2016 FACULTY SALARY EQUITY ANALYSIS

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

OFFICE OF THE EXECUTIVE VICE CHANCELLOR &

THE FACULTY SALARY EQUITY STUDY COMMITTEE

APRIL 2017

INTRODUCTION

This report contains the results of UC Santa Barbara's annual faculty salary equity analysis. The results presented here reflect a new set of statistical models in addition to the AAUP methodology employed in previous reports. This analysis will focus on 2016 salary data; however, since we are employing a new set of statistical models we also include a re-analysis of 2014 and 2015 salary data. The salary equity analysis and reports are part of the University's efforts to ensure fairness in the salaries of faculty and to promote an inclusive and productive academic environment.

EXECUTIVE SUMMARY

The analysis herein shows that the observed gender and race gaps in UCSB faculty salaries are almost entirely attributable to (1) less advanced careers (i.e., shorter time elapsed since PhD) of women and underrepresented minority faculty members, and (2) underrepresentation of women and URM faculty in divisions and fields with higher market salaries (e.g., engineering, economics, physical and life sciences). Once these factors are accounted for, statistical models which take into account gender, ethnicity, experience and college/division suggest a gender salary gap of about 2 percent less per year for women compared to white men, on average, and a racial salary gap of about 4 percent less per year for URM than white men. In statistical models which additionally take into account faculty rank, these differences nearly disappear.

SALARY DATA AND FACULTY DEMOGRAPHIC OVERVIEW

The 2016 salary equity study at UC Santa Barbara is based upon salary and demographic data provided by the UCSB Academic Personnel Office for ladder-rank faculty as of July 1, 2016. The salary data is the annual 9-month salary and does not include any summer salary, administrative stipends or other temporary supplements. In all, there are 853 faculty included in the analysis. Because faculty members in Economics and the College of Engineering are on the same salary scale (the Business/Economics/Engineering scale) they are grouped together throughout this analysis while the Division of Social Sciences is shown without the Economics Department faculty.

Overall, 295 of the 853 faculty are women (35%). Figure A in the report appendix shows the percent of female and male faculty in each discipline area. There appear to be comparably high percentages of women in the Social Sciences, excluding Economics (54%) and the Gevirtz Graduate School of Education (GSED, 55%). The Humanities and Fine Arts Division (HUFA) shows a roughly gender balanced percentage of 48% women, while there are significantly smaller percentages of women in the remaining fields. With respect to ethnicity[1] (see Appendix, Figure B), under-represented minority (URM) faculty

[1] For this analysis we group Native American, African American and Chican@/Latin@ faculty into a category collectively referred to as under-represented minority (URM). All faculty of East Asian and South Asian origin are placed into a single category labeled Asian, while faculty of European ancestry or self-identified as White are grouped in the White category. All other faculty, (largely of unknown ethnicity) are grouped in a category labeled other or unknown.

comprise 11% of all faculty, 12% are Asian, 72% are white, and 5% are of other or unknown ethnicity. The Division of Social Sciences, excluding Economics has the highest share of URM faculty at 25%.

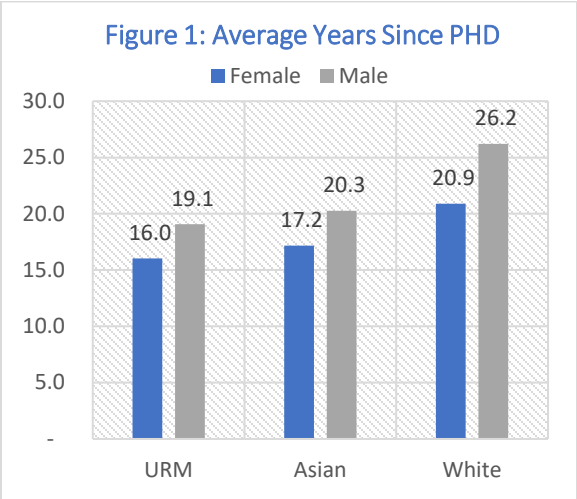
Average salaries and the average years since Ph.D. (a measure of experience) are summarized for various groups of faculty in Table 1 below.

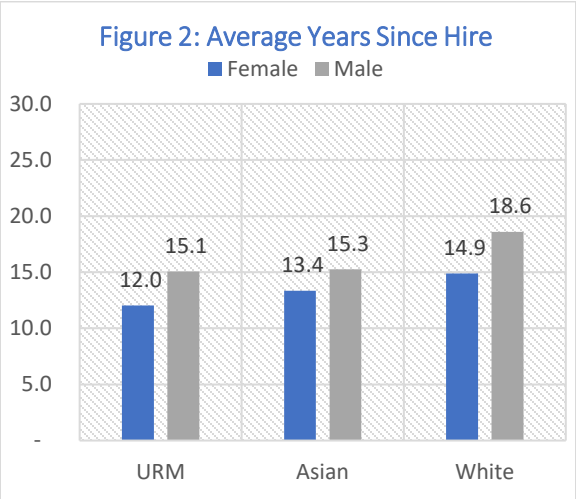
Table 1: Average Faculty Salaries by Gender and Ethnicity

Demographic Group	Average Salary	Average Years Since Ph.D.
Gender = Male	$156,660	24.2
Ethnicity = White	$152,907	24.5
Ethnicity = Asian	$144,143	19.2
Gender = Female	$127,889	19.1
Ethnicity = URM	$120,524	17.7

The data in Table 1 are sorted by highest to lowest average salary, and this nearly places average years since Ph.D. in descending order indicating a correlation between the two variables. The group with the highest average salary (White faculty members) has the second highest average years since Ph.D., while the demographic group with the lowest average salary (under-represented minorities) is the group with the lowest average years since Ph.D. Average salary, average years since Ph.D. and average years since hire by gender and college/division can be found in Appendix, Table A.

Figures 1 and 2 below show the average years since Ph.D. and the average years since hire by ethnicity (excluding "other" ethnicity) and gender.





In both figures above men have higher averages than women within the same ethnic group. Viewing the averages across ethnicity categories we see a clear pattern, no matter the gender, that URM faculty have the lowest averages, Asian faculty are higher than URM, followed by White faculty members with the highest averages. Figures C, D, E and F in the Appendix contain detailed distributions of years since Ph.D. and years since hire by gender and ethnicity. Clearly, average years since Ph.D. (experience) and average years since hire will be important factors to consider when parsing salary differences among the faculty.

METHODOLOGY

Like previous UCSB pay equity studies, this study employs linear regression analysis to determine the magnitude of salary differences between white male faculty compared to women and ethnic minorities. This technique allows us to statistically "control" for important factors that are related to an individual faculty member's salary level and to determine whether there is evidence of salary inequities between the groups. It is important to note that the statistical techniques used here cannot provide proof that salary inequities exist; not all factors known to affect salaries are included in these models. Future studies may include additional factors known to influence salary (e.g., retention offers and research productivity) if this data can be obtained.

Our methodology continues to be consistent with the methodology recommended by the American Association of University Professors.[2] Beginning this year we employ two sets of statistical methodologies. First, we examine salary data for the campus as a whole and include all faculty members in the same analysis. We refer to this set of models as the "campus" models. Second, as in previous salary equity reports, we use predictive models based on white male faculty members to predict the salary levels of women and ethnic minorities. We refer to these models as the "white male" models.

We use the log[3] of salary as the dependent variable in all models, as the distribution of salary across all faculty members is skewed with a long right-hand tail.

Figure 3: Salary Distribution

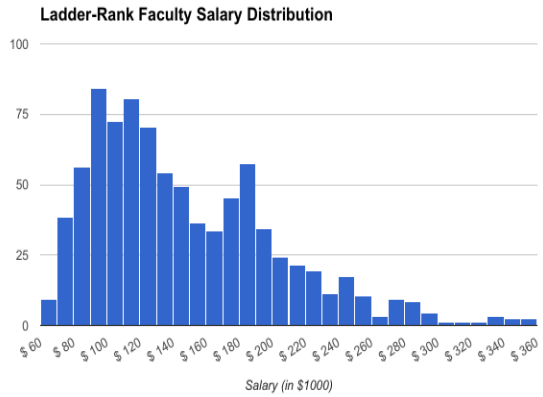
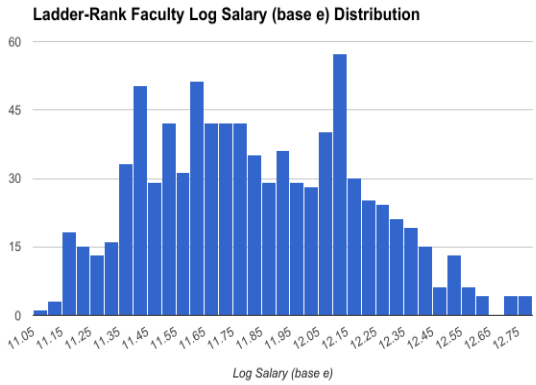


Figure 4: Log Salary Distribution



This specification allows the coefficients for independent variables to be interpreted as proportional, rather than absolute, effects on salary. The histograms contained in Figures 3 and 4 illustrate the

[2] Haignere, L. (2002). *Paychecks: A Guide to Conducting Salary-Equity Studies for Higher Education Faculty. Second Edition*. American Association of University Professions, Washington D.C. 20005.
[3] Throughout this document, the use of "log" refers to the natural logarithm (base *e*).

distribution of faculty salary before and after the log transformation. The log salary histogram displays a more normal, bell-shaped distribution.

The "campus" linear regression models are a set of 4 models that regress log salary on a set of predictors that allow us to see the net average salary differences for various demographic groups relative to white males while holding constant other factors. The four models can be characterized as follows:

Model 1: $Ln(Salary_i) = \alpha + \beta_1 G_i + \beta_2 E_i + \varepsilon_i$ [Demographics Only]
Model 2: $Ln(Salary_i) = \alpha + \beta_1 G_i + \beta_2 E_i + \beta_3 D_i + \beta_4 T_i + \varepsilon_i$ [Demos + Experience]
Model 3: $Ln(Salary_i) = \alpha + \beta_1 G_i + \beta_2 E_i + \beta_3 D_i + \beta_4 T_i + \beta_5 C_i + \varepsilon_i$ [Demos + Exper. + Division]
Model 4: $Ln(Salary_i) = \alpha + \beta_1 G_i + \beta_2 E_i + \beta_3 D_i + \beta_4 T_i + \beta_5 C_i + \beta_6 R_i + \varepsilon_i$ [Demos + Exper. + Div. + Rank]

Where demographic variables are: G_i is gender represented by a binary variable (female=1); and, E_i is ethnicity represented by four binary variables for each ethnicity (white is the reference category). The experience variables are: D_i years since Ph.D.; and, T_i years since hire. Division is a set of binary variables C_i for each college or division (HFA is the reference division). Rank R_i is an ordinal representation of rank and step; and, ε_i is the model disturbance term.[4]

The "white male" regression models regress log salary on D_i (year since Ph.D.) and T_i (years since hire) within each college or division. Since the models, by definition, include only white male faculty members, there is no need for gender or ethnicity terms in the models. Likewise, since the models are run separately for each division, there is no need to control for college/division. Once the regression coefficients are derived from the white male models, these coefficients are then used to predict salary for each faculty member (no matter their gender or ethnicity) within each college or division.

This predicted salary can then be compared to each faculty member's actual salary and the difference, referred to as the residual, can be examined by demographic group to determine whether there is evidence to suggest potential bias. For example, a concern might be raised if a preponderance of residuals for a group of faculty members is lower than predicted and beyond the statistical margin of error.

RESULTS I – THE "CAMPUS" MODELS

The "campus" models use data from the 2016-17, 2015-16 and 2014-15 academic years. Full statistical results for these analyses can be found in the Appendix, Tables C, D and E for each year respectively.

[4] Previous UCSB salary equity studies regression models also contained faculty member's age as a predictor of salary. We have removed age from our models after examining collinearity diagnostics which show that having both age and years since Ph.D. in the model is redundant. Age and years since Ph.D. are highly correlated at .94 (0 = no correlation and 1 = perfect correlation).

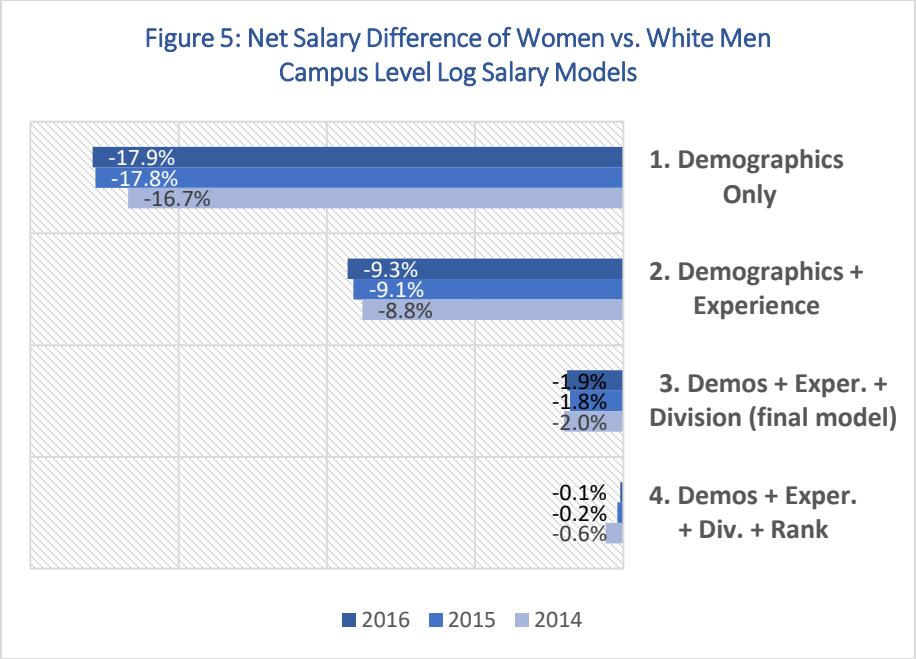


Figure 5 above shows the percent difference of average female faculty salaries compared to that of white men across the four campus level models. Model 1, where only demographic characteristics are considered, shows that female faculty had salaries approximately 17%-18% less than white men, on average, for the years examined. In Model 2, we see that adding terms for experience (years since Ph.D. and years since hire) reduces the net difference between women and white men by half. The net difference is further reduced in Model 3 when controls for college or division are introduced into the model. Here we see the net difference between women versus white men is approximately -2%, though the regression coefficients in these models are not statistically significant.

Model 4, which adds rank and step to the previous equation, almost eliminates racial and gender salary gaps. The committee notes that rank and step are determined internally through processes that are in part subjective and therefore not necessarily immune to gender or racial bias (e.g., at the department or campus level). Although further studies would be required to verify the shortcomings of Model 4, Model 3 is considered by a majority of the committee to be the preferred baseline for assessing gender and racial salary differences.

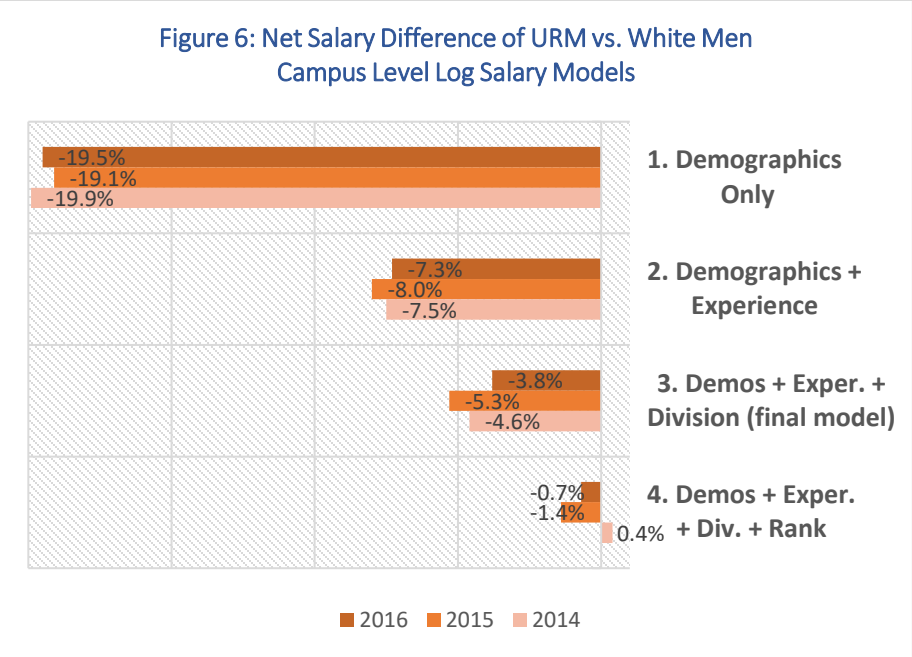
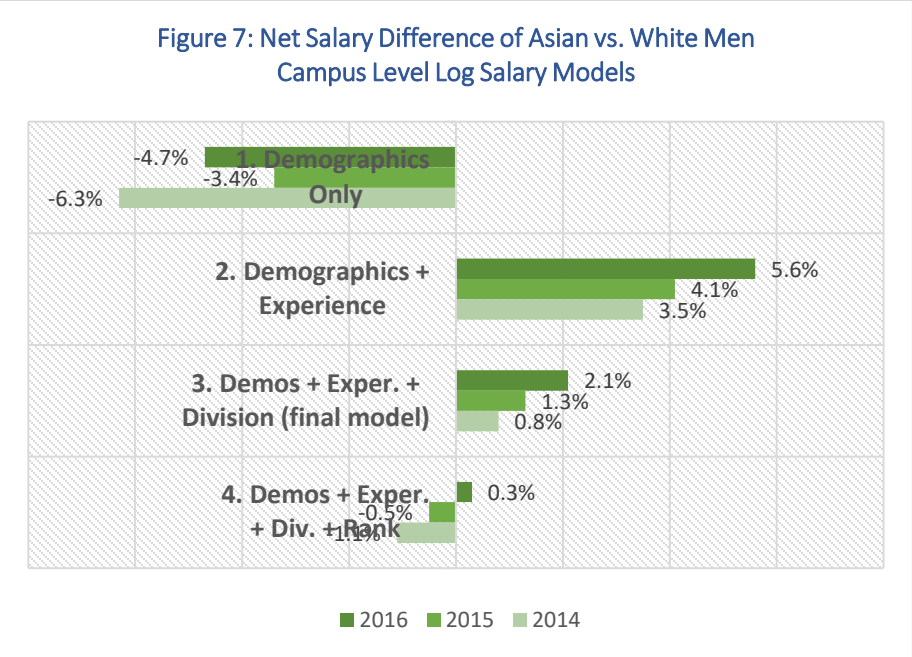


Figure 6 shows the net salary differences (in percent) for URM faculty members compared to white men. The pattern is very similar to what we see for female faculty. Large differences exist in Model 1 of 19%-20% less than white men. These differences are drastically reduced when in Model 2 when controls for experience are introduced into the model. In Model 3, with controls for college or division in place, we see a further reduction in the net difference between URM faculty and white men, but not as great a reduction as we saw for women. The Model 3 regression coefficient for URM faculty is statistically significant in 2015, but not in 2014 or 2016. In Model 4, rank-step reduces the net difference to less than -1% in 2016 and none of these coefficients are statistically significant.

Figure 7 summarizes the net differences in salary for Asian faculty versus white men. Asian faculty demonstrate the least degree of difference compared to white men in Model 1 (demographics only). The net difference in Model 1 ranges from -6.3% to -3.4% in the years examined. Adding measures for experience in Model 2 we find that Asian faculty members have salaries that range from 3.5% to 5.6% above that of white men, though these differences are reduced when controls for discipline area (college or division) are introduced. The Asian group is the only demographic group that has a relatively higher net average salary relative to white men (+2.1% for 2016) in Model 3.



In addition to allowing for the examination of demographic differences in salary, the "campus" models allow us to view net salary differences across the colleges and divisions. Model 4 in the Appendix, Tables C, D and E put into clear relief the fact that the biggest differences in salary are not attributable to demographic traits, but strongly related to the disciplinary area of faculty members.

RESULTS II – THE "WHITE MALE" MODELS

As in previous UCSB salary equity studies we employ predictive models built upon analysis of white male faculty members to predict the salary of female and minority faculty. Table 2 contains a summary of the white male regression analyses which are completed for each college or division separately.

Table 2: Regression Model Summary for White, Male Faculty in Each College or Division

2016-17 Salary Data, Dependent Variable = Log Salary

		Parameter Estimates				
Division	Number of Faculty	Intercept/ Constant	Years Since PHD	Years Since Hire	Adj. R-Sq.	Model RMSE
ENGR + ECON	95	**11.709**	**0.020**	**-0.007**	0.434	.23
SESM	14	**11.609**	**0.027**	-0.015	0.526	.28
GGSE	11	**11.273**	**0.016**	0.007	0.827	.14
HUFA	100	**11.311**	**0.021**	-0.005	0.518	.22
MLPS	158	**11.493**	**0.028**	**-0.015**	0.486	.25
SOSC no ECON	38	**11.427**	**0.021**	-0.004	0.567	.22

Note: Parameter estimates in **BOLD** are statistically significant at $p < .05$ level.

These white male regression models are reasonably predictive of salary within each college or division with R-squares ("explained variance") ranging from .434 to .827. Using the parameter estimates summarized in Table 2, a salary prediction was determined for all faculty within each college or division.

Figure 8: Scatterplot of Actual by Predicted Salary

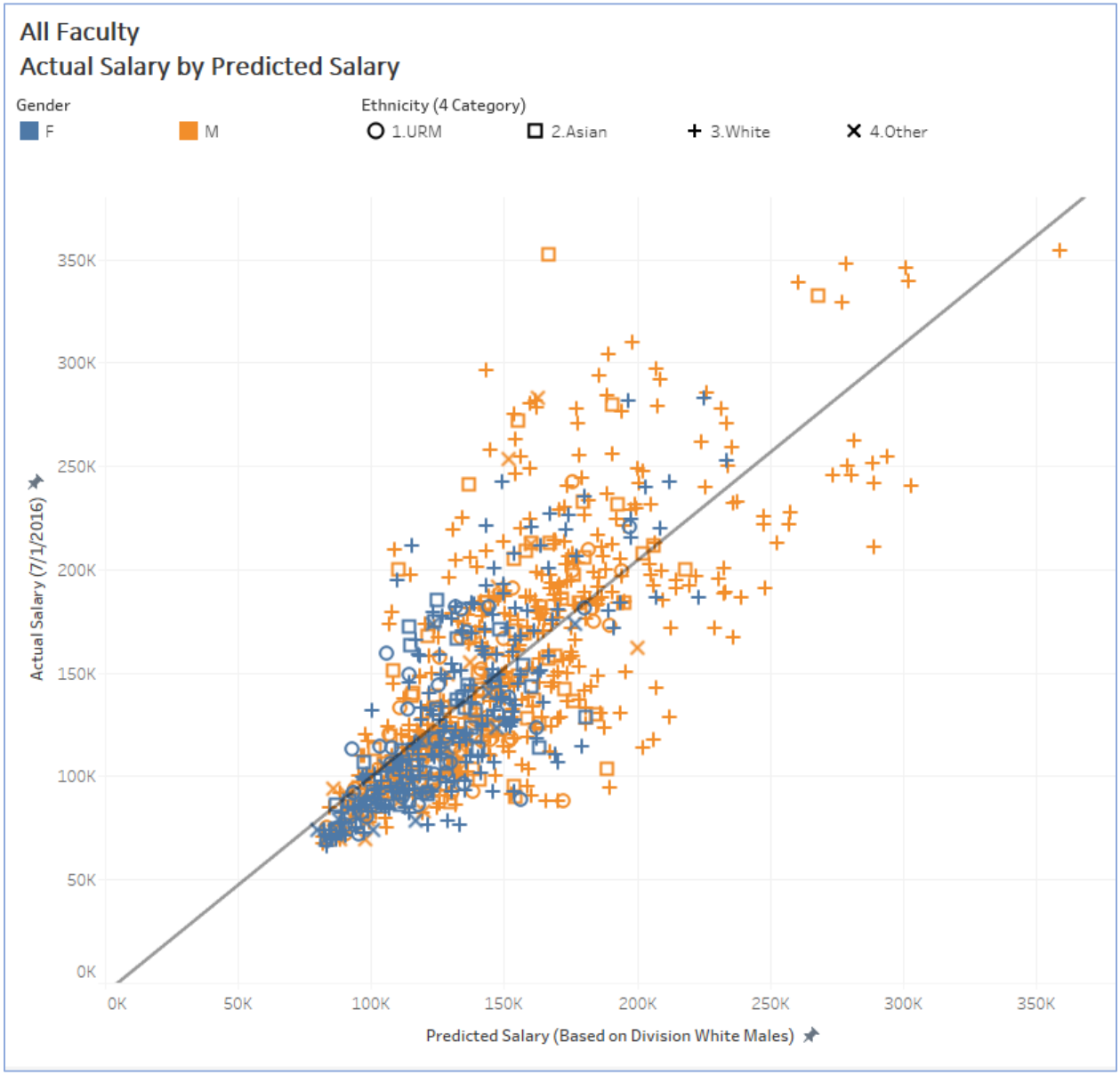


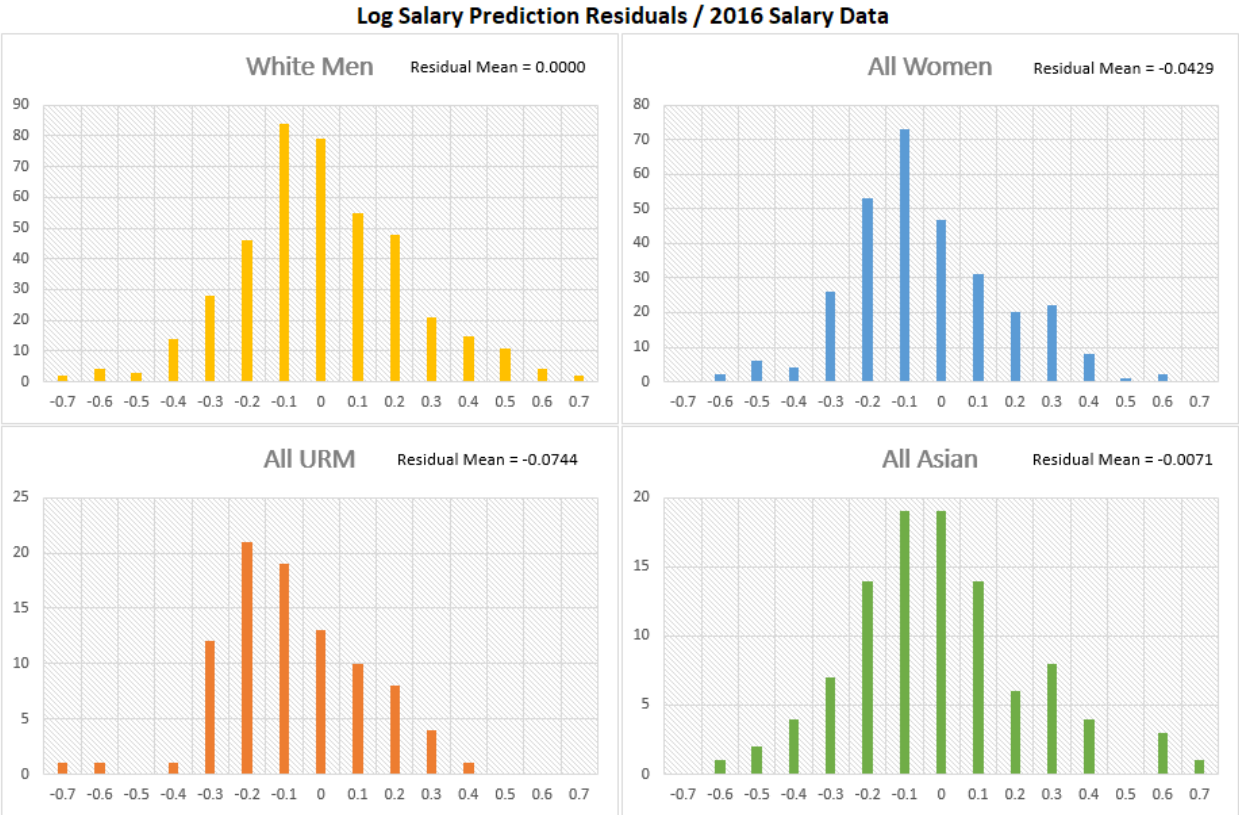
Figure 8 plots actual salary by predicted salary for all faculty members (similar charts for the larger colleges or divisions can be found in the Appendix, Figures I, J, K and L). The color of each marker represents the faculty member's gender while the shape of the marker represents ethnicity. Negative residuals (actual salary less than predicted) are below the line and positive residuals are above.

We also conducted a detailed review of the predicted salary residuals for faculty members in each college or division. Histograms of the predicted salary residual by gender and ethnicity can be found in

Figures M and N in the Appendix. These histograms plot the predicted log salary residual and we would expect the residuals to have a normal distribution shape centered around zero. We see a relatively small number of faculty in each division with high negative predicated salary residuals.

However, as in previous salary equity studies, there is a noticeable negative bias to the residuals which is true for all demographic groups as illustrated in Figure 9 below. In general, there appears to be a slightly more pronounced negative bias for women faculty compared to white men and even more so for under-represented minority faculty. Asian faculty have the least degree of negative skew in their residual plot.

Figure 9: Histograms of Log Salary Residuals from "White Male" Models by Demographic Group



CONCLUSIONS AND RECOMMENDATIONS

The two statistical methods used to explore for evidence of bias in the salaries of faculty members appear to be in agreement. A large majority of the observed salary differences between white men and women or URM faculty members are explained by differences in experience (years since Ph.D. and years since hire) as well as the differing demographic compositions among the disciplines. It is worth noting, however, that the "white male" model suggests somewhat larger gender and URM differentials than the "campus" model (4% vs 2% for women and 7% vs 4% for URM). It's not surprising that these two models give somewhat different predictions, since the "white male" model is estimated separately by division, and uses only the (more experienced) white male sample to generate returns to experience.

Focusing on differences relative to white men In Model 3 of the campus level analysis we found a small negative effect for women (~ -2%) and URM faculty (~-4%) that nearly disappears in Model 4 when rank and step are controlled. There was discussion among committee members about which of the two campus level models (3 or 4) is an appropriate reflection of differences among the groups of faculty examined here. On one level, rank and step reflect the university's assessment of an individual faculty member's merits and achievements and should include consideration of factors such as record of exceptional teaching, research productivity, recognition from peers in the form of awards, etc., that are not included as variables in this study. By this logic, it would be important to consider rank and step when gauging differences in salary among the faculty.

Alternatively, one might argue that any implicit bias against a particular demographic group that might exist would likely be filtered through an organization's salary structure. In other words, decisions about the appropriate rank and step of a given faculty member may reflect an implicit bias. In this scenario, it would be best to examine salary differences without consideration of rank and step. A majority of the committee tended to agree with this latter notion, though all thought it important to show both scenarios.

The data examined here show that the observed gender and race gaps in UCSB faculty salaries are almost entirely attributable to (1) the less advanced careers (i.e., shorter time elapsed since PhD) of women and underrepresented minority faculty members, and (2) the underrepresentation of women and URM faculty in divisions and fields with higher market salaries (e.g., engineering, economics, physical and life sciences). Once these factors are accounted for, the campus level Model 3 suggests a remaining gender salary gap of about 2 percent (about $3,090 less per year for women than white men on average), and a racial salary gap of about 4 percent (about $6,190 less per year for URM than white men on average) in 2016.

These residual salary gaps may be attributable to gender and racial differences in rates of progress up the step system, differences in off-scale salaries, or different distributions across departments within divisions. Future studies should attempt to incorporate additional factors known to influence salary, such as research productivity, honors and awards, retention offers, etc. if at all possible. Perhaps this data collection could be conducted for one or two of the colleges / divisions as a pilot study.

The Faculty Salary Equity Study Committee

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Distinguished Professor, Department of Chemistry & Biochemistry
Associate Vice Chancellor for Academic Personnel

Maria Charles
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Helly Kwee, Staff Consultant
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Appendix

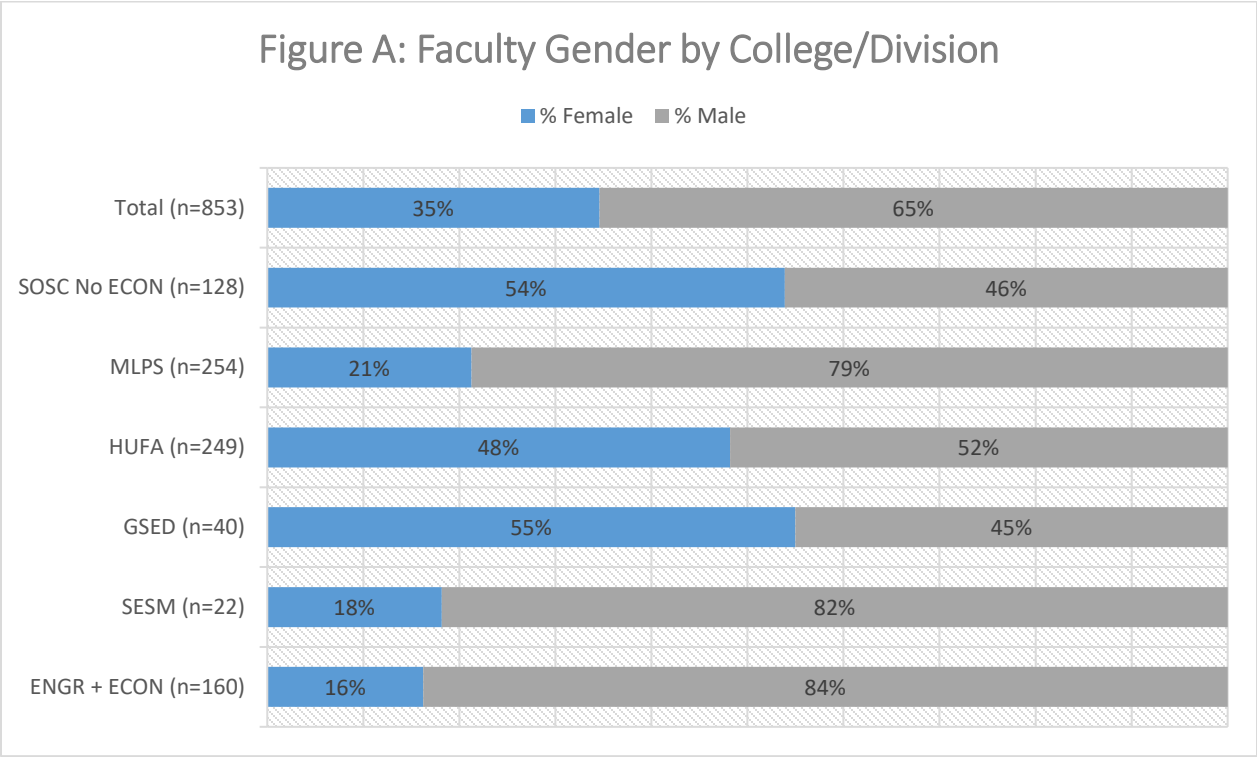


Figure A: Faculty Gender by College/Division
% Female
% Male
Total (n=853)
35%
65%
SOSC No ECON (n=128)
54%
46%
MLPS (n=254)
21%
79%
HUFA (n=249)
48%
52%
GSED (n=40)
55%
45%
SESM (n=22)
18%
82%
ENGR + ECON (n=160)
16%
84%

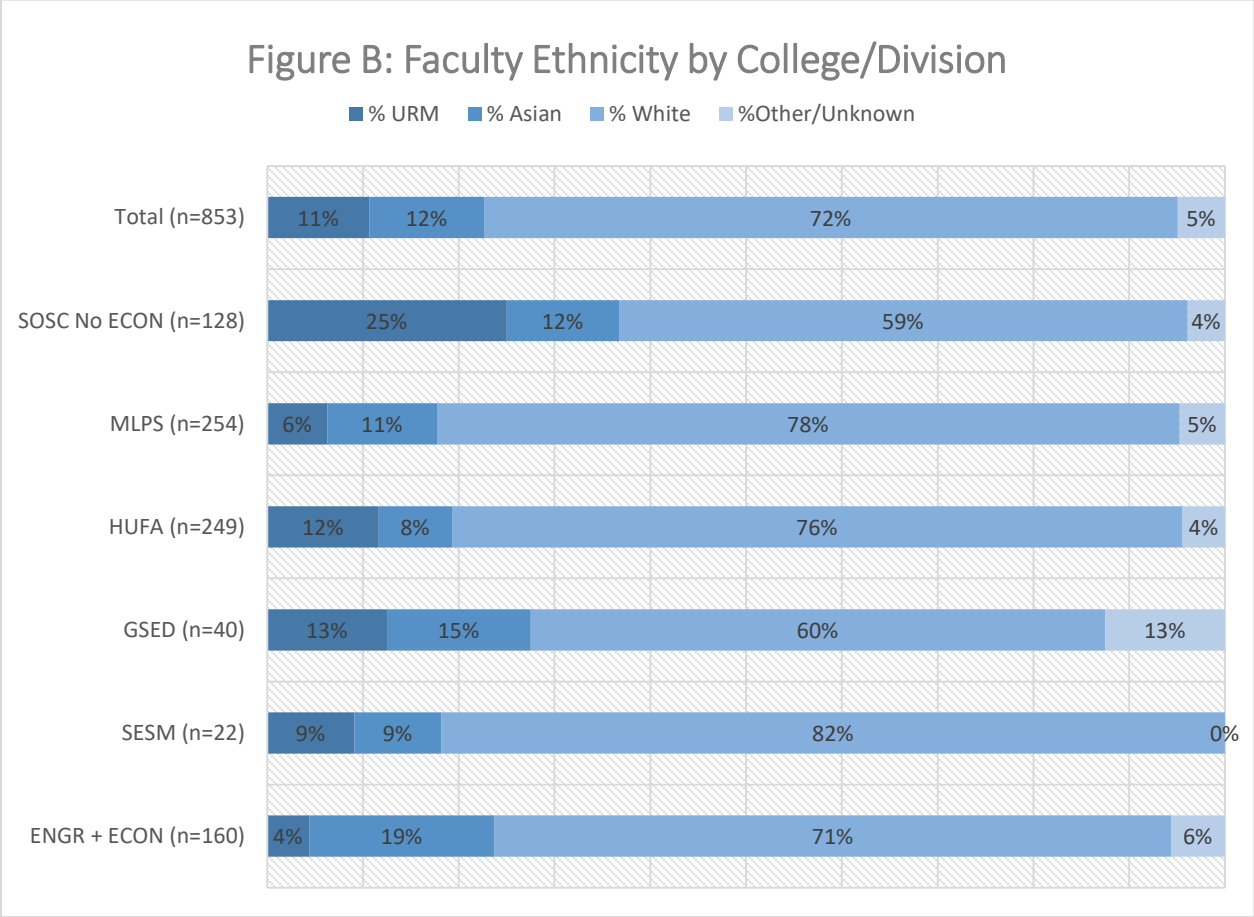


Figure B: Faculty Ethnicity by College/Division
% URM
% Asian
% White
%Other/Unknown
Total (n=853)
11%
12%
72%
5%
SOSC No ECON (n=128)
25%
12%
59%
4%
MLPS (n=254)
6%
11%
78%
5%
HUFA (n=249)
12%
8%
76%
4%
GSED (n=40)
13%
15%
60%
13%
SESM (n=22)
9%
9%
82%
0%
ENGR + ECON (n=160)
4%
19%
71%
6%

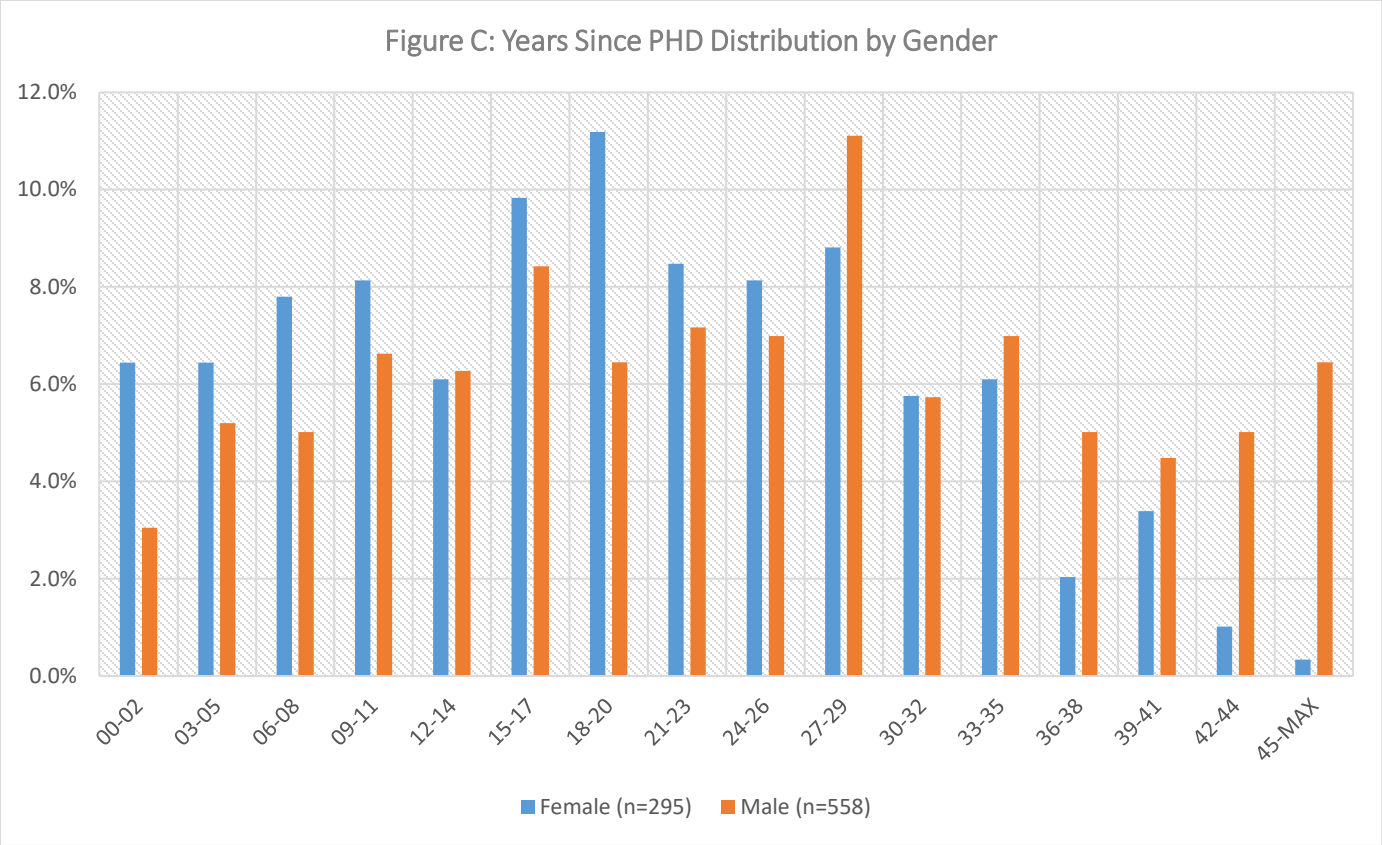
Appendix, Continued

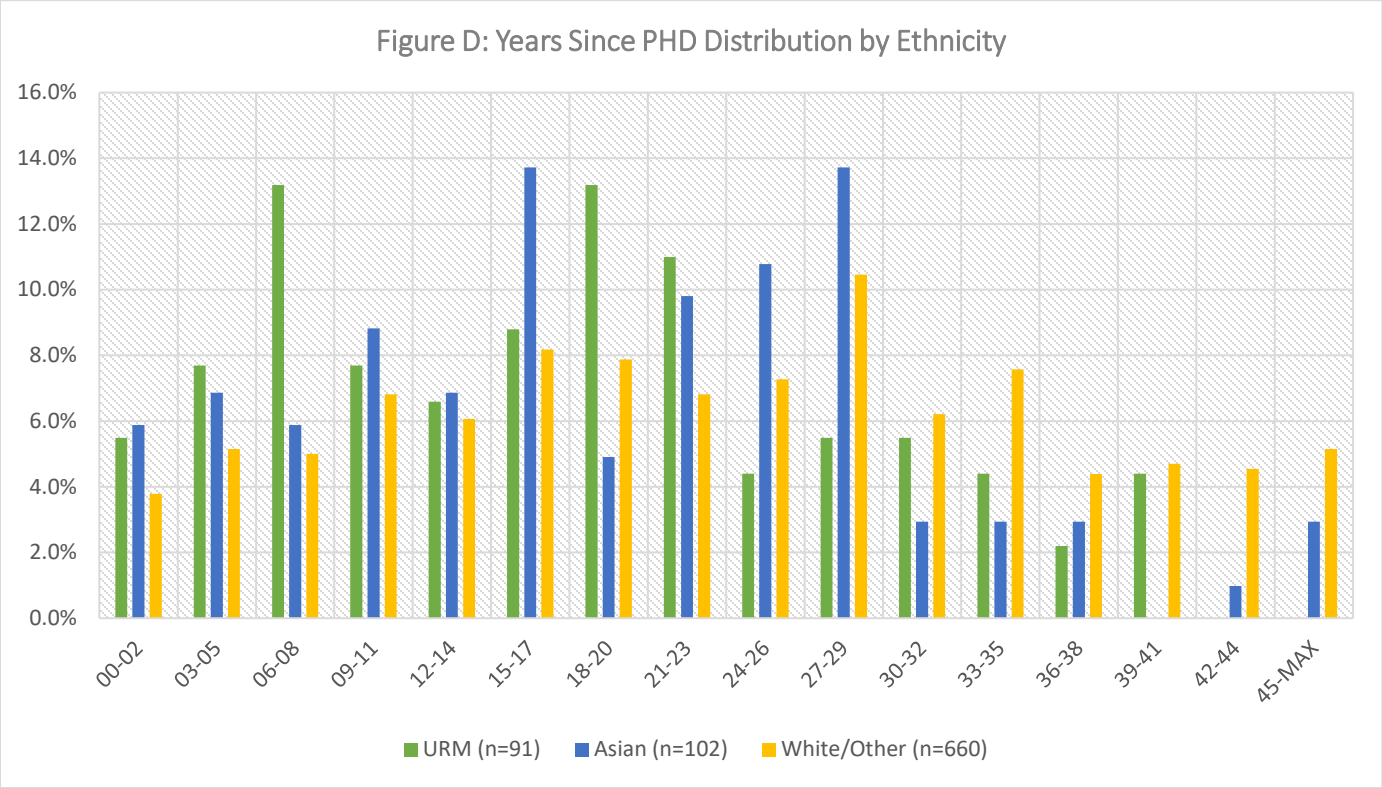
Table A: Average Salary, Years Since Ph.D. and Years Since Hire by College/Division and Gender

		Female			Male		
College / Div.	Variable	N	Mean	Median	N	Mean	Median
ENGR + ECON	Salary	26	$169,704	$152,800	134	$181,041	$160,250
	Years Since PHD		15.7	14.5		22.7	23.0
	Years Since Hire		9.5	8.0		15.8	15.0
SESM	Salary	4	$124,225	$117,700	18	$179,206	$156,200
	Years Since PHD		12.3	13.5		23.2	20.0
	Years Since Hire		9.5	9.5		14.7	13.0
GSED	Salary	22	$104,855	$103,150	18	$135,572	$127,550
	Years Since PHD		17.5	15.0		24.8	25.5
	Years Since Hire		14.0	12.5		15.2	11.5
HUFA	Salary	120	$120,969	$110,200	129	$129,913	$120,500
	Years Since PHD		19.8	20.0		22.9	23.0
	Years Since Hire		14.8	14.0		16.7	16.0
MLPS	Salary	54	$133,593	$123,600	200	$160,421	$153,450
	Years Since PHD		19.6	20.0		26.0	27.0
	Years Since Hire		13.6	12.0		18.8	18.0
SOSC no ECON	Salary	69	$127,261	$118,300	59	$146,568	$133,100
	Years Since PHD		19.8	19.0		24.5	24.0
	Years Since Hire		13.6	13.0		16.7	15.0
Total	Salary	295	$127,889	$117,400	558	$156,660	$144,950
	Years Since PHD		19.1	19.0		24.2	24.0
	Years Since Hire		13.7	13.0		17.1	15.5

Appendix, Continued

Distribution of Years Since PHD by Gender and Ethnicity





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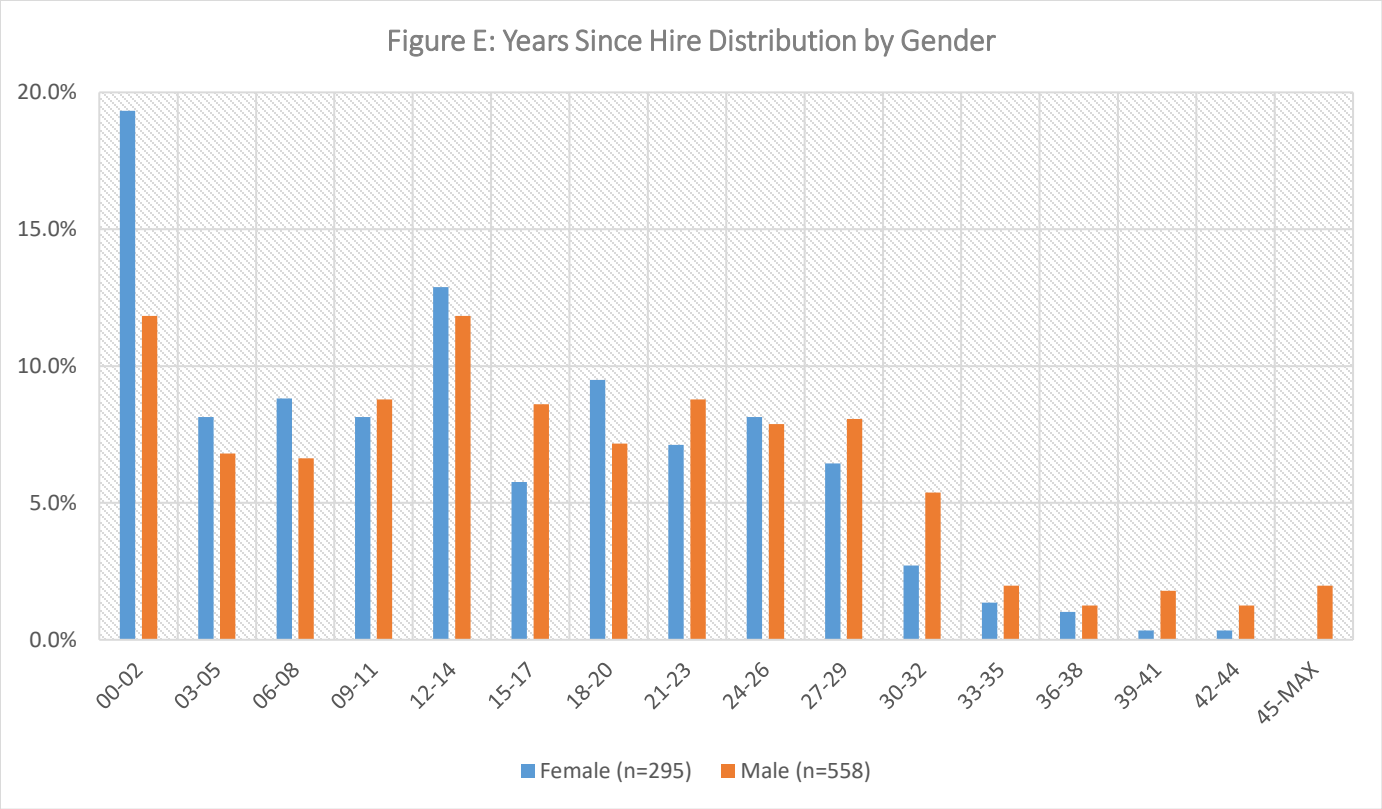
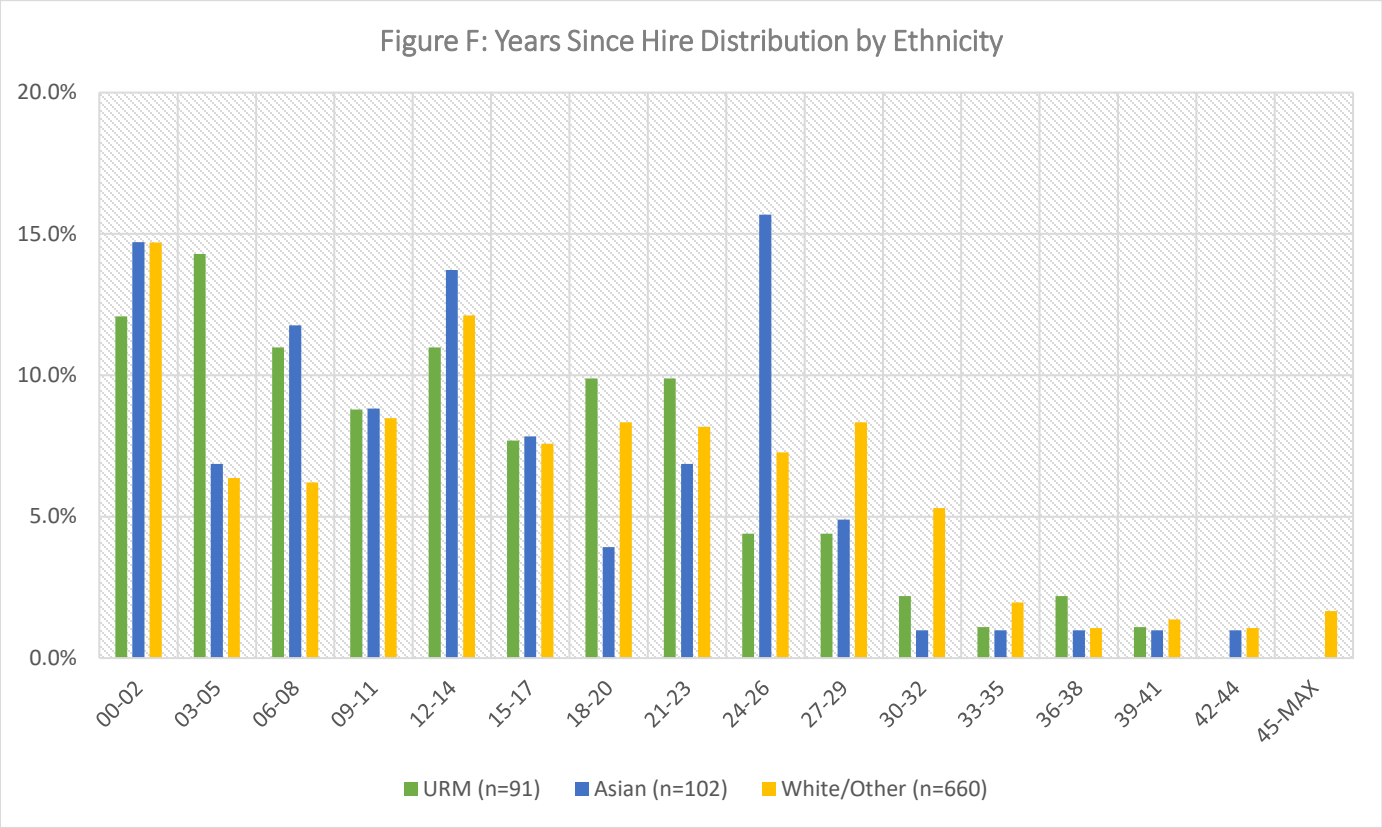
Distribution of Years Since Hire by Gender and Ethnicity





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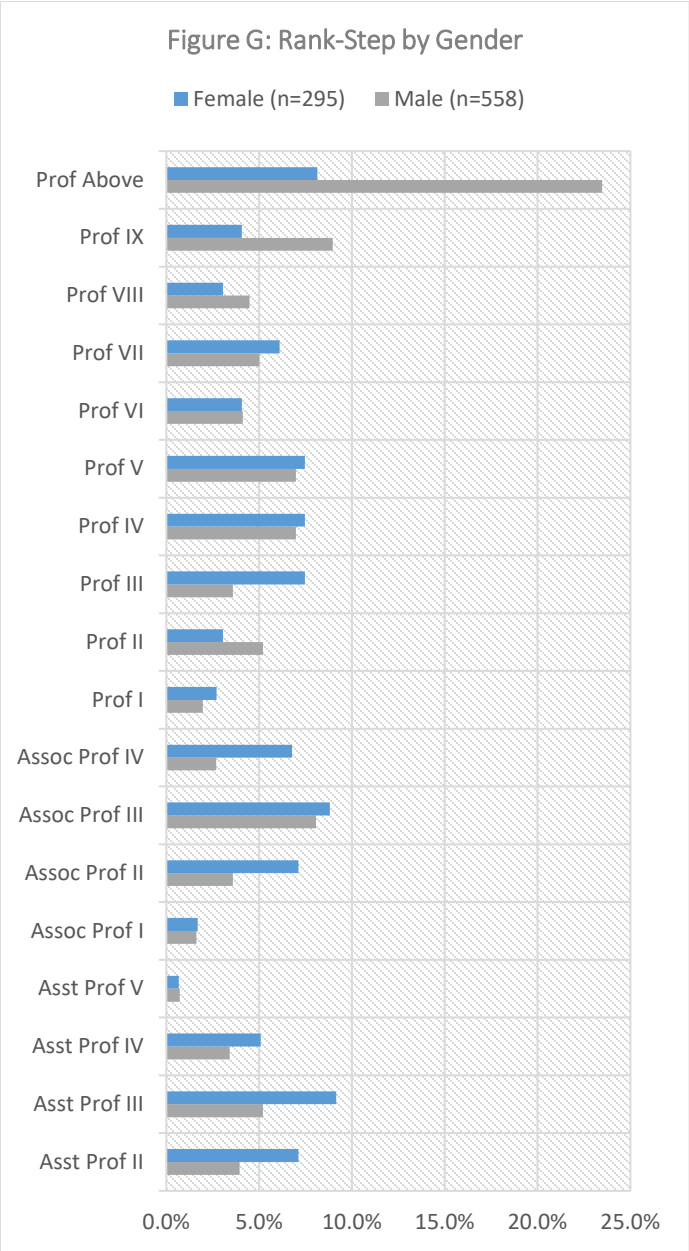
Rank-Step Distribution by Gender and Ethnicity



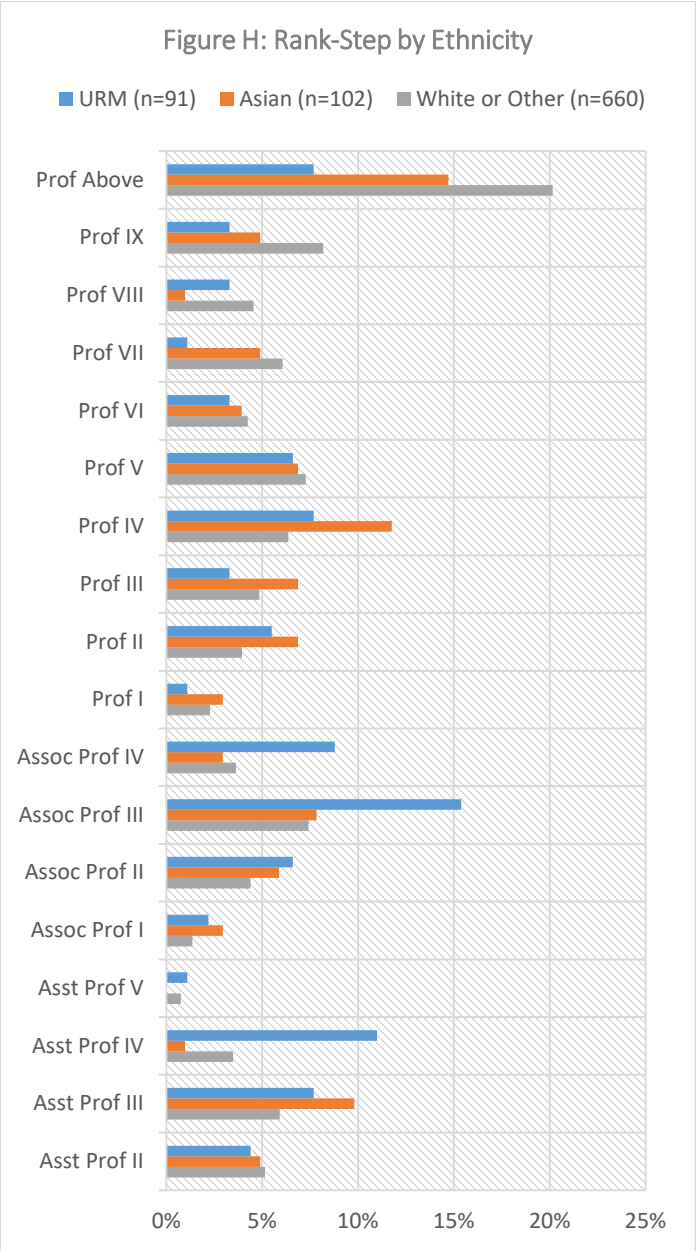


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Table B: Pearson Correlation Coefficients for All Faculty
2016 Salary Data

Variable	Log Salary	Salary	Years Since Hire	Years Since PHD	Female	Ethnicity - URM	Ethnicity - Asian	Ethnicity - Other	Ethnicity - White	Div: ENGR + Econ	Div: HUFA	Div: MLPS	Div: SOSC - Econ	Div: SESM	Div: GSED	Rank-Step
Log Salary (base e)	**1.000**	**0.979**	**0.415**	**0.675**	**-0.252**	**-0.170**	-0.010	**-0.141**	**0.192**	**0.290**	**-0.260**	**0.103**	**-0.078**	0.066	**-0.117**	**0.859**
p-value		**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**	0.781	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**0.003**	**0.022**	0.056	**0.001**	**<.0001**
Salary		1.000	0.356	0.642	-0.248	-0.164	-0.017	-0.117	0.182	0.283	-0.246	0.095	-0.080	0.066	-0.113	0.804
			<.0001	<.0001	<.0001	<.0001	0.617	0.001	<.0001	<.0001	<.0001	0.006	0.019	0.052	0.001	<.0001
Years Since Hire			1.000	0.776	-0.147	-0.070	-0.044	-0.277	0.215	-0.051	-0.008	0.102	-0.034	-0.032	-0.027	0.655
				<.0001	<.0001	0.040	0.199	<.0001	<.0001	0.138	0.816	0.003	0.320	0.349	0.424	<.0001
Years Since PHD				1.000	-0.193	-0.130	-0.095	-0.220	0.266	-0.034	-0.054	0.114	-0.016	-0.016	-0.030	0.846
					<.0001	0.000	0.005	<.0001	<.0001	0.328	0.114	0.001	0.639	0.651	0.388	<.0001
Female					1.000	0.084	0.006	0.005	-0.065	-0.185	0.184	-0.182	0.171	-0.056	0.095	-0.215
						0.014	0.873	0.875	0.059	<.0001	<.0001	<.0001	<.0001	0.102	0.005	<.0001
Ethnicity - URM						1.000	-0.127	-0.079	-0.560	-0.098	0.020	-0.092	0.195	-0.008	0.013	-0.147
							0.000	0.022	<.0001	0.004	0.553	0.007	<.0001	0.808	0.701	<.0001
Ethnicity - Asian							1.000	-0.084	-0.598	0.110	-0.086	-0.011	-0.003	-0.014	0.021	-0.041
								0.014	<.0001	0.001	0.012	0.752	0.928	0.675	0.544	0.228
Ethnicity - Other								1.000	-0.369	0.016	-0.015	-0.006	-0.020	-0.037	0.078	-0.248
									<.0001	0.650	0.661	0.861	0.564	0.280	0.023	<.0001
Ethnicity - White									1.000	-0.020	0.055	0.074	-0.123	0.034	-0.062	0.252
										0.567	0.106	0.030	0.000	0.320	0.071	<.0001
Div: ENGR + Econ										1.000	-0.309	-0.313	-0.202	-0.078	-0.107	0.079
											<.0001	<.0001	<.0001	0.022	0.002	0.022
Div: HUFA											1.000	-0.418	-0.270	-0.104	-0.142	-0.099
												<.0001	<.0001	0.002	<.0001	0.004
Div: MLPS												1.000	-0.274	-0.106	-0.144	0.086
													<.0001	0.002	<.0001	0.012
Div: SOSC no Econ													1.000	-0.068	-0.093	-0.040
														0.046	0.006	0.238
Div: SESM														1.000	-0.036	0.010
															0.292	0.771
Div: GSED															1.000	-0.058
																0.089
Rank-Step																1.000

Appendix, Continued

Table C: Campus Model Faculty Salary Equity Analysis, 2016 Salary Data
Dependent Variable = Log Salary (base e)

	Demographics Only			Demographics + Experience			Demos + Exper. + Division			Demos + Exper. + Div. + Rank		
Variable	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.
Intercept	11.932 (0.016)	***	0.0000	11.459 (0.023)	***	0.0000	11.304 (0.024)	***	0.0000	11.142 (0.016)	***	0.0000
Female	-0.179 (0.025)	***	-0.2371	-0.093 (0.019)	***	-0.1223	-0.019 (0.017)		-0.0253	0.001 (0.011)		0.0007
Ethnicity - URM	-0.195 (0.038)	***	-0.1675	-0.073 (0.029)	*	-0.0630	-0.038 (0.026)		-0.0329	-0.007 (0.017)		-0.0064
Ethnicity - Asian	-0.047 (0.036)		-0.0427	0.056 (0.027)	*	0.0501	0.021 (0.024)		0.0187	0.003 (0.016)		0.0027
Ethnicity -Other	-0.259 (0.054)	***	-0.1561	-0.049 (0.042)		-0.0293	-0.034 (0.038)		-0.0207	0.070 (0.025)	**	0.0420
Years Since PHD				0.025 (0.001)	***	0.8584	0.024 (0.001)	***	0.8537	0.003 (0.001)	**	0.0880
Years Since Hire				-0.009 (0.001)	***	-0.2791	-0.008 (0.001)	***	-0.2510	-0.008 (0.001)	***	-0.2395
Div: ENGR + Econ							0.339 (0.024)	***	0.3676	0.248 (0.016)	***	0.2687
Div: MLPS							0.130 (0.021)	***	0.1653	0.114 (0.013)	***	0.1445
Div: SOSC - Econ							0.063 (0.025)	*	0.0629	0.053 (0.016)	***	0.0529
Div: SESM							0.269 (0.050)	***	0.1183	0.207 (0.033)	***	0.0911
Div: GSED							-0.037 (0.038)		-0.0218	-0.023 (0.025)		-0.0134
Rank-Step										0.059 (0.002)	***	0.9179
Model Fit Statistics												
F-Value (DF)	26.36(4)	***		146.13(6)	***		122.67 (11)	***		366.61 (12)	***	
Root MSE	0.3402			0.2531			0.2245			0.1451		
R-Square	0.1106			0.5089			0.6161			0.8397		
Adj. R-Square	**0.1064**			**0.5055**			**0.6110**			**0.8374**		

***p < .001; **p < .01; *p < .05

Appendix, Continued

Table D: Campus Model Faculty Salary Equity Analysis, 2015 Salary Data
Dependent Variable = Log Salary (base e)

	Demographics Only			Demographics + Experience			Demos + Exper. + Division			Demos + Exper. + Div. + Rank		
Variable	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.
Intercept	11.889	***	0.0000	11.436	***	0.0000	11.300	***	0.0000	11.108	***	0.0000
	(0.015)			(0.023)			(0.024)			(0.016)		
Female	-0.178	***	-0.2382	-0.091	***	-0.1216	-0.018		-0.0246	-0.002		-0.0030
	(0.025)			(0.019)			(0.018)			(0.012)		
Ethnicity - URM	-0.191	***	-0.1685	-0.080	**	-0.0711	-0.053	*	-0.0466	-0.014		-0.0122
	(0.038)			(0.029)			(0.027)			(0.017)		
Ethnicity - Asian	-0.034		-0.0313	0.041		0.0377	0.013		0.0120	-0.005		-0.0043
	(0.037)			(0.028)			(0.025)			(0.016)		
Ethnicity -Other	-0.211	*	-0.0849	0.038		0.0148	-0.008		-0.0030	0.121	**	0.0472
	(0.083)			(0.065)			(0.059)			(0.038)		
Years Since PHD				0.024	***	0.8457	0.024	***	0.8416	0.003	**	0.0903
				(0.001)			(0.001)			(0.001)		
Years Since Hire				-0.009	***	-0.2853	-0.009	***	-0.2729	-0.008	***	-0.2467
				(0.001)			(0.001)			(0.001)		
Div: ENGR + Econ							0.316	***	0.3506	0.228	***	0.2526
							(0.024)			(0.016)		
Div: MLPS							0.131	***	0.1697	0.102	***	0.1316
							(0.021)			(0.014)		
Div: SOSC - Econ							0.048		0.0490	0.043	**	0.0440
							(0.025)			(0.016)		
Div: SESM							0.229	***	0.1025	0.190	***	0.0848
							(0.052)			(0.033)		
Div: GSED							-0.040		-0.0241	-0.021		-0.0126
							(0.039)			(0.025)		
Rank-Step										0.060	***	0.9052
										(0.002)		
Model Fit Statistics												
F-Value (DF)	23.21 (4)	***		132.7(6)	***		107.4(11)	***		335.5(12)	***	
Root MSE	0.3351			0.2520			0.2267			0.1456		
R-Square	0.1015			0.4929			0.5921			0.8320		
Adj. R-Square	**0.0971**			**0.4892**			**0.5866**			**0.8295**		

***p < .001; **p < .01; *p < .05

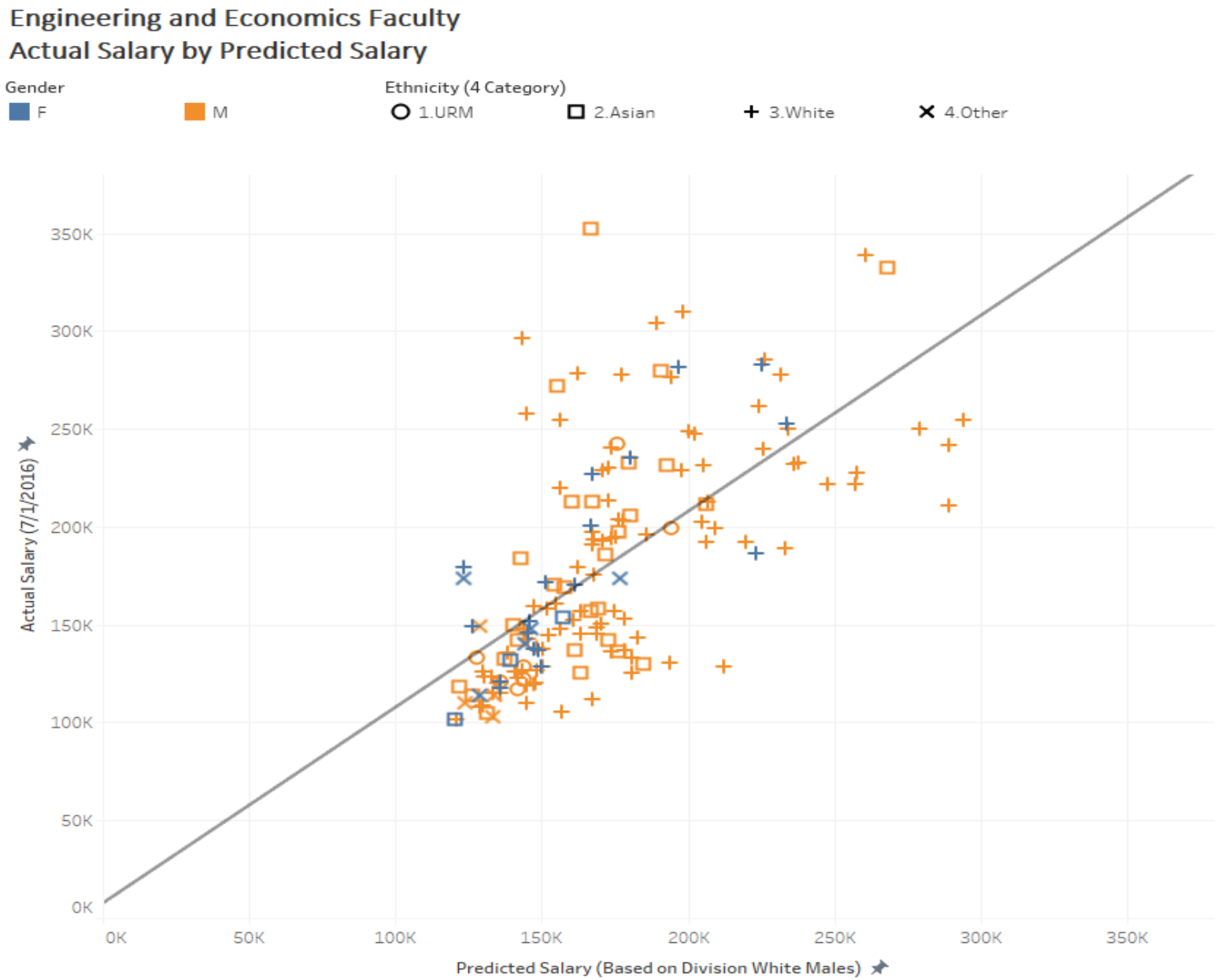
Appendix, Continued

Table E: Campus Model Faculty Salary Equity Analysis, 2014 Salary Data
Dependent Variable = Log Salary (base e)

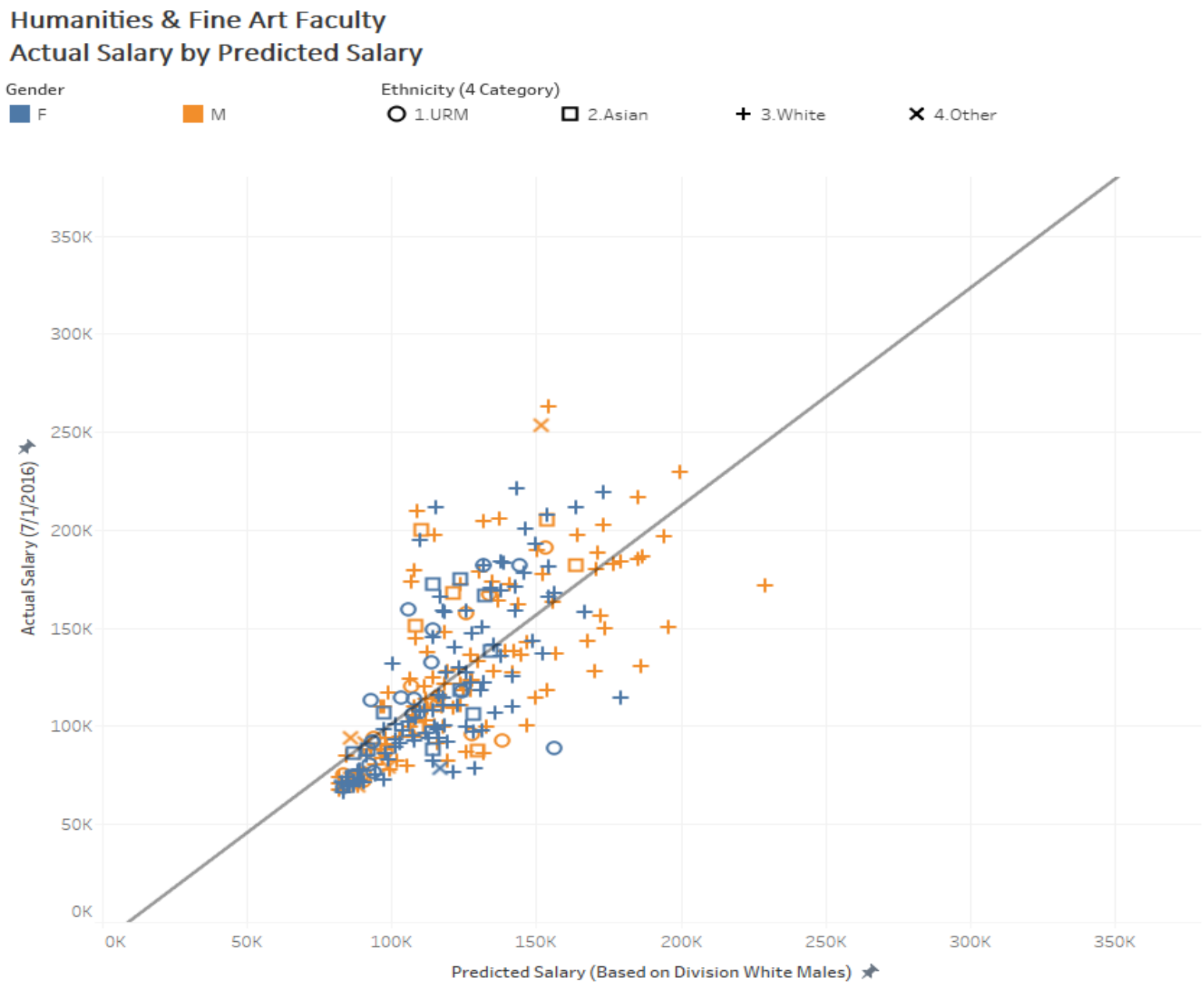
	Demographics Only			Demographics + Experience			Demos + Exper. + Division			Demos + Exper. + Div. + Rank		
Variable	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.	Parameter Est. (Std. Error)		Std. Est.
Intercept	11.844	***	0.0000	11.396	***	0.0000	11.261	***	0.0000	11.054	***	0.0000
	(0.015)			(0.023)			(0.025)			(0.016)		
Female	-0.167	***	-0.2280	-0.088	***	-0.1207	-0.020		-0.0272	-0.006		-0.0083
	(0.025)			(0.019)			(0.018)			(0.011)		
Ethnicity - URM	-0.199	***	-0.1809	-0.075	**	-0.0678	-0.046		-0.0421	0.004		0.0037
	(0.037)			(0.029)			(0.026)			(0.016)		
Ethnicity - Asian	-0.063		-0.0590	0.035		0.0329	0.008		0.0075	-0.011		-0.0100
	(0.036)			(0.028)			(0.025)			(0.016)		
Ethnicity -Other	-0.316	***	-0.1279	-0.065		-0.0264	-0.031		-0.0124	0.051	**	0.0206
	(0.082)			(0.064)			(0.058)			(0.036)		
Years Since PHD				0.024	***	0.8215	0.023	***	0.8096	0.002	*	0.0659
				(0.001)			(0.001)			(0.001)		
Years Since Hire				-0.009	***	-0.2665	-0.008	***	-0.2324	-0.007	***	-0.2274
				(0.001)			(0.001)			(0.001)		
Div: ENGR + Econ							0.300	***	0.3447	0.216	***	0.2482
							(0.024)			(0.015)		
Div: MLPS							0.115	***	0.1520	0.096	***	0.1262
							(0.021)			(0.013)		
Div: SOSC - Econ							0.036		0.0374	0.034	*	0.0351
							(0.025)			(0.016)		
Div: SESM							0.209	***	0.0943	0.180	***	0.0812
							(0.052)			(0.033)		
Div: GSED							-0.035		-0.0226	-0.006		-0.0040
							(0.037)			(0.023)		
Rank-Step										0.061	***	0.9165
										(0.002)		
Model Fit Statistics												
F-Value (DF)	24.4(4)	***		129.5(6)	***		103.2(11)	***		347.8(12)	***	
Root MSE	0.3245			0.2460			0.2224			0.1387		
R-Square	0.1083			0.4918			0.5872			0.8397		
Adj. R-Square	**0.1039**			**0.4880**			**0.5815**			**0.8373**		

***p < .001; **p < .01; *p < .05

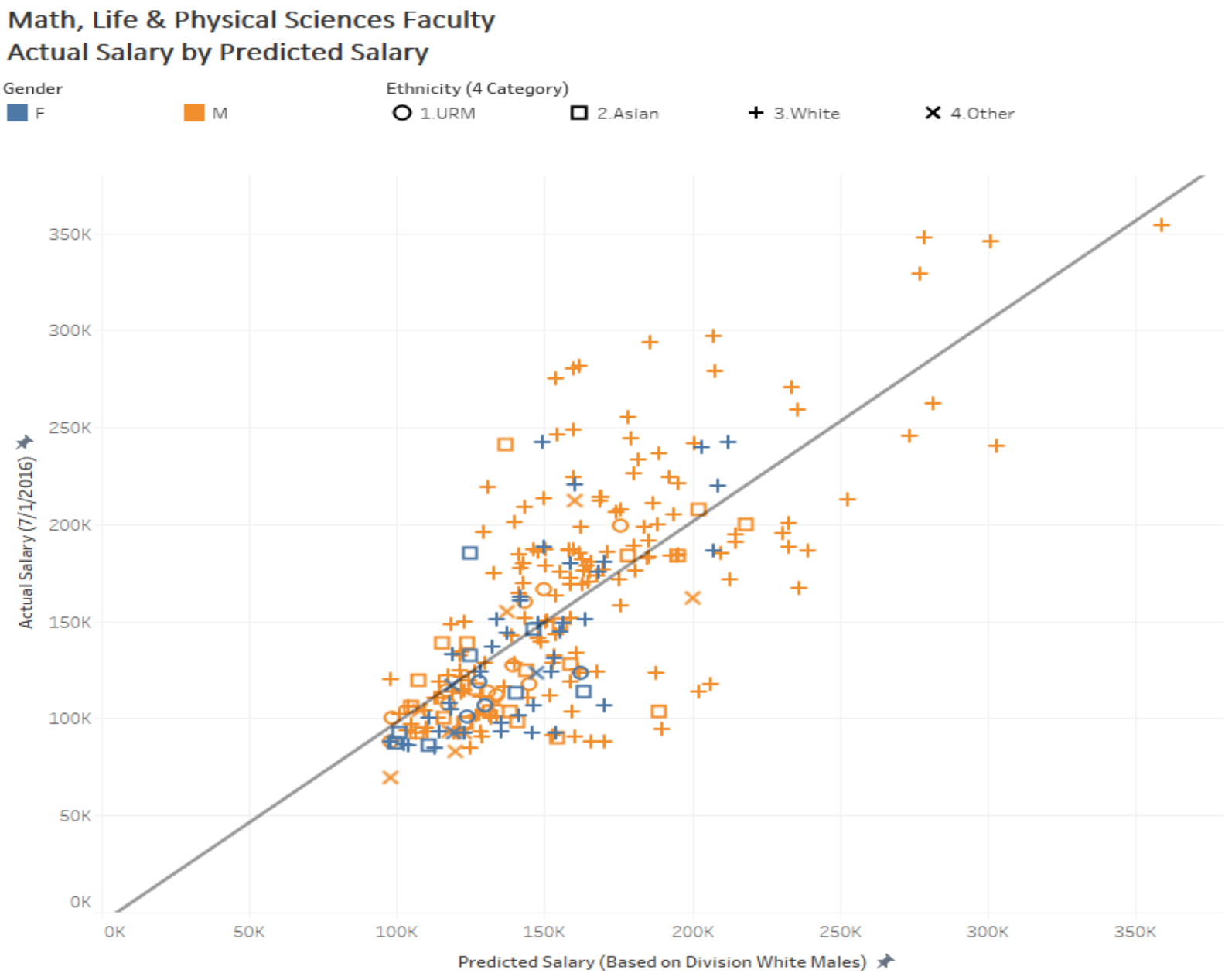
Appendix, Continued / Figure I



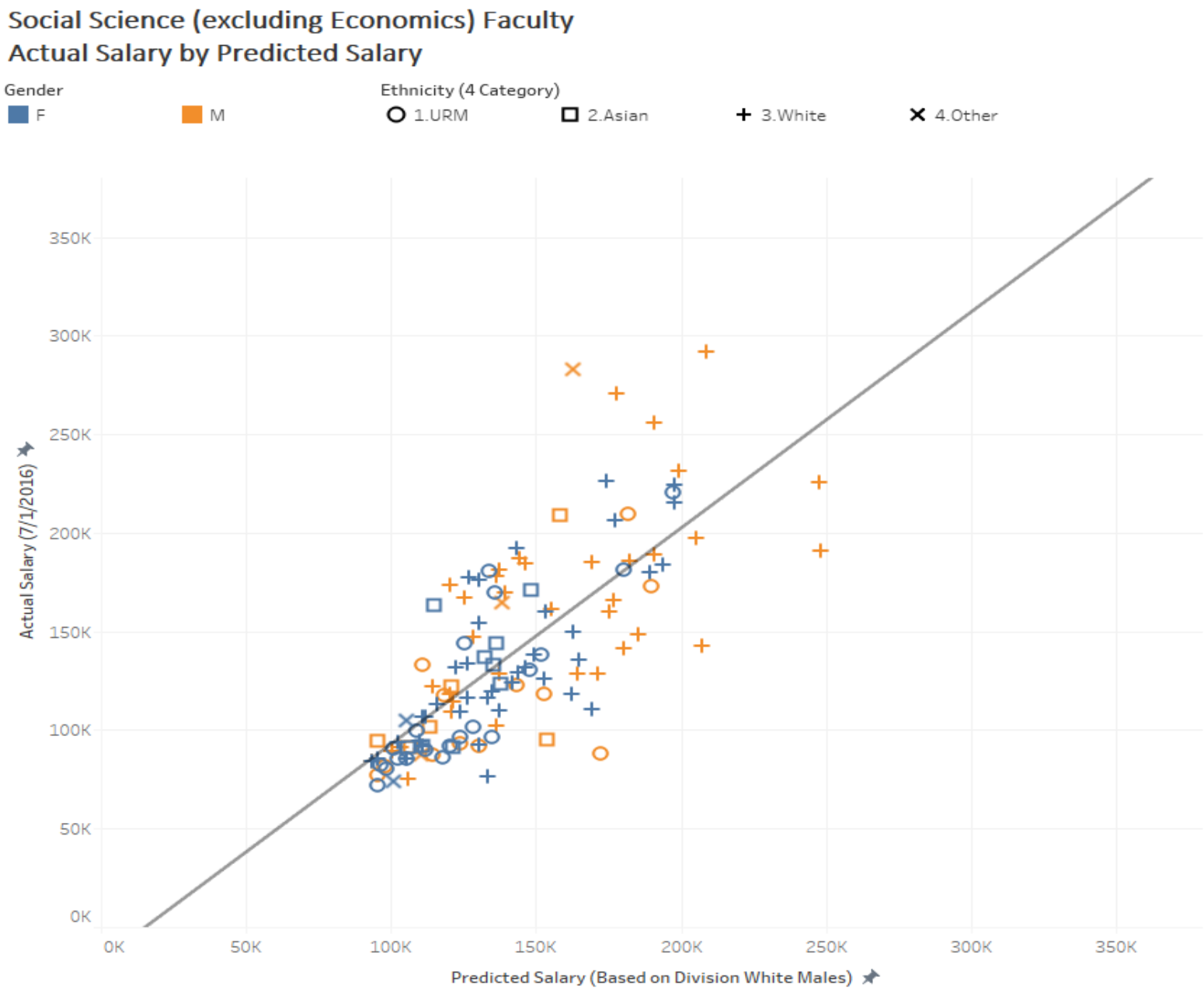
Appendix, Continued / Figure J



Appendix, Continued / Figure K



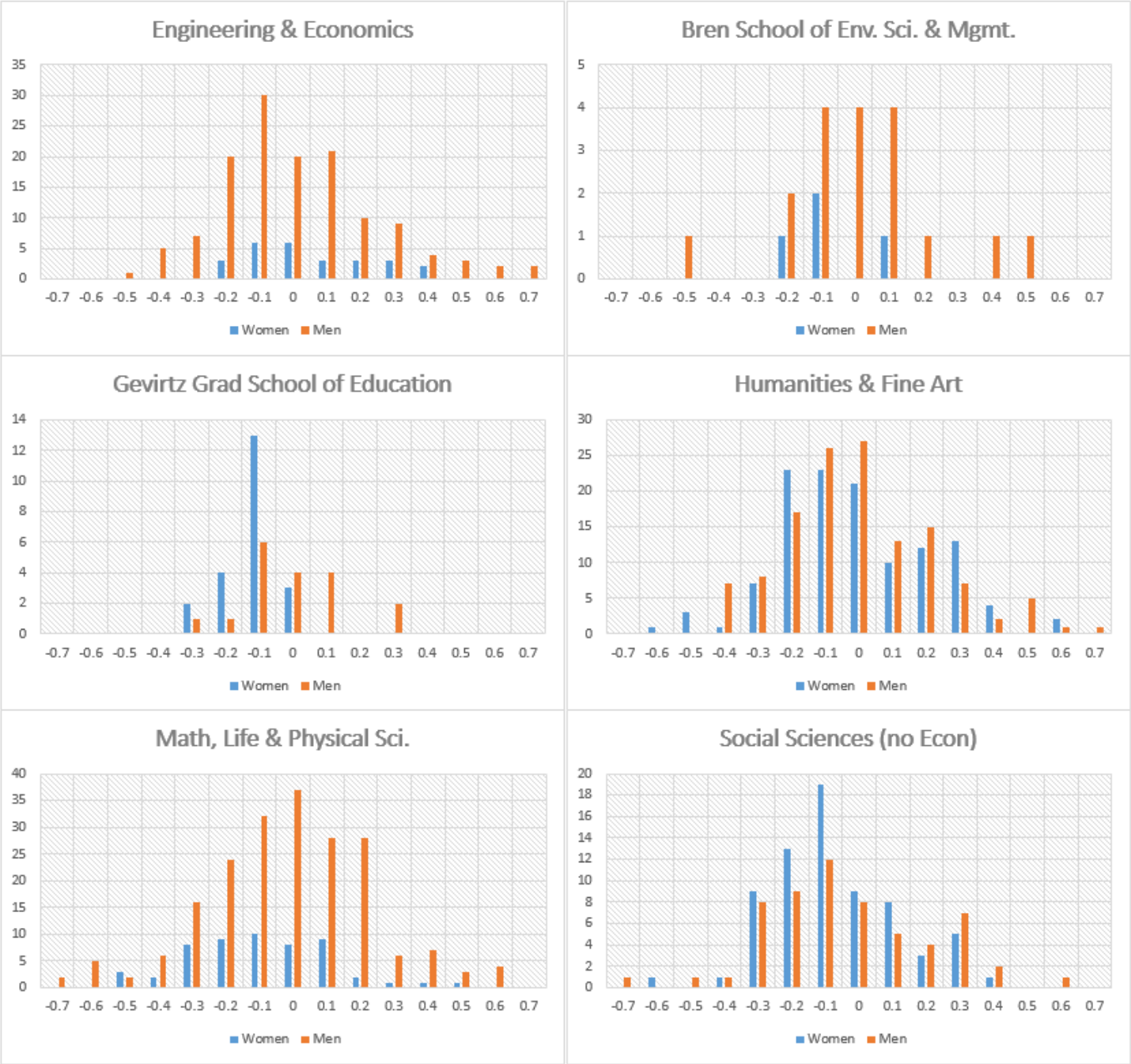
Appendix, Continued / Figure L



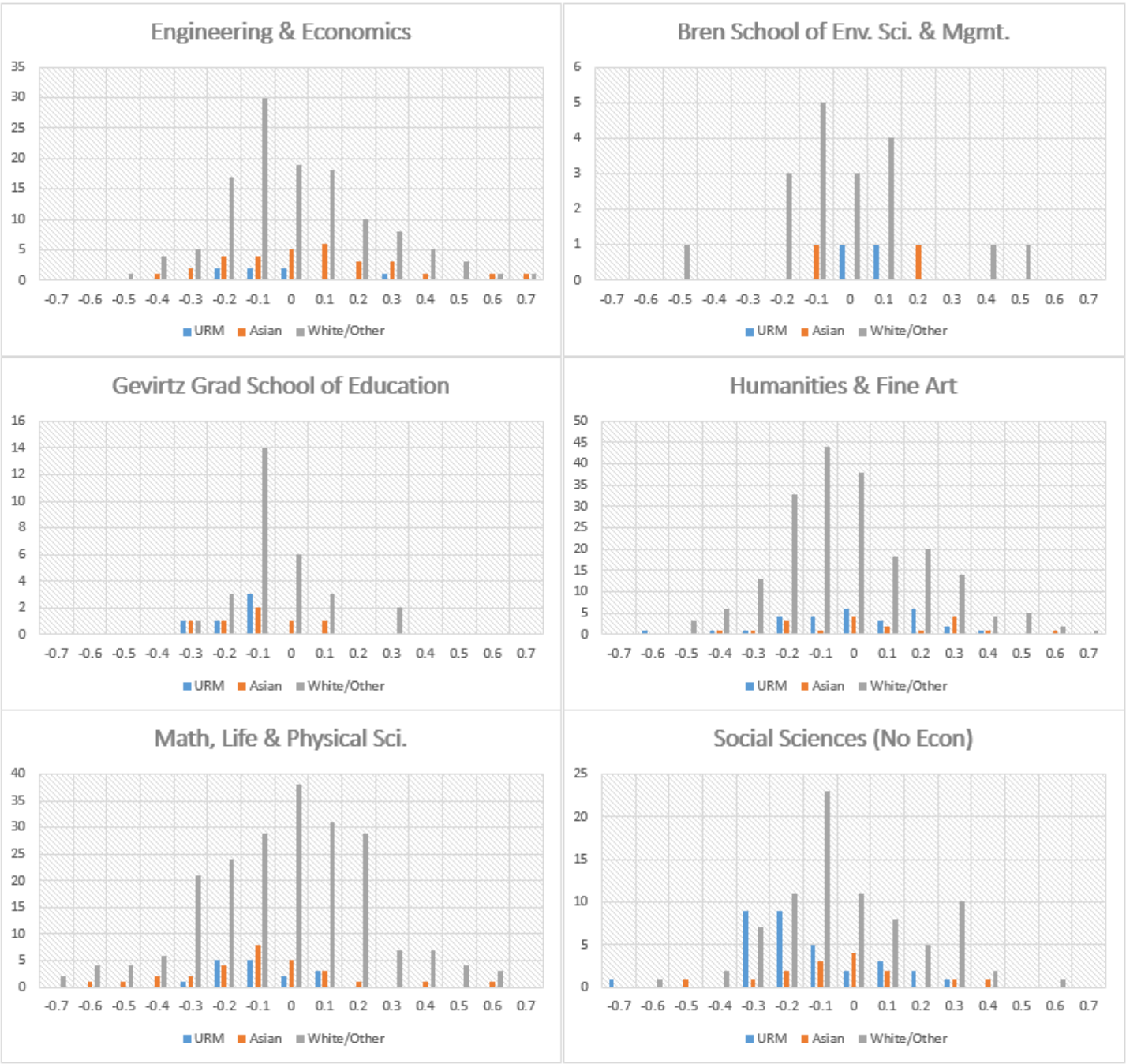
Appendix, Continued

Figure M

Log Salary Prediction Residuals by Gender / 2016 Salary Data



Appendix, Continued

Figure N

Log Salary Prediction Residuals by Ethnicity / 2016 Salary Data