 – -0.01	**<0.001**
Total Rank Counts	-0.14 ***	0.01	-0.17 – -0.11	**<0.001**
Awards	0.04 ***	0.01	0.03 – 0.06	**<0.001**
Merits-ADI	0.06 ***	0.01	0.03 – 0.08	**<0.001**
MERITS-OTHER	0.01	0.01	-0.01 – 0.03	0.165
Paid Leave	-0.02	0.01	-0.04 – 0.00	0.063
Associate Prof.	-0.30 ***	0.02	-0.35 – -0.25	**<0.001**
Assistant Prof.	-0.53 ***	0.04	-0.60 – -0.45	**<0.001**
Female*Associate Prof.	0.02	0.05	-0.07 – 0.11	0.706
Female*Assistant Prof.	0.02	0.05	-0.08 – 0.11	0.709
Observations	243			
R^2 / R^2 adjusted	0.743 / 0.727			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- "Dot" in middle represents predicted mean of salary
- "Dashes" are the upper and lower bounds of the predicted salary mean
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	66	12	78
Associate	62	34	96
Assistant	41	28	69
Total	169	74	243

ROSEN COLLEGE OF HOSPITALITY MANAGEMENT-- PREDICTED SALARY BY GENDER AND RANK

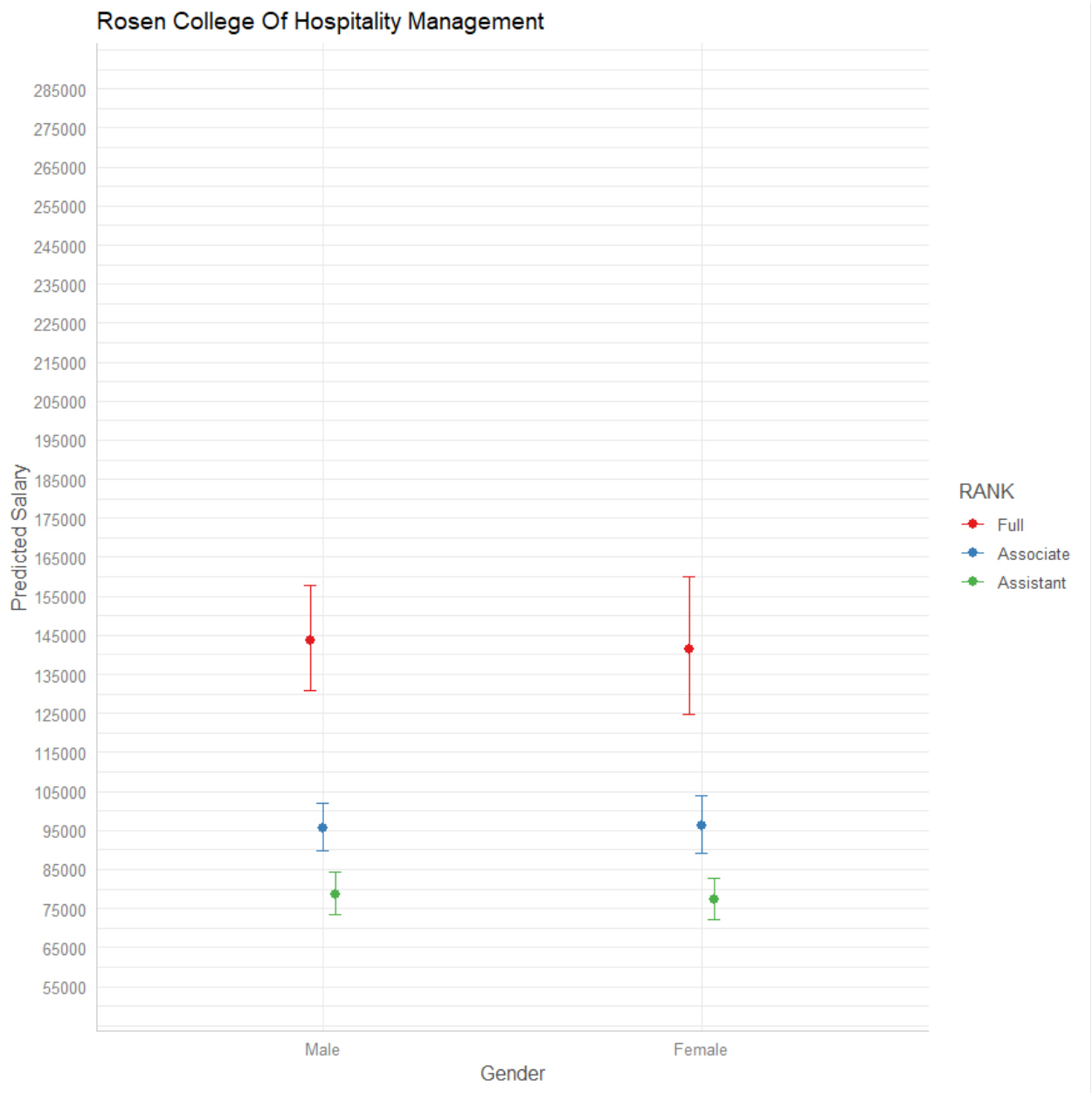
Reference groups: Gender: Male, Ethnicity: White, Rank: Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	11.92 ***	0.09	11.74 – 12.10	**<0.001**
Female	-0.02	0.04	-0.11 – 0.07	0.691
Asian	0.06	0.03	-0.01 – 0.13	0.108
International	-0.00	0.08	-0.17 – 0.16	0.996
Underrepresented Minority	0.09	0.04	-0.00 – 0.17	0.052
Total Years at UCF	-0.00	0.00	-0.01 – 0.01	0.923
Total Rank Counts	-0.08 *	0.03	-0.14 – -0.02	**0.015**
Awards	-0.07 **	0.02	-0.11 – -0.02	**0.004**
Merits-ADI	0.13 ***	0.03	0.06 – 0.19	**0.001**
MERITS-OTHER	0.03	0.02	-0.01 – 0.07	0.126
Paid Leave	-0.01	0.02	-0.04 – 0.03	0.773
Associate Prof.	-0.41 ***	0.06	-0.52 – -0.29	**<0.001**
Assistant Prof.	-0.60 ***	0.07	-0.74 – -0.47	**<0.001**
Female*Associate Prof.	0.02	0.06	-0.09 – 0.14	0.683
Observations	40			
R^2 / R^2 adjusted	0.951 / 0.926			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- "Dot" in middle represents predicted mean of salary
- "Dashes" are the upper and lower bounds of the predicted salary mean
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	5	0	5
Associate	10	7	17
Assistant	9	9	18
Total	24	16	40

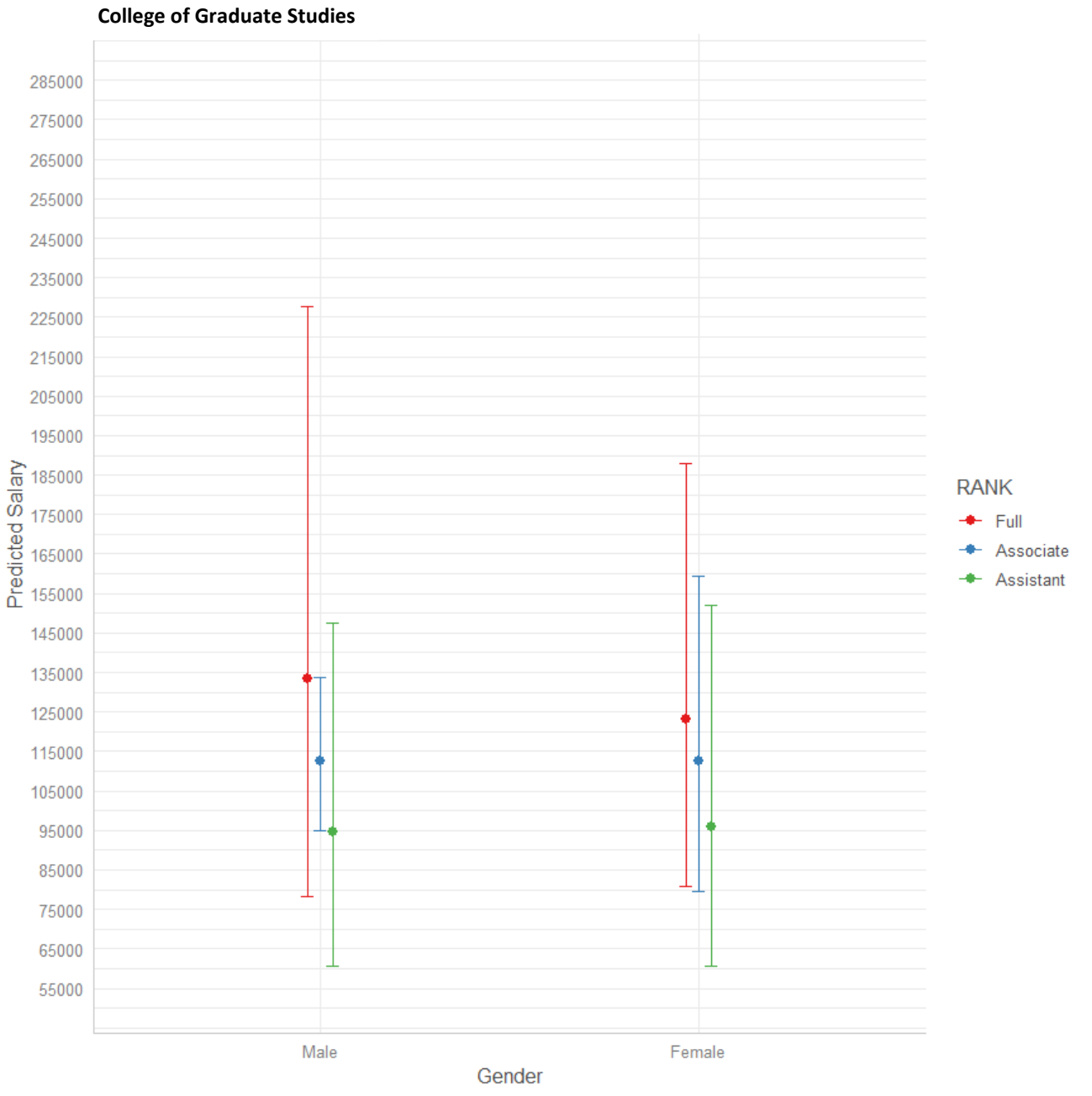
Reference groups: 1. Male, 2. White, 3. Associate Prof., 4. Assistant Prof., 5. Professor

	log(SALARY_9MO)			
Predictors	*Estimates*	*S.E.*	*95% Conf. Int*	*p*
Intercept	11.90 ***	0.68	10.28 – 13.52	**<0.001**
Female	-0.08	0.25	-0.68 – 0.52	0.765
Asian	-0.05	0.08	-0.23 – 0.13	0.567
International	0.18	0.17	-0.23 – 0.59	0.336
Total Years at UCF	0.01	0.03	-0.06 – 0.09	0.652
Total Rank Counts	-0.16	0.15	-0.51 – 0.20	0.328
Awards	0.03	0.10	-0.20 – 0.26	0.779
Merits-ADI	0.08	0.05	-0.05 – 0.20	0.192
MERITS-OTHER	-0.05	0.09	-0.27 – 0.17	0.610
Paid Leave	-0.11	0.15	-0.47 – 0.25	0.499
Associate Prof.	-0.17	0.26	-0.79 – 0.45	0.542
Assistant Prof.	-0.35	0.48	-1.48 – 0.79	0.496
Female*Associate Prof.	0.08	0.33	-0.71 – 0.87	0.823
Female*Assistant Prof.	0.10	0.27	-0.53 – 0.72	0.731
Observations	21			
R^2 / R^2 adjusted	0.816 / 0.475			

** p<0.05 ** p<0.01 *** p<0.001*

The 95% Confidence Interval (C.I.) of Predicted Salary by Gender and Rank

- “Dot” in middle represents predicted mean of salary
- “Dashes” are the upper and lower bounds of the predicted salary mean
- Vertical line is the 95% confidence interval of the predicted salary mean



Rank * Gender	Male	Female	Total
Full	6	1	7
Associate	4	1	5
Assistant	4	5	9
Total	14	7	21

APPENDIX H – DESCRIPTIVE STATISTICS II FOR NON-TENURE TRACK FACULTY (N=672)

Among Non-Tenure Faculty:

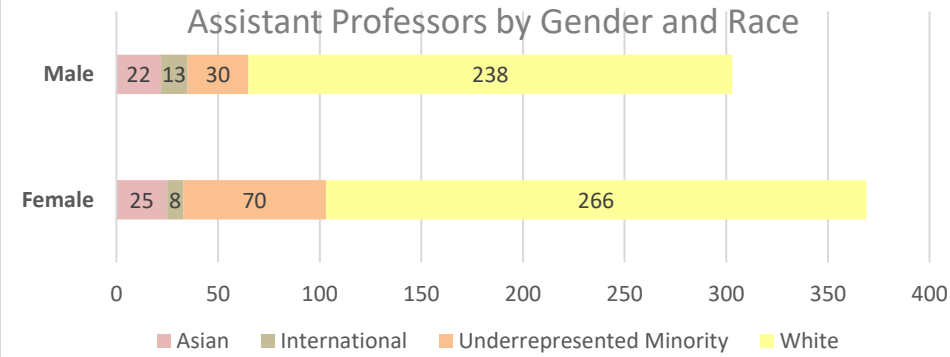
- 45% are male
- 75% are white
- Asian males have the highest median salary, followed by underrepresented male Minority.
- Underrepresented female minority has the lowest median salary, followed by International males.
- Non-Tenure Track Faculty in the College of Business Administration (CBA) have the highest median salary.
- Non-Tenure Track Faculty in the College of Arts and Humanities (CAH) have the lowest median salary

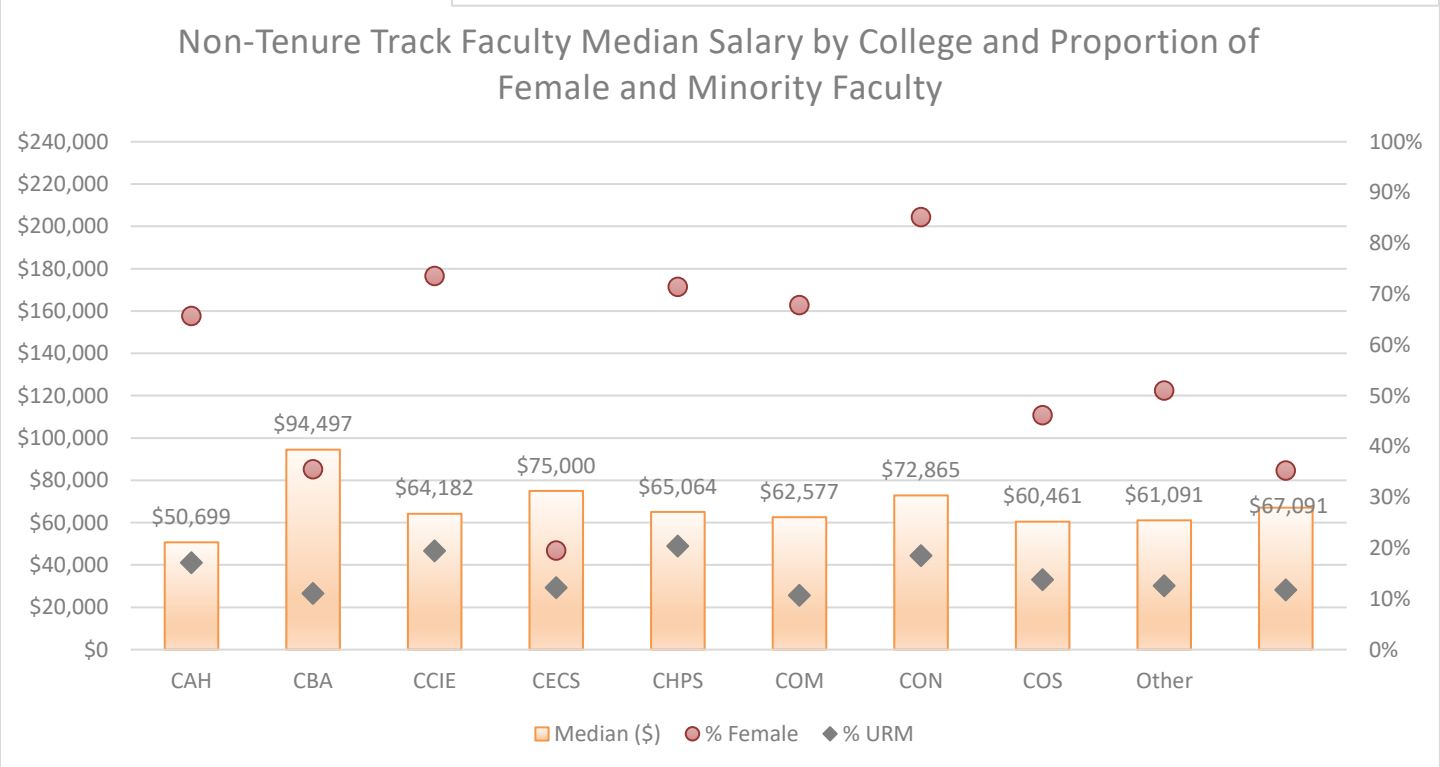
Table 2. Median Salary and Count of Non-Tenure Faculty by Gender and Ethnicity

	Female		Male		Total	
Ethnic Category	**n**	**Median**	**n**	**Median**	**n**	**Median**
Asian	25	$ 55,769	22	$ 71,206	47	$ 64,516
International	8	$ 62,272	13	$ 61,037	21	$ 61,037
Underrepresented Minority [a]	70	$ 56,889	30	$ 69,856	100	$ 61,077
White	266	$ 62,740	238	$ 65,842	504	$ 64,356
Grand Total	**369**	**$ 61,091**	**303**	**$ 66,100**	**672**	**$ 63,761**

[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed it important to be transparent in reporting potential salary inequities for all groups.





APPENDIX I – RECENT SALARY STUDIES (OUTCOMES)

Southern Methodist University (2019) - Found no statistically significant difference in salary between gender or ethnicity. Study focus: tenured/tenure-earning faculty; control variables included (log) salary, gender, rank, ethnicity, years since degree, years as tenure-line faculty, years at rank.

Colorado State University (2017) – Found statistical salary difference between full professors by gender (~5% less), and between associate professors by race (~6% less). Study focus: tenured/tenure-earning faculty; control variables included (log) salary, gender, minority, years in rank, and department. A single-year snapshot and change over time were modeled. Study conducted over 18 months.

University of Missouri (2015) – Found no consistent statistical significance for gender (0.3% - 1.5%), race (0.03% - 3.5%), or salary compression; a 15% wage gap was mostly attributed to other factors. Some statistical differences noted within specific colleges. Salary compression was reviewed. Study focus: full-time tenured/tenure-earning faculty; control variables included (log) base salary, years of experience at Missouri, highest degree, academic field/discipline, race, gender, academic rank, years of employment at Missouri, and standardized research productivity (Academic Analytics data) A single-year snapshot was used. Study conducted over one year.

University of California, Berkeley (2015) – Identified presence of salary differences, but was unable to establish cause of the differences. Study focus: ladder-rank faculty; salaries of white males extrapolated to minority (only male minorities included in relation to race) and female faculty. Control variables included (log) salary, gender, ethnicity, professional experience, field, and rank. Multi-year data were used. Study conducted over three years.

University of California, Riverside (2014) – Found no strong indication of inequity related to gender or ethnicity in either initial or current salaries. Study focus: ladder-rank faculty, with comparisons of initial salary to current salary. Control variables included gender, ethnicity, college, and selected departments. A single-year snapshot was used. Study conducted over 8 months.

APPENDIX J – FACULTY SENATE RESOLUTION 2019-2020-15

Resolution 2019-2020-15 Periodic Faculty Salary Analyses across the University of Central Florida

Whereas, salary compression may occur when salary differential between junior and senior faculty is smaller than it should be based on external market forces; and

Whereas, salary inversion occurs when salary compression, left unexamined or unadjusted over time, results in junior faculty salaries being greater than senior faculty salaries; and

Whereas, salary inequities associated with gender/race/ethnicity may occur independent of other variables; and

Whereas, salary compression, salary inversion, and salary inequities threaten the integrity of faculty ranks, morale, and retention issues for faculty at the University of Central Florida; therefore

Be it resolved that the University of Central Florida administration in consultation with the Faculty Senate shall, on a regular basis, collect and analyze both tenure-track and non-tenure-earning faculty salary data across the system to determine the extent of 1) salary compression, 2) salary inversion, and 3) salary inequities based on gender/race/ethnicity. A five-year time interval is suggested for regular periodic studies (years ending in 0 or 5).A report will be made available to all faculty shortly after each analysis is completed, ideally within 3-4 months from completion of the report.

APPENDIX K – DESCRIPTIVE STATISTICS | ADMIN FACULTY

Descriptive Characteristics: Full-time Administrative Faculty (n = 123)

Among Administration Faculty:

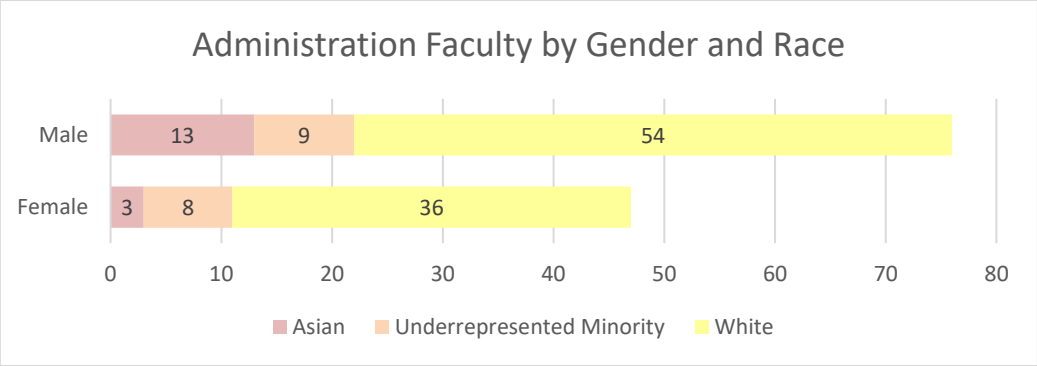
- 62% are male
- 38% are white
- Asian males have the highest median salary, followed by white males.
- Underrepresented Minority females have the lowest median salary, followed by Asian females
- Full professors from the hypothetical admin group have the highest median salary
- Assistant professors from the hypothetical admin group have the lowest median salary

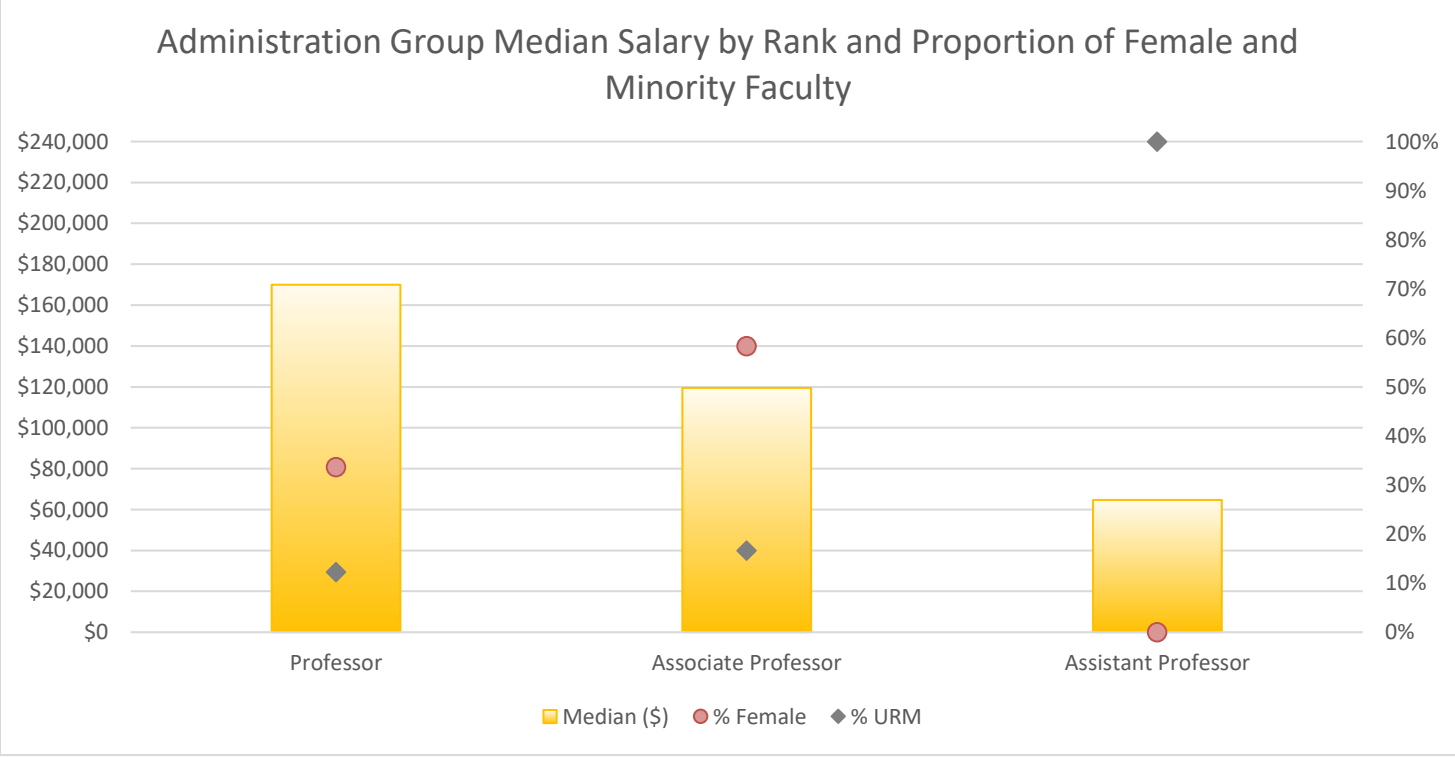
Table K1. Median Salary and Count of All Administration Faculty

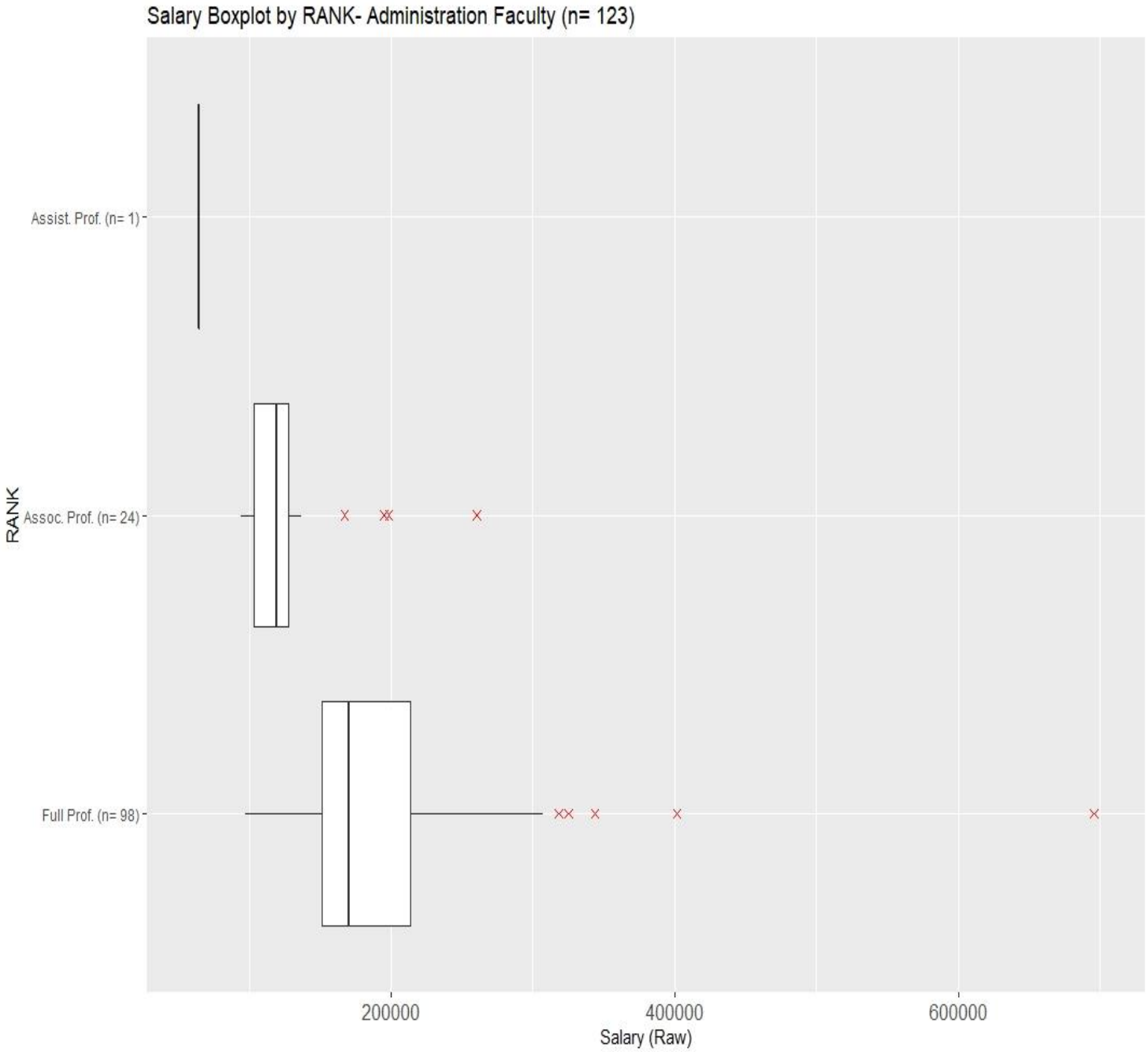
Ethnic Category	Female		Male		Total	
Row Labels	**n**	**Median**	**n**	**Median**	**n**	**Median**
Asian	3	$152,257	13	$212,813	16	$171,118
Underrepresented Minority [a]	8	$148,230	9	$145,454	17	$145,454
White	36	$152,693	54	$168,652	90	$164,509
Grand Total	**47**	**$152,257**	**76**	**$167,543**	**123**	**$161,085**

[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed the importance of being transparent in reporting potential salary inequities for all groups.






Salary Boxplot by RANK- Administration Faculty (n= 123)
RANK
Assist. Prof. (n= 1)
Assoc. Prof. (n= 24)
Full Prof. (n= 98)
200000
400000
600000
Salary (Raw)

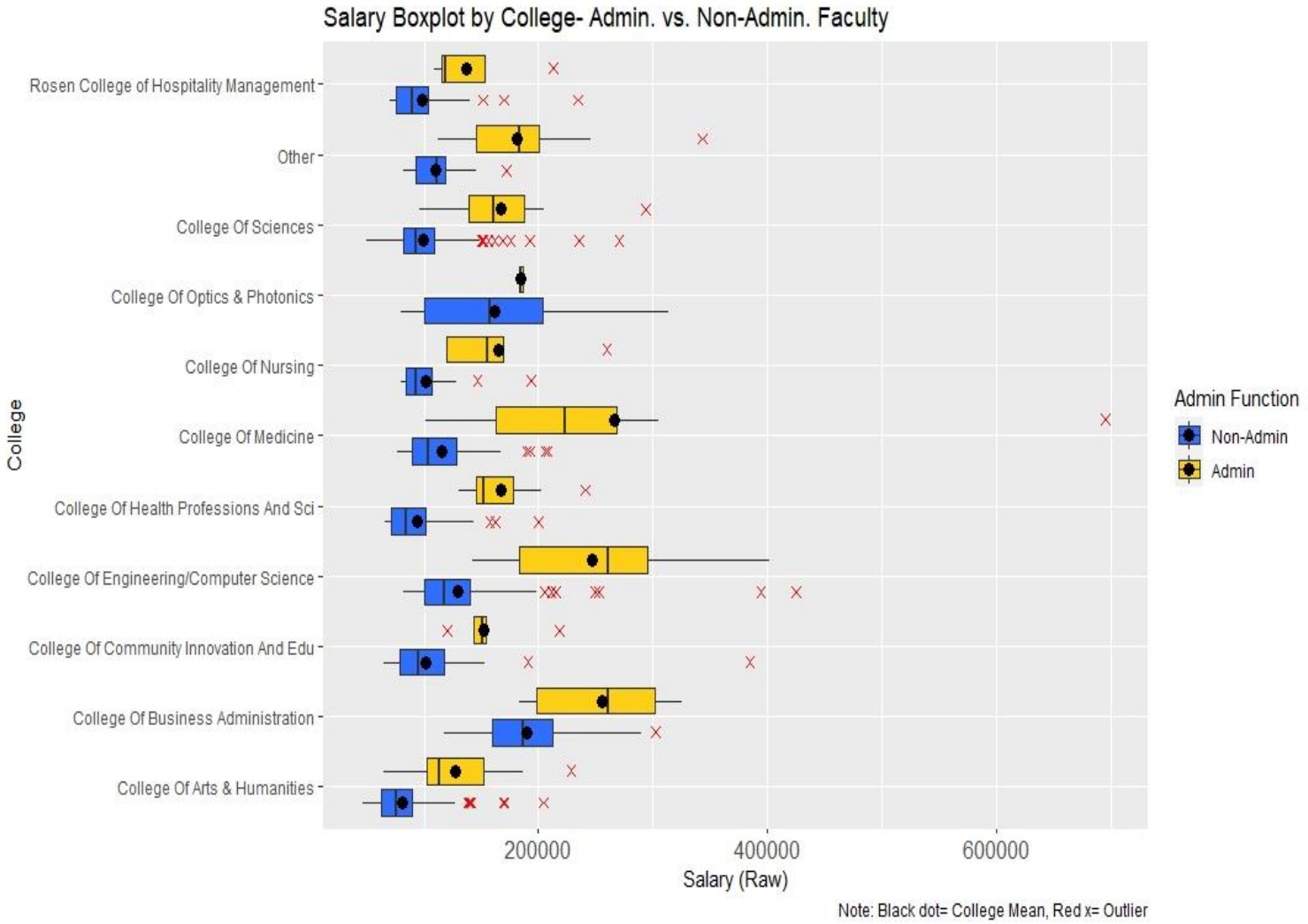


Table K2. Full-Time Tenured/Tenure-Earning Faculty Counts by College and Administrative Function

	Administrative Function		
College	**No**	**Yes**	**Total**
College Of Arts & Humanities	164	21	185
College Of Business Administration	71	9	80
College Of Community Innovation And Edu	128	13	141
College Of Engineering/Computer Science	152	12	164
College Of Health Professions And Sci	39	7	46
College Of Medicine	39	8	47
College Of Nursing	24	5	29
College Of Optics & Photonics	22	2	24
College Of Sciences	243	17	260
Other	21	21	42
Rosen College of Hospitality Management	40	8	48
Total	943	123	1066

Note. Faculty whose home department is reported as College of Medicine Clinical Sciences, Internal Medicine, and Medical Education are excluded from this analysis.

Descriptive Characteristics: Full-time Administrative Professors (n = 98)

Among Administration Full Professors:

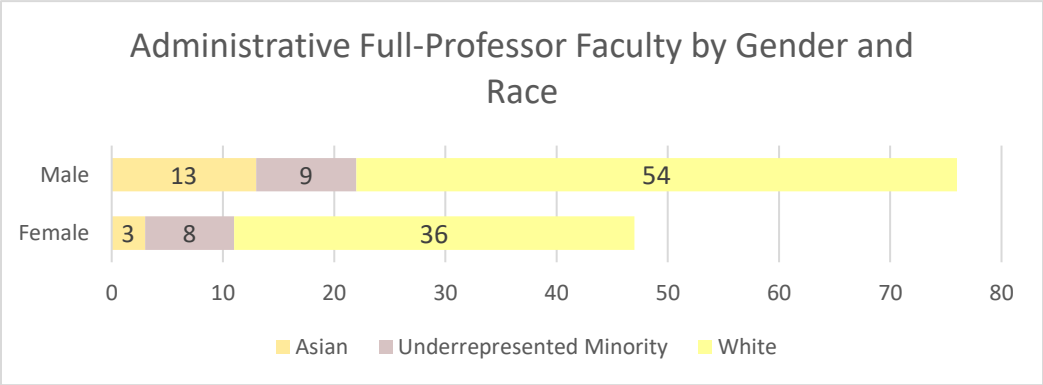
- 66% are male
- 34% are white
- Asian males have the highest median salary, followed by white males.
- Underrepresented Minority females have the lowest median salary, followed by Asian females

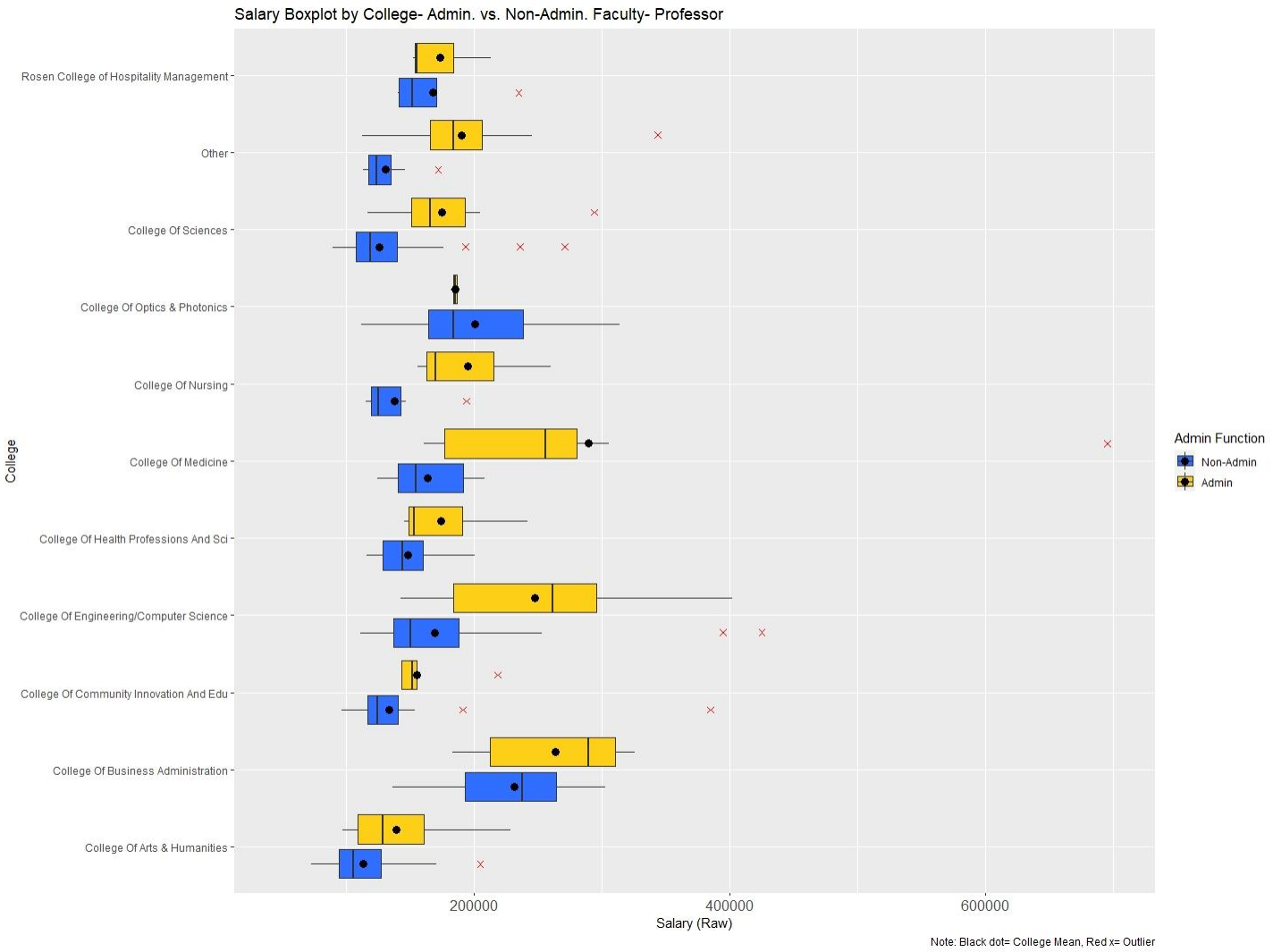
Table K2. Median Salary and Count of Professor Administration Faculty

Ethnic Category	Female		Male		Total	
Row Labels	**n**	**Median**	**n**	**Median**	**n**	**Median**
Asian	2	$153,706	12	$239,725	14	$193.578
Underrepresented Minority [a]	5	$151,367	7	$154,899	12	$153,133
White	26	$172,444	46	$182,546	72	$178,461
Grand Total	**33**	**$159,153**	**65**	**$181,858**	**98**	**$169,968**

[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed the importance of being transparent in reporting potential salary inequities for all groups.




Salary Boxplot by College- Admin. vs. Non-Admin. Faculty- Professor
Rosen College of Hospitality Management
Other
College Of Sciences
College Of Optics & Photonics
College Of Nursing
College Of Medicine
College Of Health Professions And Sci
College Of Engineering/Computer Science
College Of Community Innovation And Edu
College Of Business Administration
College Of Arts & Humanities
College
200000
400000
600000
Salary (Raw)
Admin Function
Non-Admin
Admin
Note: Black dot= College Mean, Red x= Outlier

Descriptive Characteristics: Full-time Administrative Associate Professors (n = 24)

Among Administration Full Professors:

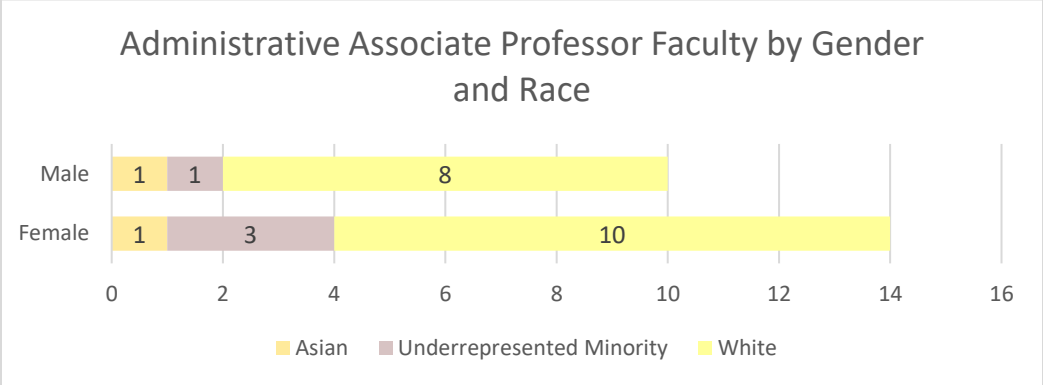
- 58% are male
- 42% are white
- Underrepresented Minority females have the highest median salary, followed by white males.
- Asian females have the lowest median salary, followed by Asian males

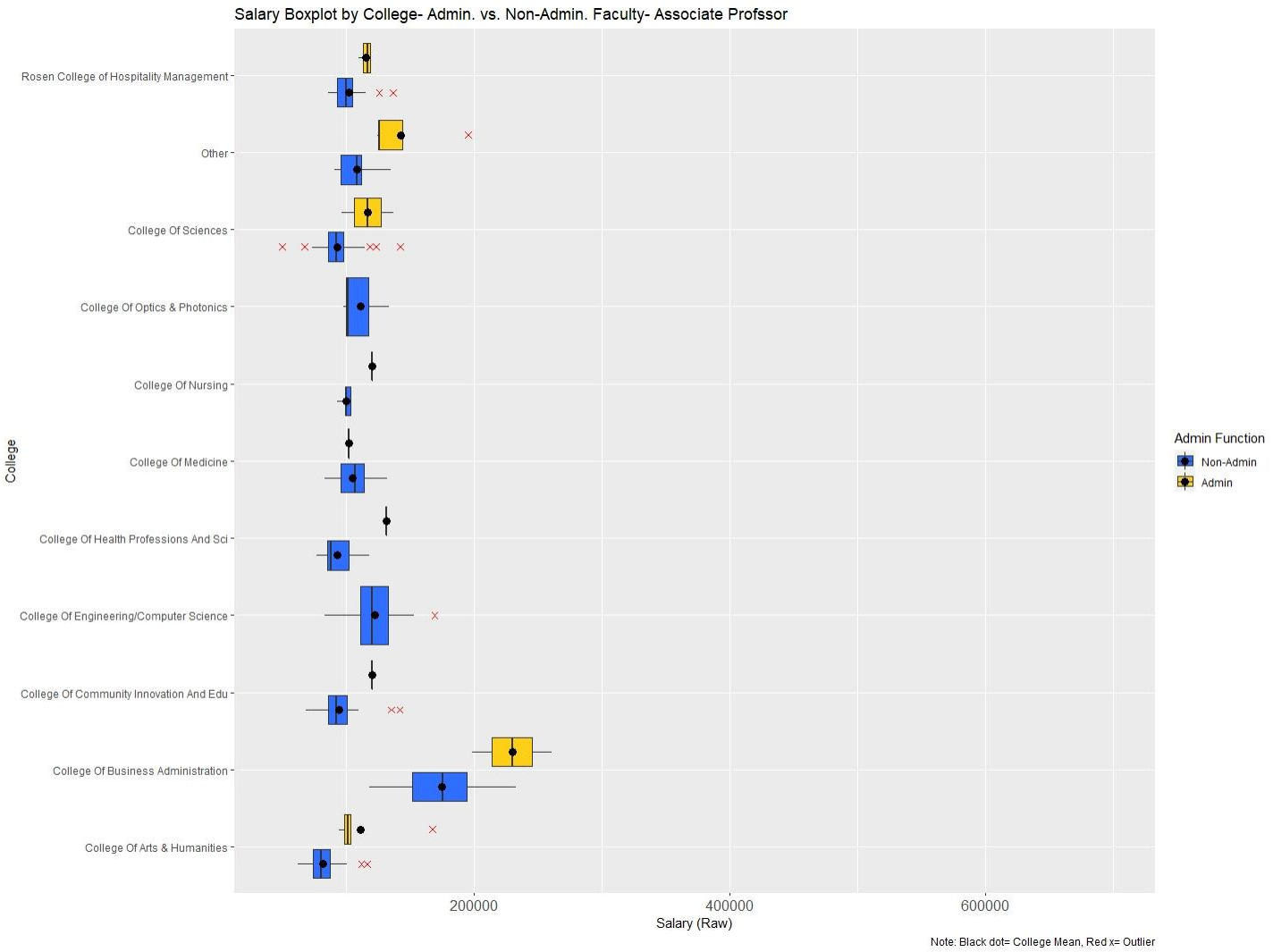
Table K3. Median Salary and Count of Associate Professor Administration Faculty

Ethnic Category	Female		Male		Total	
Row Labels	**n**	**Median**	**n**	**Median**	**n**	**Median**
Asian	1	$96,046	1	$113,163	2	$104,604
Underrepresented Minority [a]	3	$130,895	1	$119,534	4	$125,215
White	10	$117,260	8	$130,800	18	$119,777
Grand Total	**14**	**$117,260**	**10**	**$124,347**	**24**	**$119,501**

[a] includes those identifying as Black/African American, Hispanic or Latino, American Indian, Alaska Native, or multi-racial

NOTE: Although conventionally, only cells with counts of 5 or more are displayed, small cell counts have been provided because (a) salary data is public in the state of Florida and (b) the committee deemed the importance of being transparent in reporting potential salary inequities for all groups.




Salary Boxplot by College- Admin. vs. Non-Admin. Faculty- Associate Profssor
Rosen College of Hospitality Management
Other
College Of Sciences
College Of Optics & Photonics
College Of Nursing
College Of Medicine
College Of Health Professions And Sci
College Of Engineering/Computer Science
College Of Community Innovation And Edu
College Of Business Administration
College Of Arts & Humanities
College
200000
400000
600000
Salary (Raw)
Admin Function
Non-Admin
Admin
Note: Black dot= College Mean, Red x= Outlier

Model K1. Regression Result For Full-Time Tenured/Tenure Earning Faculty Excluding College of Business Administration

(1. Reference= Male. 2. Reference= White. 3. Reference= No. 4. Reference= College of Arts and Humanities)

	Log of Adjusted 9 Month Salary		
	Faculty Rank		
	Full Professor	Associate Professor	Assistant Professor
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Female[1]	0.002 (0.033)	-0.008 (0.017)	0.002 (0.015)
Race/ Ethnicity[2]			
Asian	-0.066* (0.033)	0.026 (0.022)	0.034 (0.019)
International	0.018 (0.206)	0.062 (0.063)	0.022 (0.021)
Underrepresented Minority	0.008 (0.046)	-0.004 (0.029)	0.017 (0.021)
Admin Function[3]	0.196*** (0.028)	0.186*** (0.029)	0.069 (0.092)
Total Faculty Years at UCF	-0.007** (0.002)	-0.007*** (0.002)	0.003 (0.002)
Number of Ranks Held at UCF	-0.141*** (0.015)	-0.060*** (0.014)	-0.003 (0.027)
College[4]			
College of Comm Inno & Educ	0.120** (0.041)	0.124*** (0.022)	0.210*** (0.019)
College of Eng/ Comp Science	0.300*** (0.044)	0.342*** (0.027)	0.507*** (0.019)
College of Health Prof & Sci	0.167* (0.066)	0.112** (0.035)	0.207*** (0.024)
College of Medicine	0.303*** (0.060)	0.187*** (0.034)	0.363*** (0.028)
College of Nursing	0.129 (0.078)	0.175*** (0.045)	0.337*** (0.029)
College of Optics and Photonics	0.428*** (0.061)	0.291*** (0.073)	0.353*** (0.043)
College of Sciences	0.110** (0.037)	0.105*** (0.019)	0.287*** (0.016)
Other College	0.162** (0.054)	0.219*** (0.046)	0.461*** (0.033)
Rosen College of Hospitality Managmnt	0.289*** (0.079)	0.168*** (0.030)	0.243*** (0.025)
Awards	0.035*** (0.007)	0.056*** (0.007)	0.050** (0.016)
Merit ADI	0.066*** (0.009)	0.046*** (0.008)	-0.002 (0.015)
Merit OTHER	-0.005 (0.010)	0.010 (0.007)	-0.0004 (0.012)
Paid Leave	0.001 (0.012)	-0.006 (0.007)	-0.012 (0.010)
Female x Asian	-0.036 (0.075)	-0.034 (0.038)	-0.033 (0.029)
Female x International	NA	-0.044 (0.093)	0.006 (0.036)
Female x Underrep Minority	-0.038 (0.078)	0.021 (0.039)	-0.001 (0.032)
Constant	11.907*** (0.051)	11.393*** (0.034)	10.986*** (0.031)
Observations	347	344	295
R^2	0.597	0.640	0.801
Adjusted R^2	0.570	0.614	0.784
Residual Std. Error	0.203 (df = 324)	0.118 (df = 320)	0.088 (df = 271)
F Statistic	21.849*** (df = 22; 324)	24.760*** (df = 23; 320)	47.487*** (df = 23; 271)

Note: The sample is based on all full-time tenured/ tenure-earning faculty in Fall 2020. Faculty from three MD programs (including College of Medicine Clinical Sciences, Internal Medicine, and Medical Education*) are also excluded.*

*p<0.05; **p<0.01; ***p<0.001

Model K2. Regression Result For Full-Time Tenured/Tenure Earning Faculty Excluding College of Business Administration and Administrative Roles

(*1. Reference= White. 2. Reference= College of Arts and Humanities.)*

	Log of Adjusted 9 Month Salary		
	Faculty Rank		
	Full Professor	Associate Professor	Assistant Professor
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Female	-0.021 (0.037)	-0.0002 (0.017)	0.002 (0.015)
Race/ Ethnicity[1]			
Asian	-0.065 (0.033)	0.029 (0.022)	0.034 (0.019)
International	-0.034 (0.189)	0.066 (0.062)	0.022 (0.021)
Underrepresented Minority	0.002 (0.050)	0.001 (0.029)	0.017 (0.021)
Total Faculty Years at UCF	-0.009*** (0.002)	-0.006*** (0.002)	0.003 (0.002)
Number of Ranks Held at UCF	-0.153*** (0.015)	-0.064*** (0.014)	-0.003 (0.027)
College[2]			
College of Comm Inno & Educ	0.105* (0.043)	0.122*** (0.023)	0.210*** (0.019)
College of Eng/ Comp Science	0.278*** (0.046)	0.349*** (0.027)	0.507*** (0.019)
College of Health Prof & Science	0.133 (0.081)	0.111** (0.036)	0.207*** (0.024)
College of Medicine	0.232*** (0.070)	0.198*** (0.035)	0.363*** (0.028)
College of Nursing	0.128 (0.087)	0.190*** (0.051)	0.337*** (0.029)
College of Optics and Photonics	0.427*** (0.062)	0.297*** (0.072)	0.353*** (0.043)
College of Sciences	0.081* (0.039)	0.107*** (0.019)	0.287*** (0.016)
Other College	0.088 (0.085)	0.222*** (0.058)	0.461*** (0.033)
Rosen College of Hospitality Management	0.320*** (0.090)	0.193*** (0.033)	0.243*** (0.025)
Awards	0.036*** (0.007)	0.061*** (0.007)	0.050** (0.016)
Merit ADI	0.051*** (0.011)	0.036*** (0.009)	-0.002 (0.015)
Merit OTHER	-0.005 (0.011)	0.005 (0.007)	-0.0004 (0.012)
Paid Leave	0.009 (0.012)	-0.006 (0.008)	-0.012 (0.010)
Female x Asian	-0.020 (0.077)	-0.039 (0.038)	-0.033 (0.029)
Female x International	NA	-0.060 (0.092)	0.006 (0.036)
Female x Underrepresented Minority	0.035 (0.091)	0.003 (0.040)	-0.001 (0.032)
Constant	12.008*** (0.055)	11.402*** (0.035)	10.986*** (0.031)
Observations	256	322	294
R^2	0.578	0.622	0.800
Adjusted R^2	0.541	0.594	0.784
Residual Std. Error	0.185 (df = 234)	0.116 (df = 299)	0.088 (df = 271)
F Statistic	15.286*** (df = 21; 234)	22.321*** (df = 22; 299)	49.425*** (df = 22; 271)

NOTE: *The sample is based on all full-time tenured/ tenure-earning faculty in Fall 2020. Faculty from three MD programs (including* College of Medicine Clinical Sciences, Internal Medicine, and Medical Education*) are also excluded.*

*p<0.05; **p<0.01; ***p<0.001

Model K3. Regression Result with Full-Time Tenured/ Tenure-Earning Faculty Controlling for Admin Function

(1. Reference= Male. 2. Reference= White. 3. Reference= No Admin. Function. 4. Reference= College of Arts and Humanities.)

	Log of Adjusted 9 Month Salary		
	Faculty Rank		
	Full Professor Coefficient (SE)	Associate Professor Coefficient (SE)	Assistant Professor Coefficient (SE)
Female[1]	-0.005 (0.031)	-0.007 (0.017)	0.001 (0.016)
Race/ Ethnicity[2]			
Asian	-0.048 (0.031)	0.009 (0.022)	0.021 (0.020)
International	0.012 (0.207)	0.053 (0.065)	0.014 (0.022)
Underrepresented Minority	-0.014 (0.044)	-0.024 (0.029)	0.023 (0.022)
Admin Function[3]	0.197*** (0.027)	0.193*** (0.029)	0.064 (0.100)
Total Faculty Years at UCF	-0.007** (0.002)	-0.010*** (0.002)	0.002 (0.002)
Number of Ranks Held at UCF	-0.137*** (0.014)	-0.049*** (0.014)	-0.012 (0.029)
College[4]			
College of Business Administration	0.596*** (0.052)	0.724*** (0.026)	1.030*** (0.028)
College of Comm Inno and Educ	0.121** (0.041)	0.121*** (0.023)	0.210*** (0.021)
College of Eng/ Comp Science	0.296*** (0.044)	0.342*** (0.028)	0.512*** (0.020)
College of Health Prof and Science	0.169* (0.066)	0.107** (0.037)	0.207*** (0.026)
College of Medicine	0.306*** (0.061)	0.185*** (0.035)	0.366*** (0.031)
College of Nursing	0.132 (0.078)	0.168*** (0.047)	0.341*** (0.031)
College of Optics and Photonics	0.428*** (0.061)	0.287*** (0.076)	0.361*** (0.046)
College of Sciences	0.110** (0.037)	0.103*** (0.020)	0.288*** (0.017)
Other College	0.162** (0.054)	0.210*** (0.048)	0.468*** (0.036)
Rosen College of Hospitality Mgmt	0.289*** (0.079)	0.158*** (0.032)	0.243*** (0.027)
Awards	0.034*** (0.006)	0.052*** (0.007)	0.052** (0.017)
Merit ADI	0.064*** (0.009)	0.049*** (0.008)	-0.002 (0.016)
Merit OTHER	-0.007 (0.010)	0.011 (0.007)	0.003 (0.012)
Paid Leave	0.003 (0.012)	-0.002 (0.007)	-0.005 (0.011)
Female x Asian	-0.006 (0.072)	0.007 (0.037)	-0.027 (0.030)
Female x International	NA	-0.040 (0.098)	0.011 (0.038)
Female x Underrepresented Minority	-0.010 (0.076)	0.035 (0.039)	-0.007 (0.034)
Constant	11.910*** (0.050)	11.401*** (0.034)	10.996*** (0.033)
Observations	375	381	310
R^2	0.637	0.788	0.865
Adjusted R^2	0.613	0.774	0.854
Residual Std. Error	0.204 (df = 351)	0.123 (df = 356)	0.096 (df = 285)
F Statistic	26.786*** (df = 23; 351)	55.133*** (df = 24; 356)	76.024*** (df = 24; 285)

NOTE: *The sample is based on all full-time tenured/ tenure-earning faculty in Fall 2020. Faculty from three MD programs (including* College of Medicine Clinical Sciences, Internal Medicine, and Medical Education*) are also excluded.*

*p<0.05; **p<0.01; ***p<0.001

Model K4. Regression Results with Full-Time Tenured/ Tenure-Earning Faculty and a Hypothetical Admin College

(*1. Reference= Male. 2. Reference= White. 3. Reference=Hypothetical Admin College)*

	Log of Adjusted 9 Month Salary		
	Faculty Rank		
	Full Professor	Associate Professor	Assistant Professor
Input Variables	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Female[1]	-0.030 (0.033)	-0.015 (0.018)	0.001 (0.016)
Race/Ethnicity[2]			
Asian	-0.009 (0.033)	0.005 (0.023)	0.021 (0.020)
International	0.022 (0.221)	0.051 (0.070)	0.014 (0.022)
Underrepresented Minority	-0.029 (0.046)	-0.029 (0.031)	0.023 (0.022)
Total Faculty Years at UCF	-0.009*** (0.002)	-0.009*** (0.002)	0.002 (0.002)
Number of Ranks Held at UCF	-0.151*** (0.015)	-0.050*** (0.015)	-0.012 (0.029)
College[3]			
College of Arts and Humanities	-0.342*** (0.046)	-0.365*** (0.033)	-0.064 (0.100)
College of Business Administration	0.218*** (0.054)	0.358*** (0.037)	0.966*** (0.102)
College of Comm Innon and Educ	-0.224*** (0.043)	-0.240*** (0.034)	0.146 (0.100)
College of Eng/ Comp Science	-0.115** (0.042)	-0.020 (0.036)	0.448*** (0.099)
College of Health Prof and Science	-0.184* (0.087)	-0.261*** (0.047)	0.143 (0.101)
College of Medicine	-0.167* (0.072)	-0.173*** (0.044)	0.302** (0.103)
College of Nursing	-0.200* (0.094)	-0.175** (0.062)	0.277** (0.103)
College of Optics and Photonics	0.057 (0.065)	-0.078 (0.085)	0.297** (0.108)
College of Sciences	-0.283*** (0.037)	-0.259*** (0.032)	0.225* (0.099)
Other	-0.357*** (0.089)	-0.168* (0.067)	0.404*** (0.103)
Rosen College of Hosp Mgmt	-0.034 (0.102)	-0.181*** (0.044)	0.179 (0.101)
Awards	0.032*** (0.007)	0.054*** (0.007)	0.052** (0.017)
Merit ADI	0.073*** (0.009)	0.049*** (0.009)	-0.002 (0.016)
Merit OTHER	0.002 (0.011)	0.011 (0.007)	0.003 (0.012)
Paid Leave	-0.003 (0.013)	-0.002 (0.008)	-0.005 (0.011)
Female x Asian	-0.026 (0.077)	0.008 (0.039)	-0.027 (0.030)
Female x International	NA	-0.035 (0.104)	0.011 (0.038)
Female x Underrep Minority	0.004 (0.082)	0.035 (0.042)	-0.007 (0.034)
Constant	12.316*** (0.040)	11.766*** (0.042)	11.060*** (0.104)
Observations	375	381	310
R^2	0.588	0.758	0.865
Adjusted R^2	0.561	0.742	0.854
Residual Std. Error	0.218 (df = 351)	0.132 (df = 356)	0.096 (df = 285)
F Statistic	21.794*** (df = 23; 351)	46.557*** (df = 24; 356)	76.024*** (df = 24; 285)

NOTE: *The sample is based on all full-time tenured/ tenure-earning faculty in Fall 2020. Faculty from three MD programs (including* College of Medicine Clinical Sciences, Internal Medicine, and Medical Education*) are also excluded.*

*p<0.05; **p<0.01; ***p<0.001

APPENDIX M – WORKING GROUP MEMBERSHIP

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