

Faculty Salary Analysis

Cover Sheet	Introduction	Methodology and Analysis	Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: ..
-------------	--------------	--------------------------	------------------------	--	--	----------------------------------

2017-2018 Faculty Salary Analysis

March 5, 2018

Faculty Salary Analysis

Cover Sheet	Introduction	Methodology and Analysis	Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: ..
-------------	---------------------	--------------------------	------------------------	--	--	----------------------------------

Data

- Assistant Professor, Associate Professor, and Professor ranks are included; ranks of Instructor and Senior Instructor are excluded, except for Physical Education and Athletics
- Both tenure and non-tenure streams
- The analysis for the School of Medicine excludes faculty in clinical departments and dual-paid faculty in the basic sciences (i.e., those with salary from both CWRU and an affiliated hospital)
- The analysis for Physical Education and Athletics is based on athletics role rather than faculty rank to allow better comparison
- Analyses were conducted on base salary
- Salaries for the School of Medicine and School of Dental Medicine are based on 12-month appointments
- Salaries for all other schools are adjusted to a 9-month equivalent appointment and are adjusted to 100% effort to allow comparison
- Data are from Fall 2017. Changes made after November 1, 2017 are not reflected in this analysis

Faculty Salary Analysis

Cover Sheet	Introduction	Methodology and Analysis	Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: ..
-------------	--------------	---------------------------------	------------------------	--	--	----------------------------------

Regression Analysis

- A separate regression is conducted for each school or division
- The dependent variable in the analyses is the 9-month equivalent adjusted base salary for all except the School of Medicine and School of Dental Medicine
- The dependent variable for the School of Medicine and School of Dental Medicine is the 12-month salary which includes incentive pay
- The independent variables in the analyses are age, rank, years in rank, tenure status, years since hire, and highest degree
- Using a multiple regression analysis, a predicted salary value is calculated for each faculty member
- This predicted salary value is compared to the faculty member's actual salary, and "residual" values are calculated from the difference between actual and predicted salary values

Limitations of the Analysis

- There is no measure of productivity in the regression analysis
- Examining residuals by group is a "broad brush" technique for highlighting where differences **might** exist
- Analysis is **strongly** affected by extreme high or low values. No outliers were removed to reflect actual salary distributions

Faculty Salary Analysis

Cover Sheet	Introduction	Methodology and Analysis	Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences
-------------	--------------	--------------------------	-------------------------------	--	--	---

Preface to the Results

The results are presented on the following pages using three separate charts:

- The first is a bar graph charting average salary by rank and gender. Assistant, Associate, and full Professors are included, where average actual salaries are presented for women and men. In cases where there are less than three cases, no average was computed and the graphs are suppressed.
- The second is a table depicting the percentage of cases that fall above and below the regression line for men and women. Falling above the line indicates an actual salary greater than predicted, whereas actual salary was lower than predicted when falling below the line.
- Lastly, the average unstandardized residuals for men and women were plotted using a bar chart. This allows for the exploration of disparity in real dollars as averaged out across groups. Positive values indicate greater actual salaries than predicted, while negative values reflect consistently lower actual salaries than predicted.

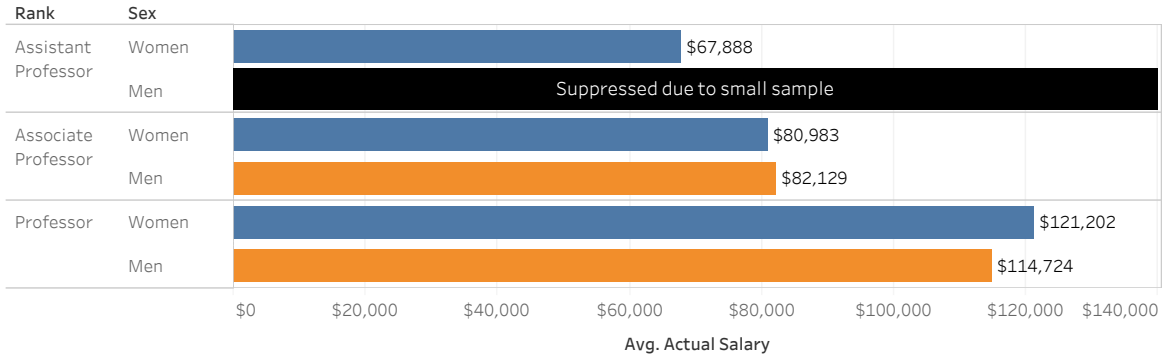
For all charts and graphs, the color blue represents women and orange represents men.

Faculty Salary Analysis

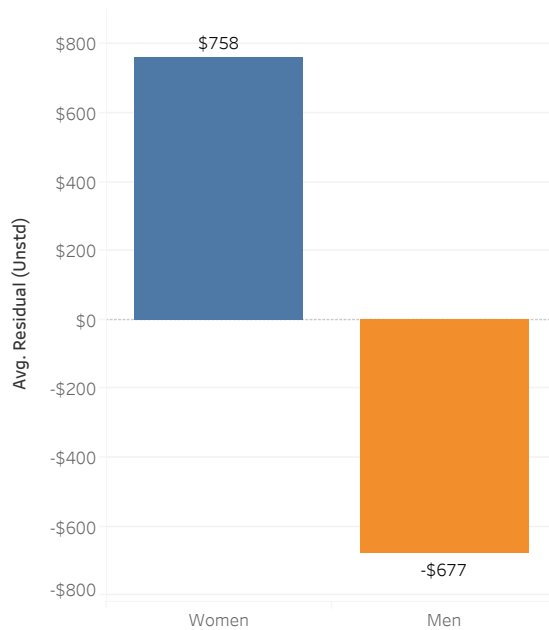
Introduction	Methodology and Analysis	Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering
--------------	--------------------------	------------------------	--	--	---	----------------------------

Average Salary by Gender and Rank

School/Division
Humanities



Sex	Above or Below	Percentage
Women	Above the line	48%
	Below the line	52%
Men	Above the line	35%
	Below the line	65%

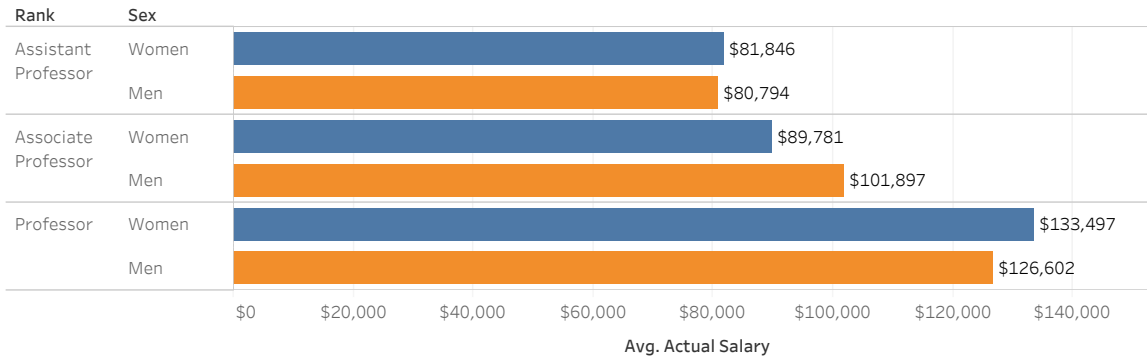


Faculty Salary Analysis

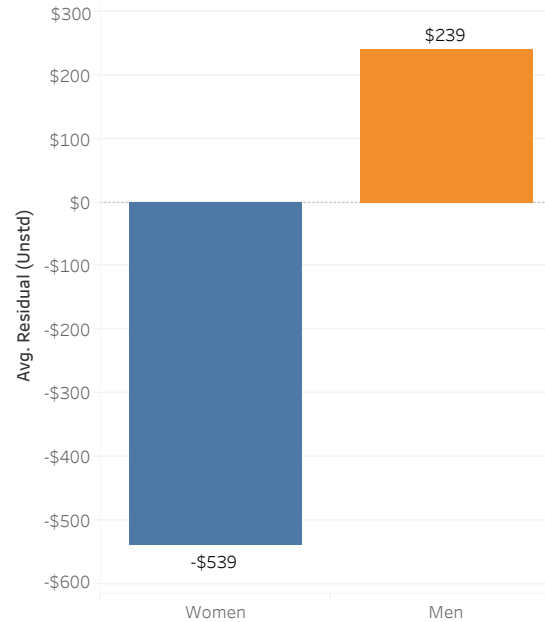
Methodology and Analysis	Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences
--------------------------	------------------------	--	--	---	----------------------------	--

Average Salary by Gender and Rank

School/Division
Natural Sciences



Sex	Above or Below	
Women	Above the line	41%
	Below the line	59%
Men	Above the line	48%
	Below the line	52%

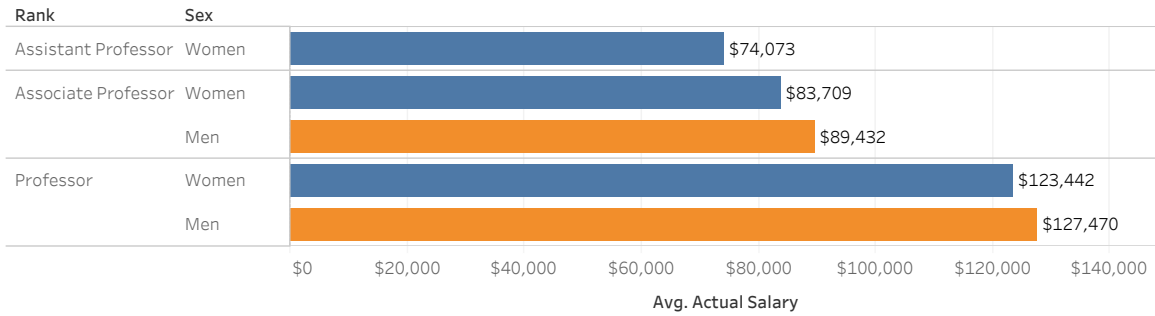


Faculty Salary Analysis

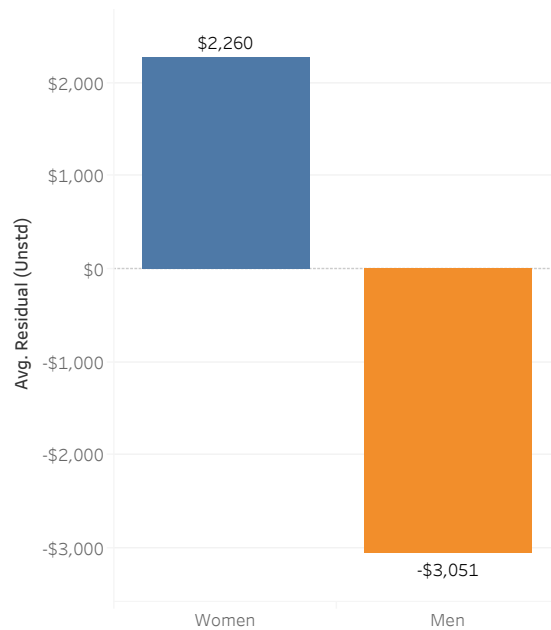
Preface to the Results	College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management
------------------------	--	--	---	----------------------------	--	----------------------------------

Average Salary by Gender and Rank

School/Division
Social Sciences



Sex	Above or Below	Percentage
Women	Above the line	45%
	Below the line	55%
Men	Above the line	40%
	Below the line	60%

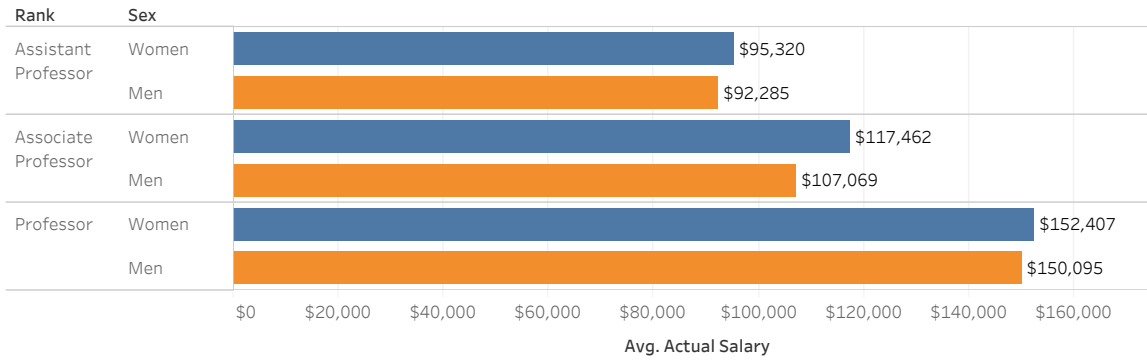


Faculty Salary Analysis

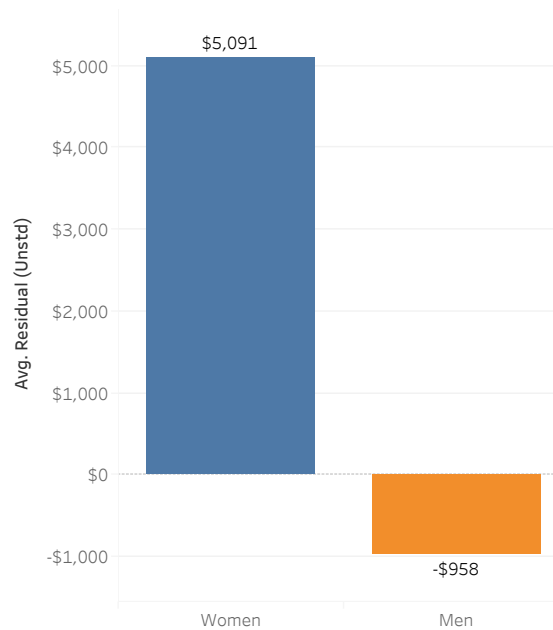
College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law
--	--	---	-----------------------------------	--	----------------------------------	---------------

Average Salary by Gender and Rank

School/Division
Engineering



Sex	Above or Below	Percentage
Women	Above the line	80%
	Below the line	20%
Men	Above the line	42%
	Below the line	58%

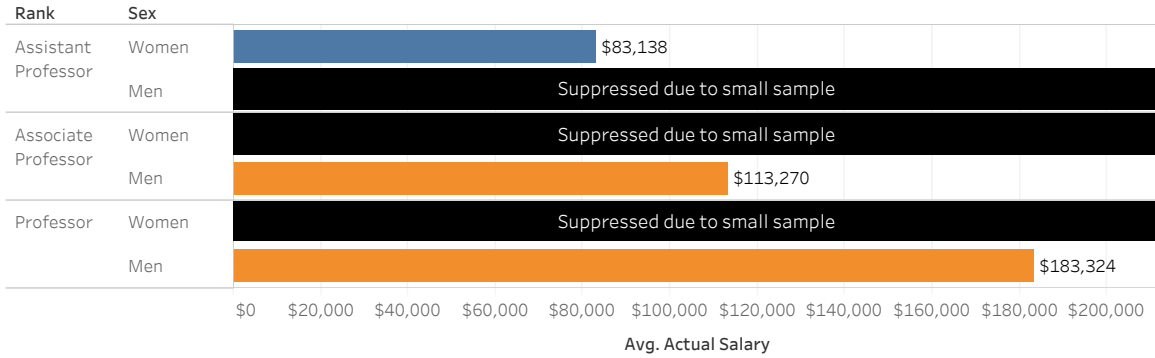


Faculty Salary Analysis

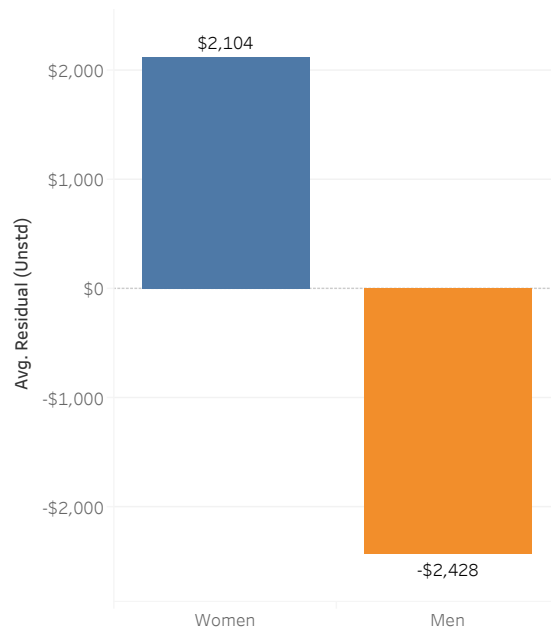
College of Arts and Sciences: Mathematics a..	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing
---	---	----------------------------	---	----------------------------------	---------------	--

Average Salary by Gender and Rank

School/Division
Social Work



Sex	Above or Below	Percentage
Women	Above the line	52%
	Below the line	48%
Men	Above the line	47%
	Below the line	53%

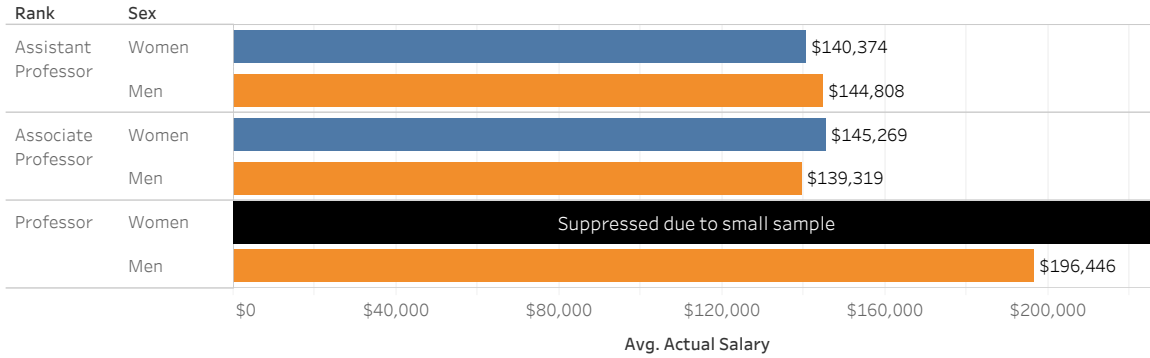


Faculty Salary Analysis

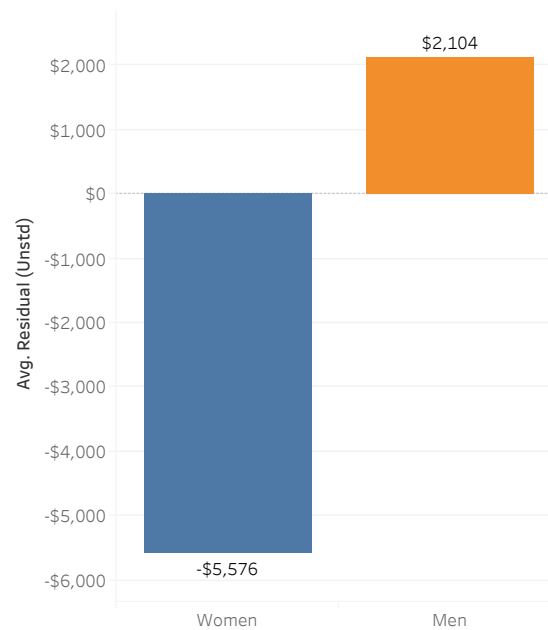
College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)
---	----------------------------	--	---	---------------	--	--

Average Salary by Gender and Rank

School/Division Management



Sex	Above or Below	Percentage
Women	Above the line	35%
	Below the line	65%
Men	Above the line	43%
	Below the line	57%

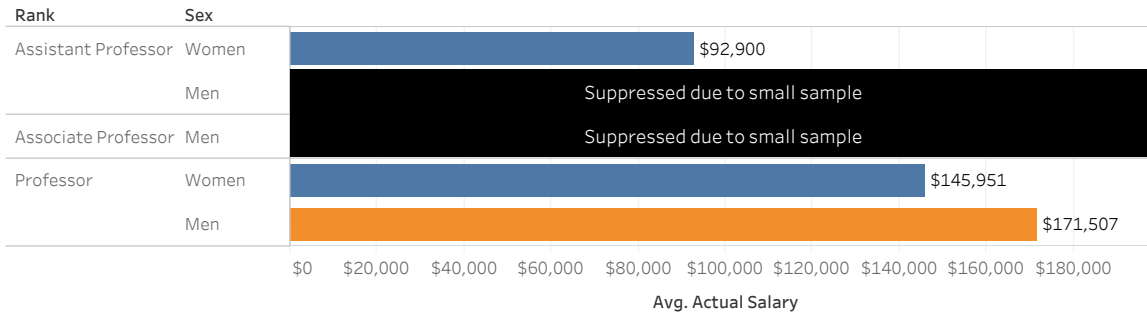


Faculty Salary Analysis

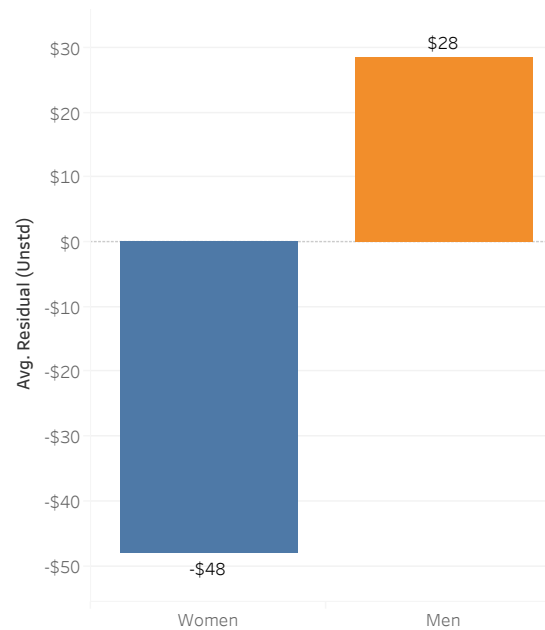
Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)
----------------------------	--	----------------------------------	---------------	--	--	---

Average Salary by Gender and Rank

School/Division
Law



Sex	Above or Below	
Women	Above the line	47%
	Below the line	53%
Men	Above the line	39%
	Below the line	61%

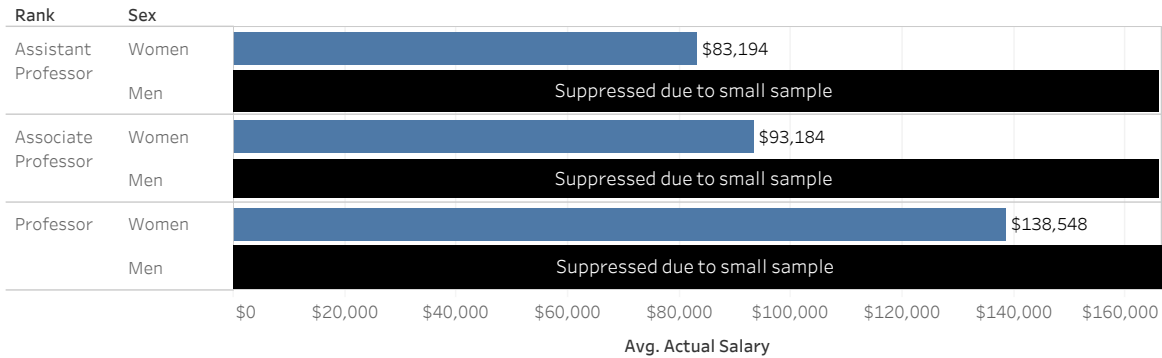


Faculty Salary Analysis

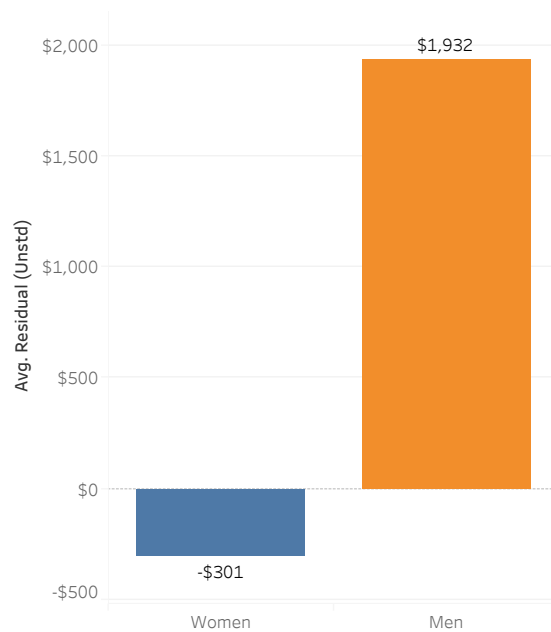
Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)	School of Dental Medicine
--	----------------------------------	---------------	--	--	---	---------------------------

Average Salary by Gender and Rank

School/Division
Nursing



Sex	Above or Below	Percentage
Women	Above the line	45%
	Below the line	55%
Men	Above the line	78%
	Below the line	22%

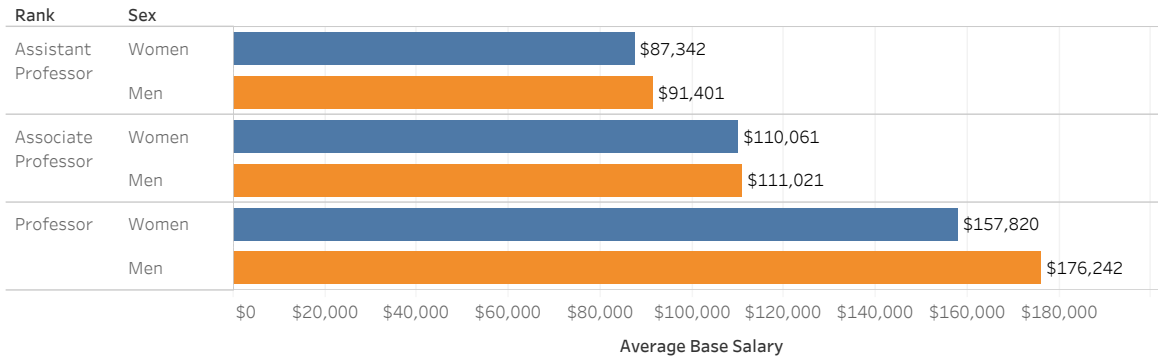


Faculty Salary Analysis

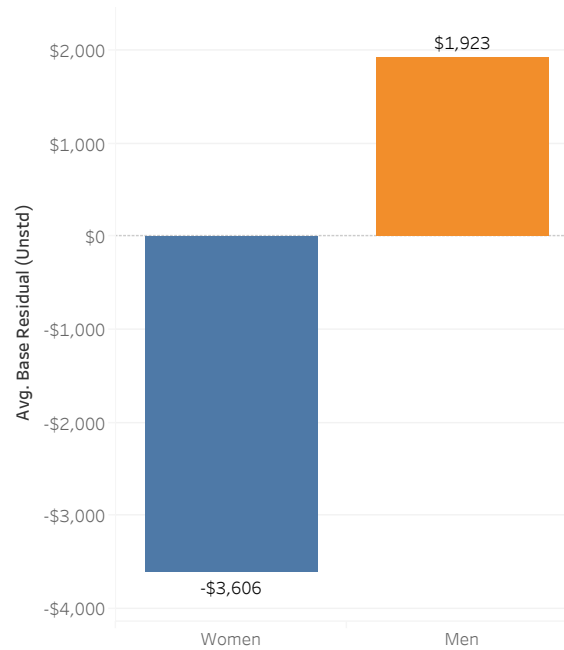
Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)	School of Dental Medicine	University General: Physical Education and Athletics
----------------------------------	---------------	--	--	---	---------------------------	--

Average Salary by Gender and Rank

School/Division
Medicine



Women	Above the line	47%
	Below the line	53%
Men	Above the line	52%
	Below the line	48%

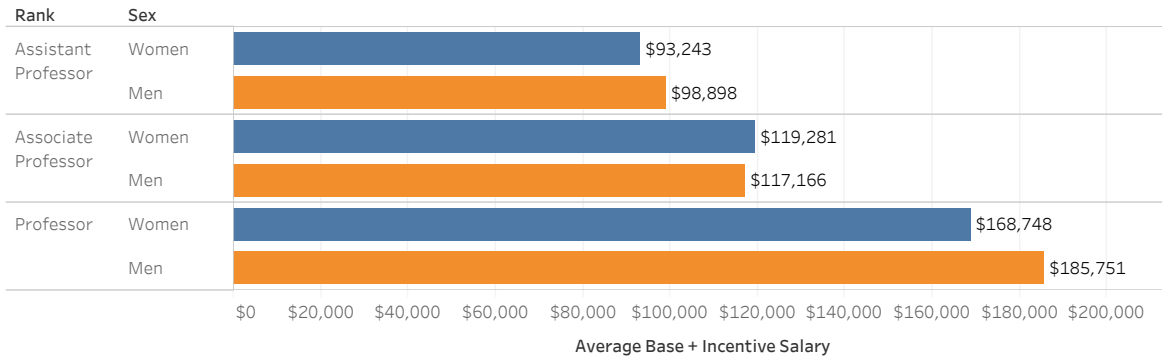


Faculty Salary Analysis

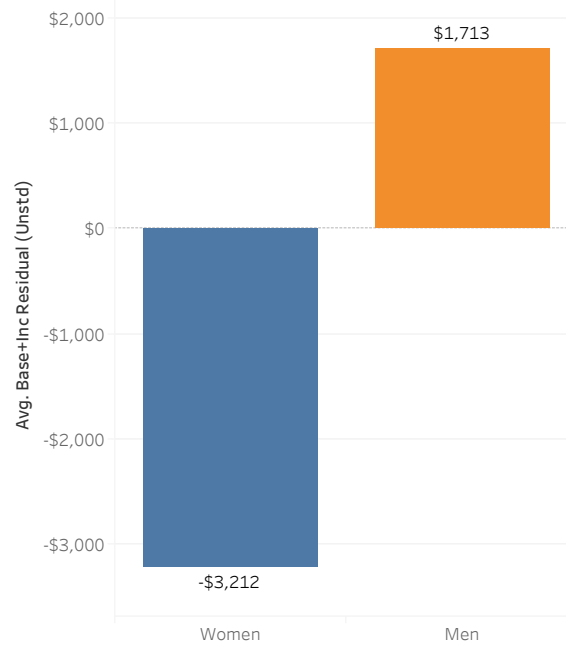
School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)	School of Dental Medicine	University General: Physical Education and Athletics	Summer and Administrative Salaries
---------------	--	--	---	---------------------------	--	------------------------------------

Average Salary by Gender and Rank

School/Division
Medicine



Women	Above the line	34%
	Below the line	66%
Men	Above the line	48%
	Below the line	52%

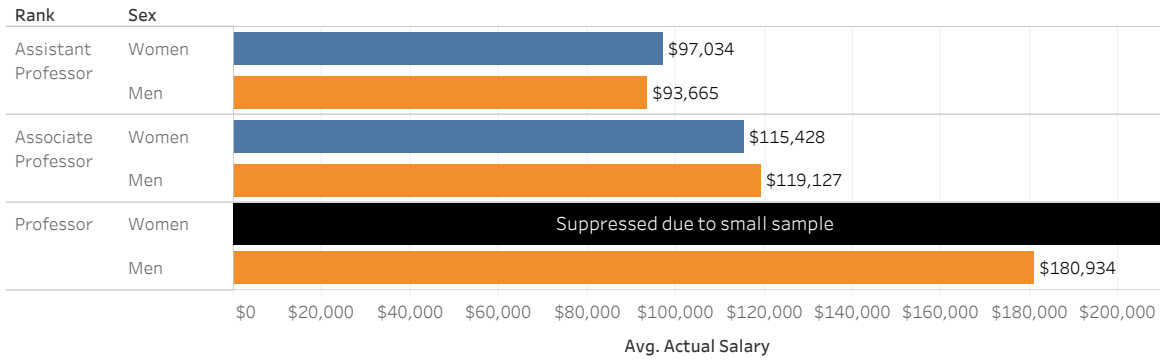


Faculty Salary Analysis

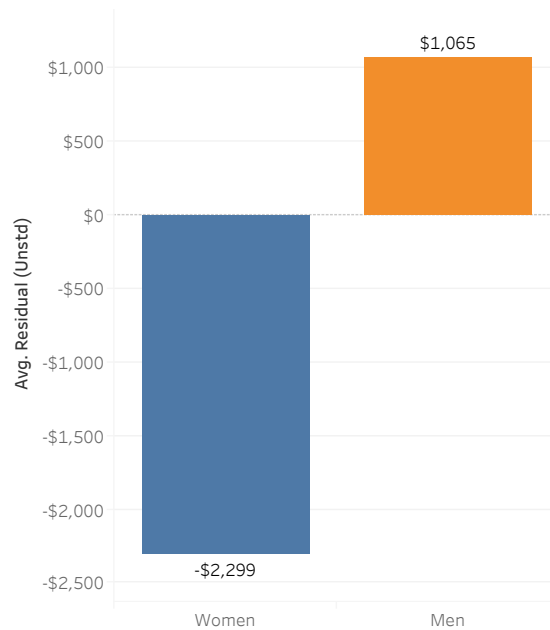
School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)	School of Dental Medicine	University General: Physical Education and Athletics	Summer and Administrative Salaries
---------------	--	--	---	----------------------------------	--	------------------------------------

Average Salary by Gender and Rank

School/Division
Dental Medicine



Sex	Above or Below	Percentage
Women	Above the line	31%
	Below the line	69%
Men	Above the line	41%
	Below the line	56%
	On the line	2%

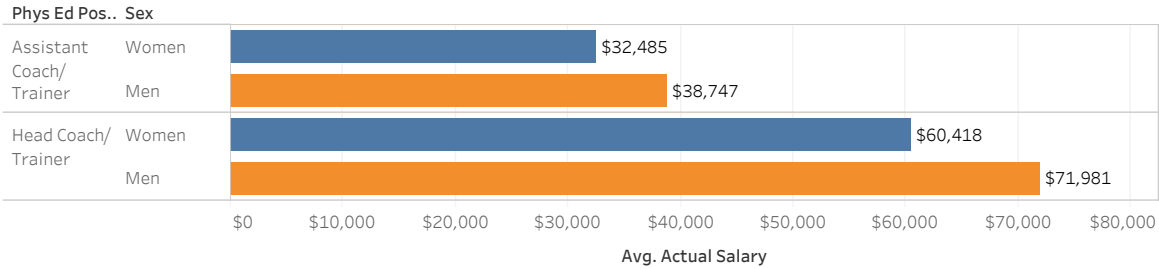


Faculty Salary Analysis

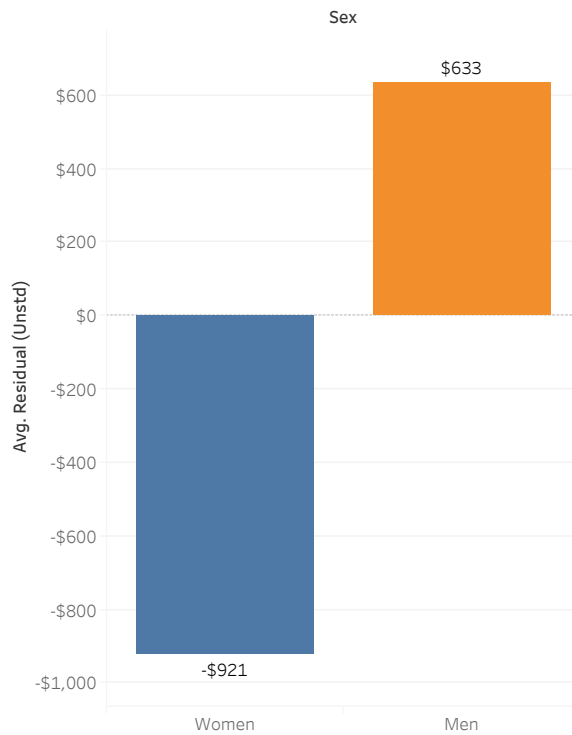
School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)	School of Dental Medicine	University General: Physical Education and Athletics	Summer and Administrative Salaries
---------------	--	--	---	---------------------------	---	------------------------------------

Average Salary by Gender and Rank

School/Division
Physical Education and A..



Sex	Above or Below	Percentage
Women	Above the line	47%
	Below the line	53%
Men	Above the line	56%
	Below the line	44%



Faculty Salary Analysis

School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences (Base Salary)	School of Medicine: Basic Sciences (Base+Incentive)	School of Dental Medicine	University General: Physical Education and Athletics	Summer and Administrative Salaries
---------------	--	--	---	---------------------------	--	---

Summer and Administrative Salaries

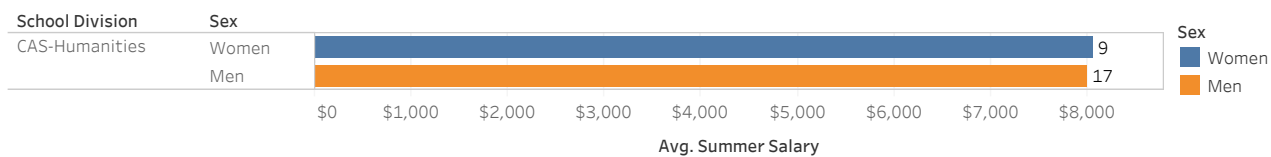
The next section provides data on Summer and Administrative salaries, broken down by school/division, for men and women.

Summer and Administrative Salaries

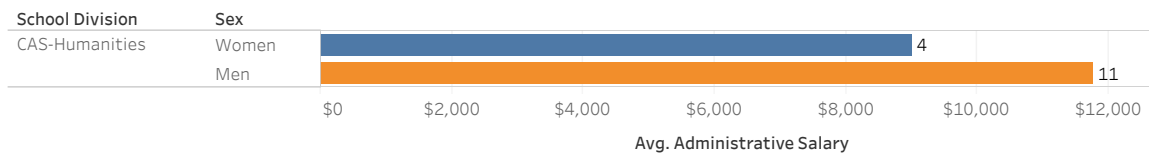
College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law
--	--	---	----------------------------	--	----------------------------------	---------------

Summer Salary

School Division
CAS-Humanities



Administrative Salary

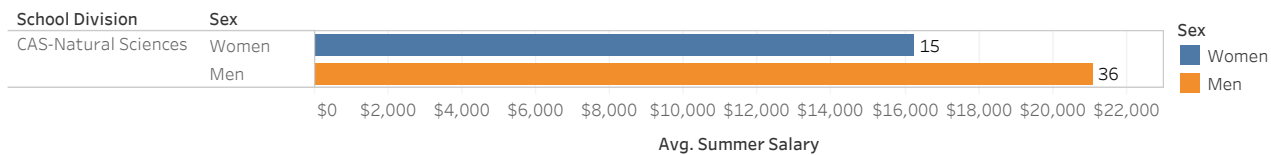


Summer and Administrative Salaries

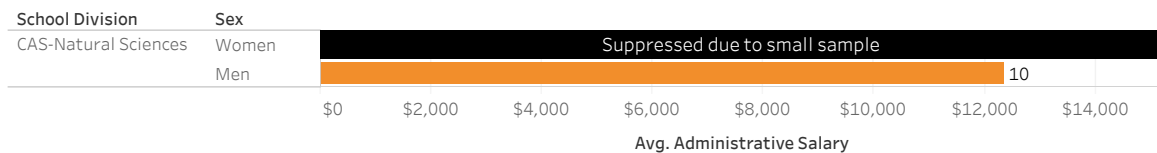
College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law
--	--	---	----------------------------	--	----------------------------------	---------------

Summer Salary

School Division
CAS-Natural Sciences



Administrative Salary

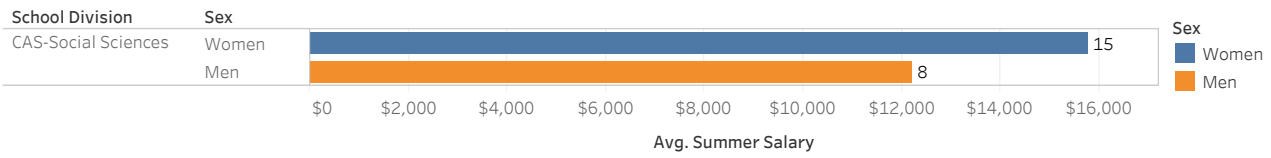


Summer and Administrative Salaries

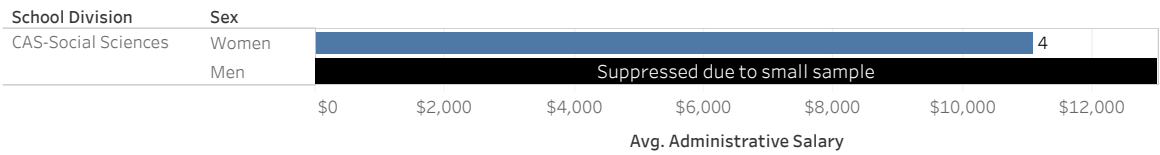
College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law
--	--	--	----------------------------	--	----------------------------------	---------------

Summer Salary

School Division
CAS-Social Sciences



Administrative Salary

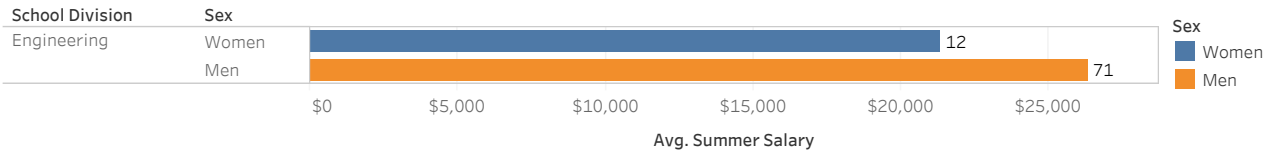


Summer and Administrative Salaries

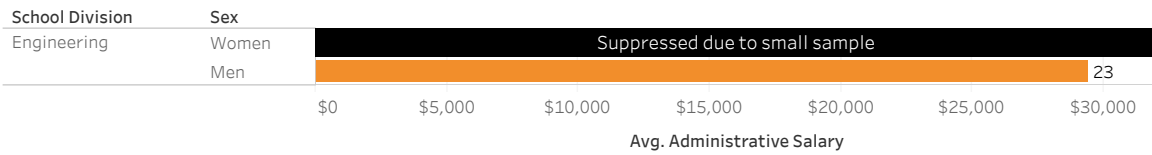
College of Arts and Sciences: Humanities	College of Arts and Sciences: Mathematics and Natural Sciences	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law
--	--	---	-----------------------------------	--	----------------------------------	---------------

Summer Salary

School Division
Engineering



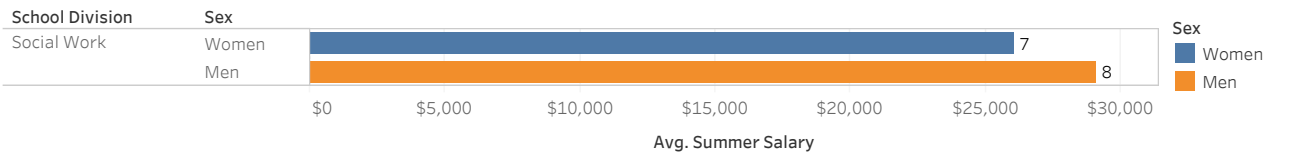
Administrative Salary



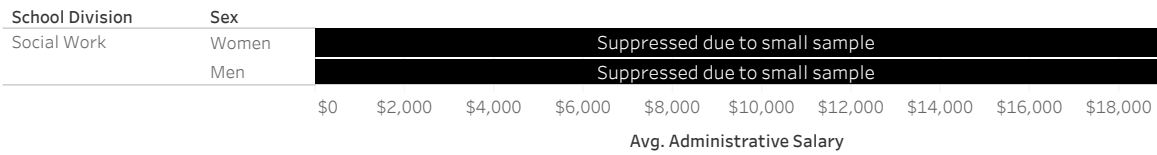
Summer and Administrative Salaries

College of Arts and Sciences: Mathematics an..	College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing
--	---	----------------------------	---	----------------------------------	---------------	--

Summer Salary



Administrative Salary

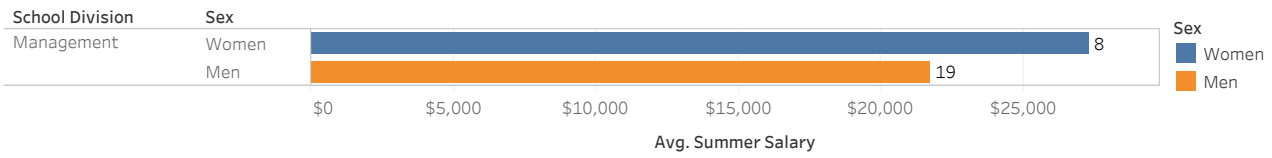


Summer and Administrative Salaries

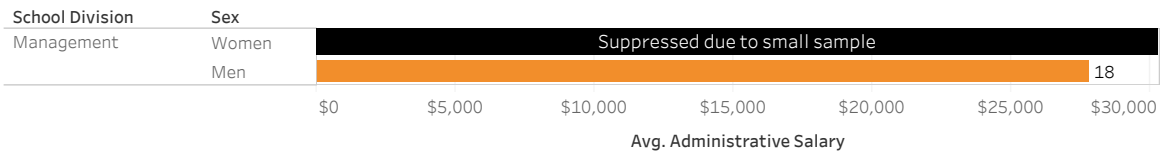
College of Arts and Sciences: Social Sciences	Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences
---	----------------------------	--	---	---------------	--	------------------------------------

Summer Salary

School Division
Management



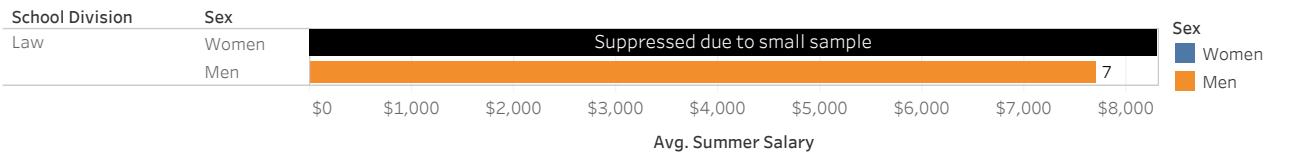
Administrative Salary



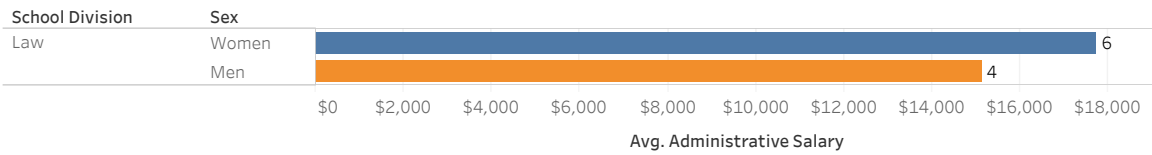
Summer and Administrative Salaries

Case School of Engineering	Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences	School of Dental Medicine
----------------------------	--	----------------------------------	---------------	--	------------------------------------	---------------------------

Summer Salary



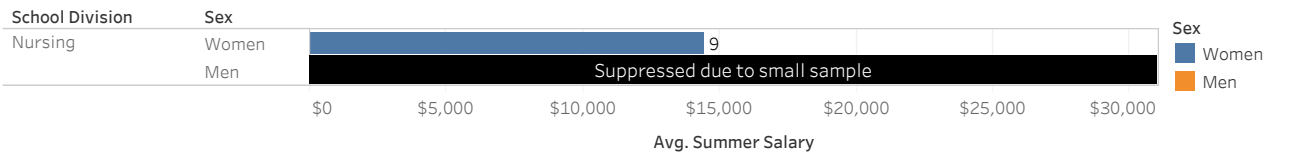
Administrative Salary



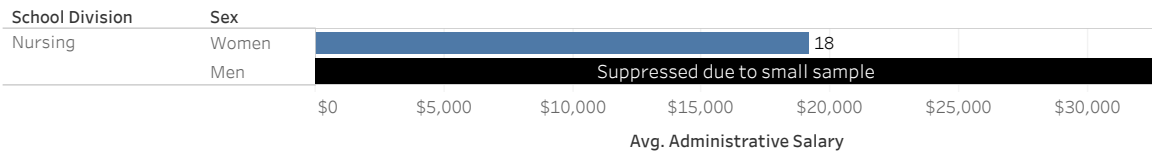
Summer and Administrative Salaries

Mandel School of Applied Social Sciences	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciences	School of Dental Medicine	University General: Physical Education and Athletics
--	----------------------------------	---------------	---	------------------------------------	---------------------------	--

Summer Salary



Administrative Salary



Summer and Administrative Salaries

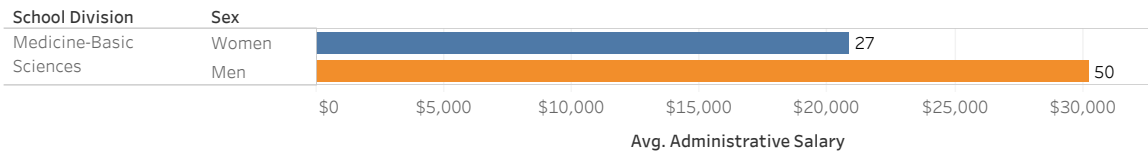
Mandel School of Applied Soc..	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Sciieces	School of Dental Medicine	University General: Physical Education and Athletics
--------------------------------	----------------------------------	---------------	--	---	---------------------------	--

Summer Salary

School Division
Medicine-Basic Sciences

Sex
■ Women
■ Men

Administrative Salary



Summer and Administrative Salaries

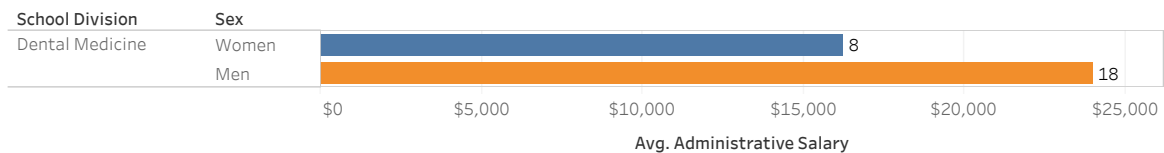
Mandel School of Applied Soc..	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Scieices	School of Dental Medicine	University General: Physical Education and Athletics
--------------------------------	----------------------------------	---------------	--	------------------------------------	----------------------------------	--

Summer Salary

School Division
Dental Medicine

Sex
■ Women
■ Men

Administrative Salary



Summer and Administrative Salaries

Mandel School of Applied Soc..	Weatherhead School of Management	School of Law	Frances Payne Bolton School of Nursing	School of Medicine: Basic Scieices	School of Dental Medicine	University General: Physical Education and Athletics
--------------------------------	----------------------------------	---------------	--	------------------------------------	---------------------------	--

Summer Salary

School Division
Physical Education and A..

Sex
■ Women
■ Men

Administrative Salary

School Division	Sex	
Physical Education and Athletics	Women	Suppressed due to small sample
	Men	Suppressed due to small sample

\$0 \$200 \$400 \$600 \$800 \$1,000 \$1,200 \$1,400 \$1,600 \$1,800 \$2,000 \$2,200

Avg. Administrative Salary

Longitudinal Analysis of Average Unstandardized Residuals

Longitudinal Analysis of Unstandardized Residual Values	College of Arts and Sciences: Humanities and Social Sciences	College of Arts and Sciences: Mathematics and Natural Sciences	Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sc..
---	--	--	--	-------------------------------	--	--------------------------------

Longitudinal Analysis

Data over the past six years were analyzed together to determine trends in the average unstandardized residual values (i.e., the difference between actual and predicted salaries). This part of the analysis focused strictly on the differences between men and women.

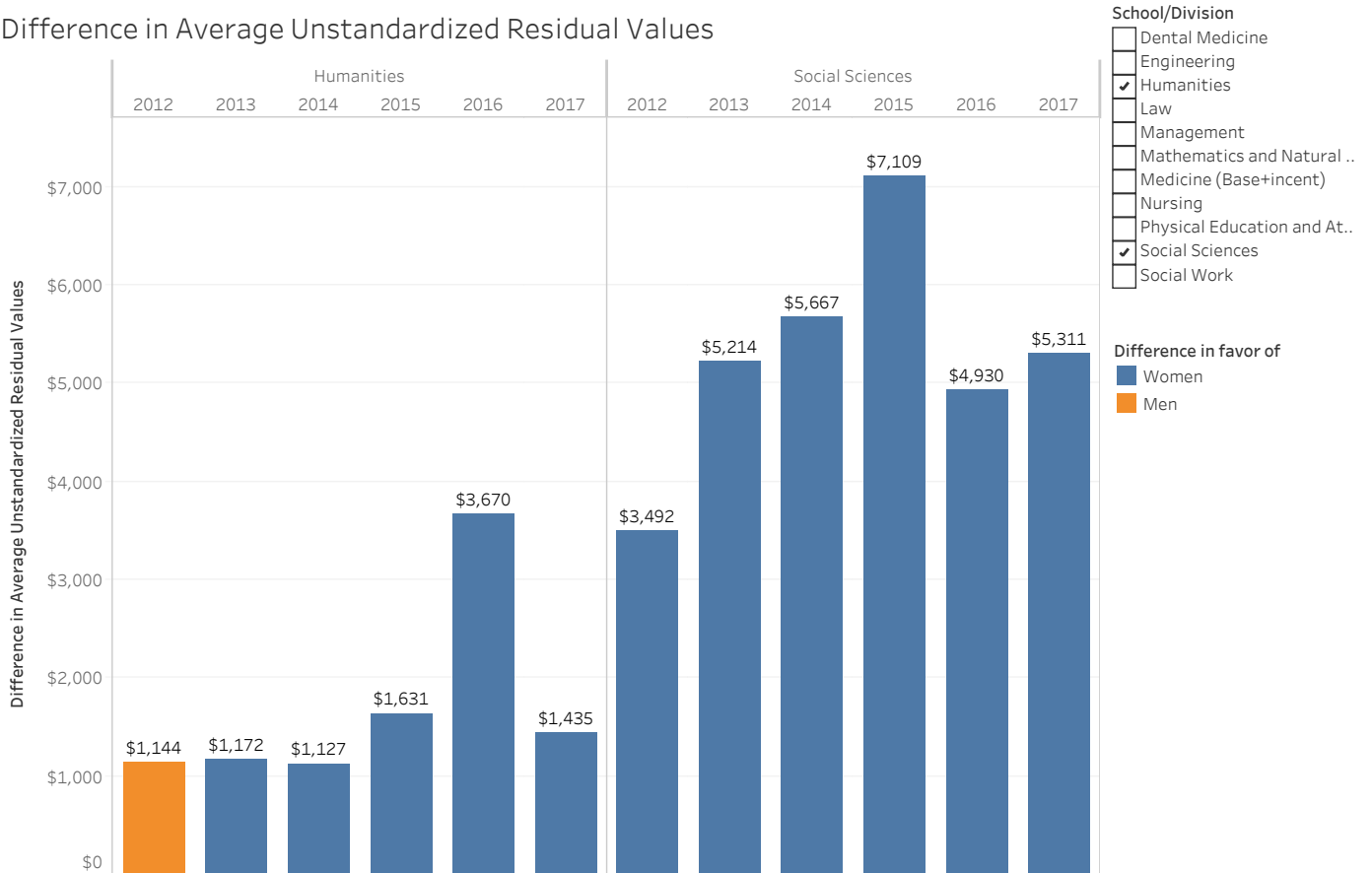
The charts that follow present the difference in average unstandardized residual values for men and women, broken down by school/division, over the past six years.

- Blue bars reflect women receiving higher salaries than predicted when compared to men; Orange bars reflect men receiving higher salaries than predicted when compared to women.
- As trends approach 0, they represent less disparate salaries between men and women.
- Trends that remain consistent or spread further reflect continued or growing discrepancies between salaries of men and women.

Longitudinal Analysis of Average Unstandardized Residuals

Longitudinal Analysis of Unstandardized Residual Values	College of Arts and Sciences: Humanities and Social Sciences	College of Arts and Sciences: Mathematics and Natural Sciences	Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sc..
---	--	--	--	-------------------------------	--	--------------------------------

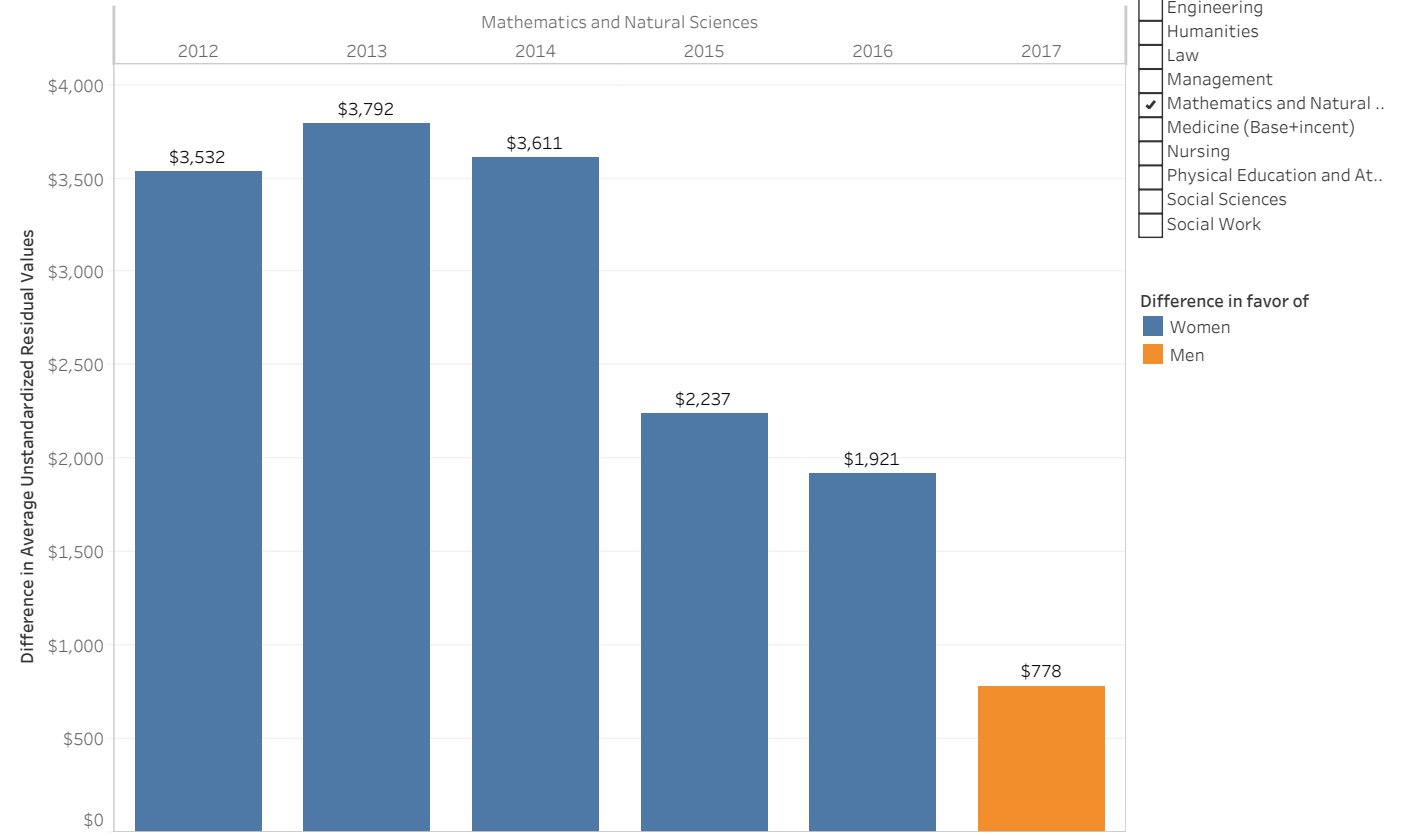
Difference in Average Unstandardized Residual Values



Longitudinal Analysis of Average Unstandardized Residuals

Longitudinal Analysis of Unstandardized Residual Values	College of Arts and Sciences: Humanities and Social Sciences	College of Arts and Sciences: Mathematics and Natural Sciences	Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sc..
---	--	--	--	-------------------------------	--	--------------------------------

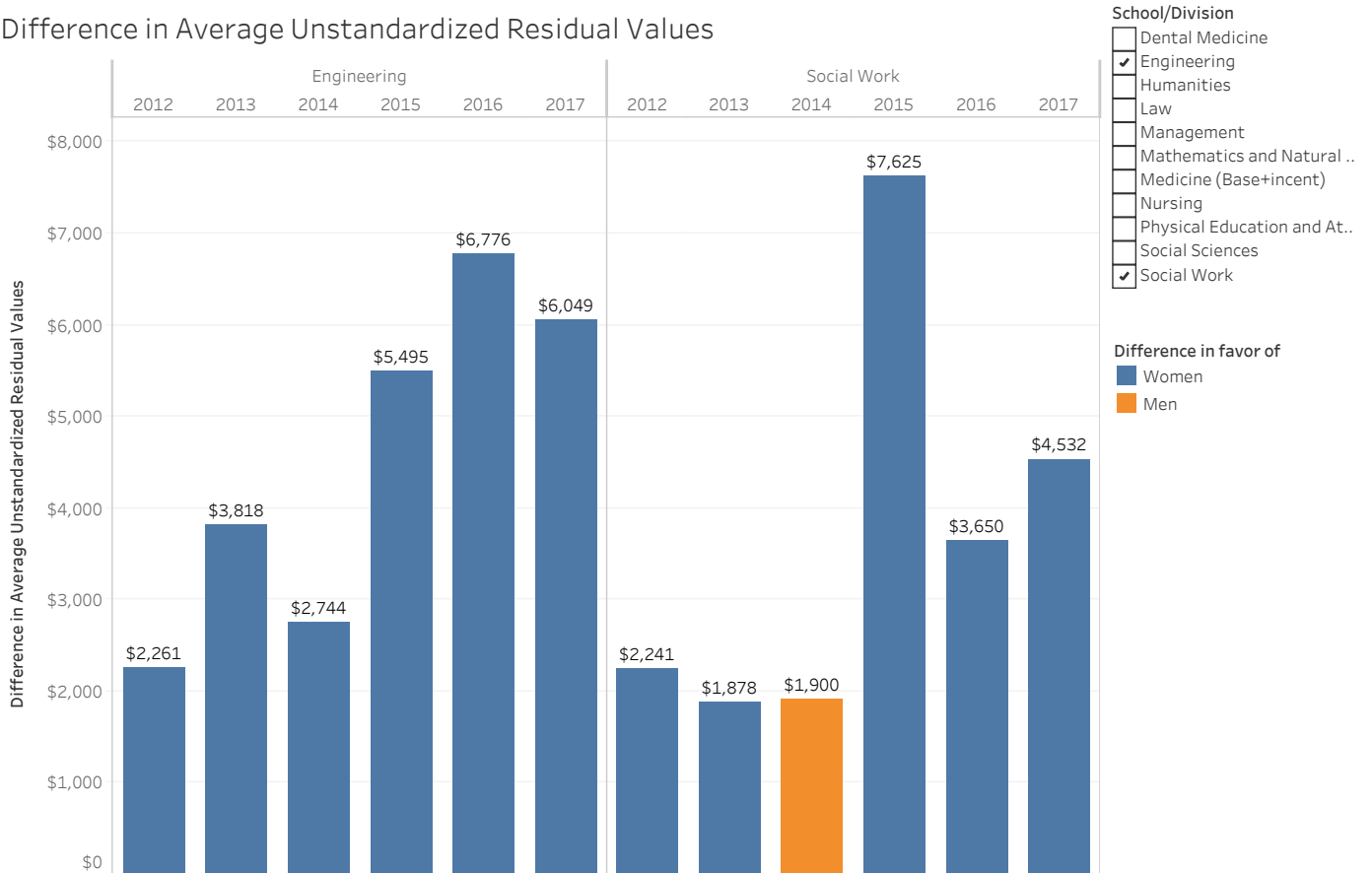
Difference in Average Unstandardized Residual Values



Longitudinal Analysis of Average Unstandardized Residuals

Longitudinal Analysis of Unstandardize.	College of Arts and Sciences: Humanities and Social Sciences	College of Arts and Sciences: Mathematics and Natural Sciences	Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)
---	--	--	---	-------------------------------	--	---

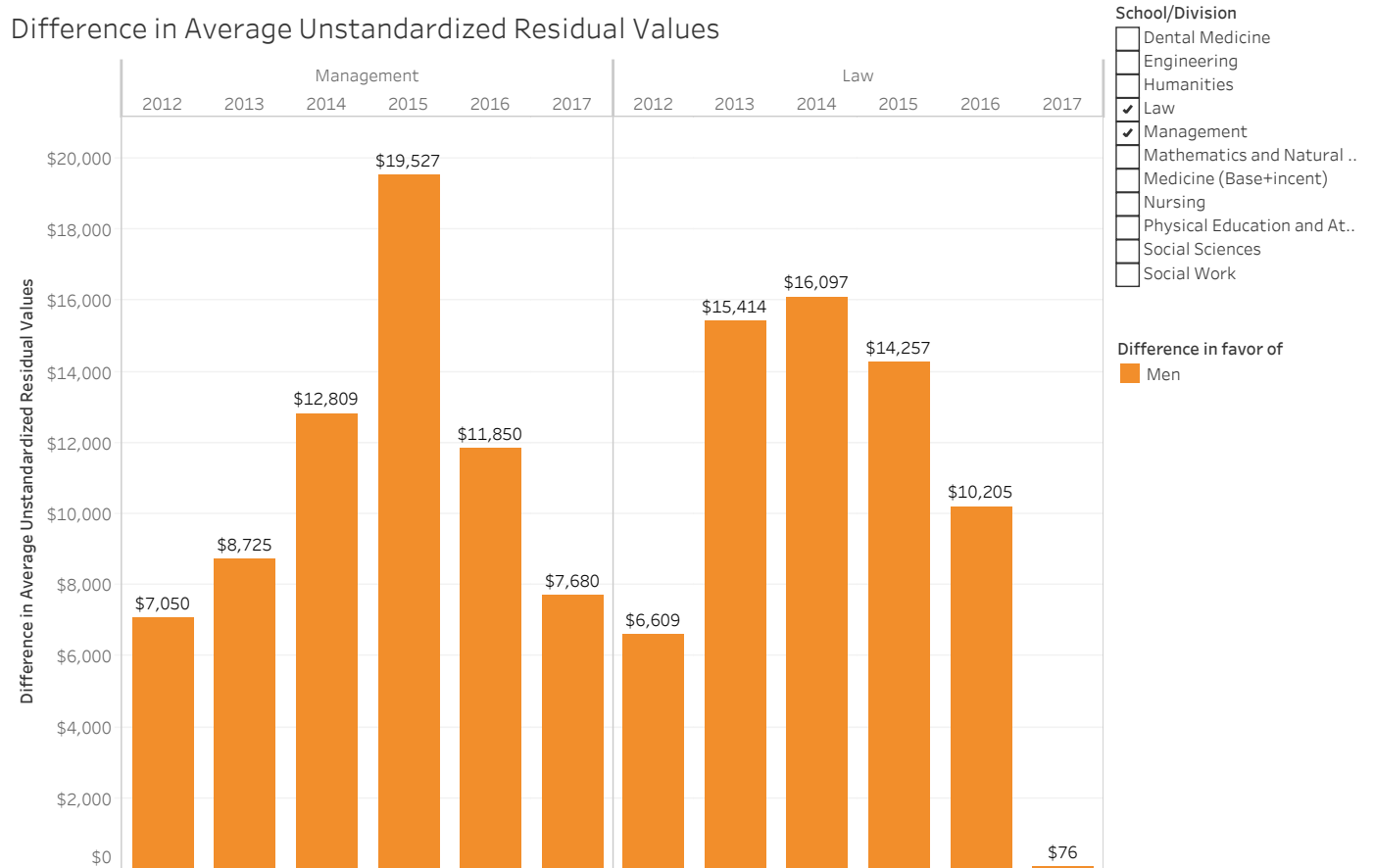
Difference in Average Unstandardized Residual Values



Longitudinal Analysis of Average Unstandardized Residuals

College of Arts and Sciences: Humanities and Social Sciences	College of Arts and Sciences: Mathematics and Natural Sciences	Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)	University General: Physical Education and Athletics
--	--	--	--------------------------------------	--	---	--

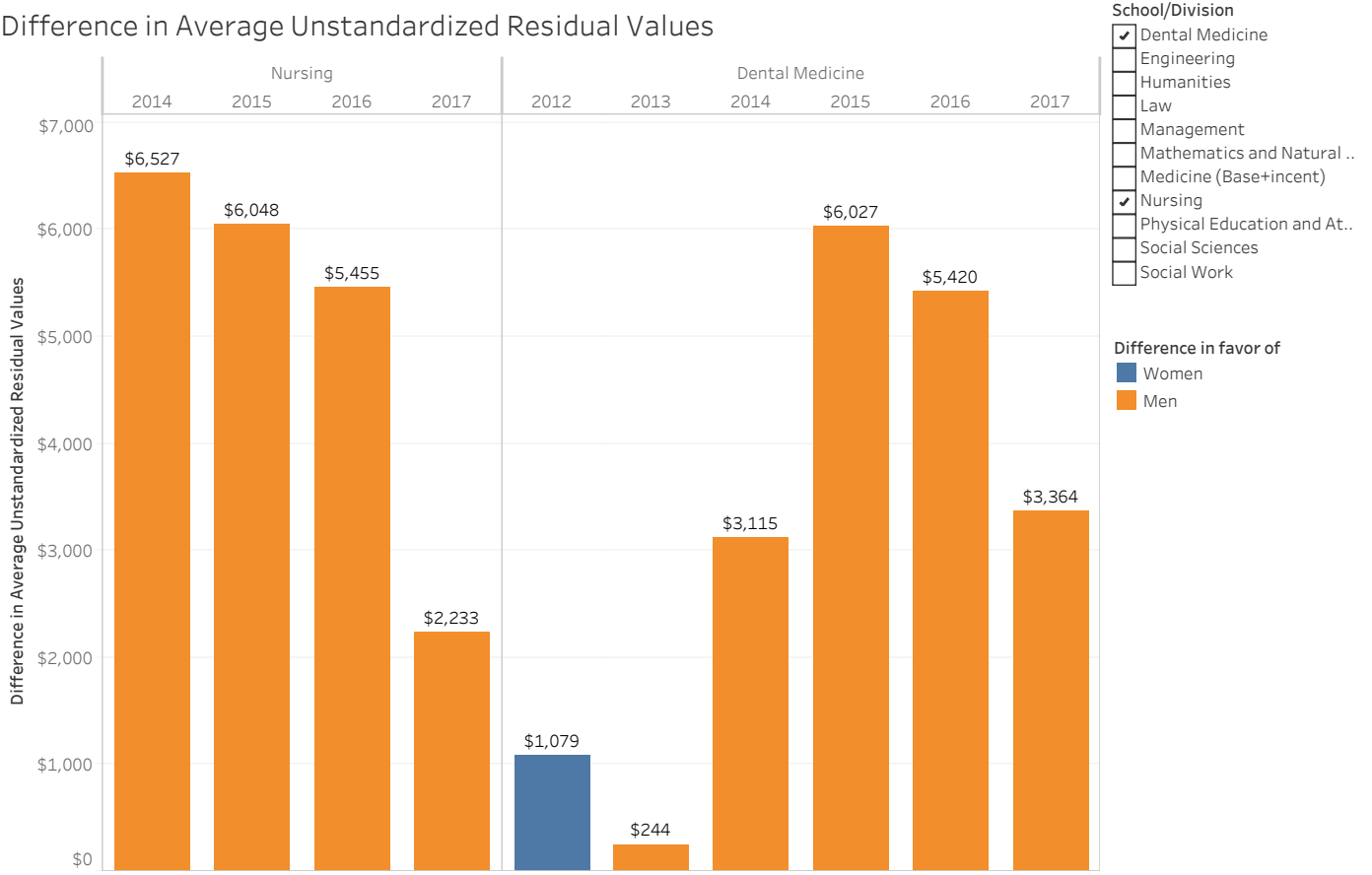
Difference in Average Unstandardized Residual Values



Longitudinal Analysis of Average Unstandardized Residuals

College of Arts and Sciences: Mathematics and Natural Sciences	Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)	University General: Physical Education and Athletics	Results
--	--	-------------------------------	---	---	--	---------

Difference in Average Unstandardized Residual Values

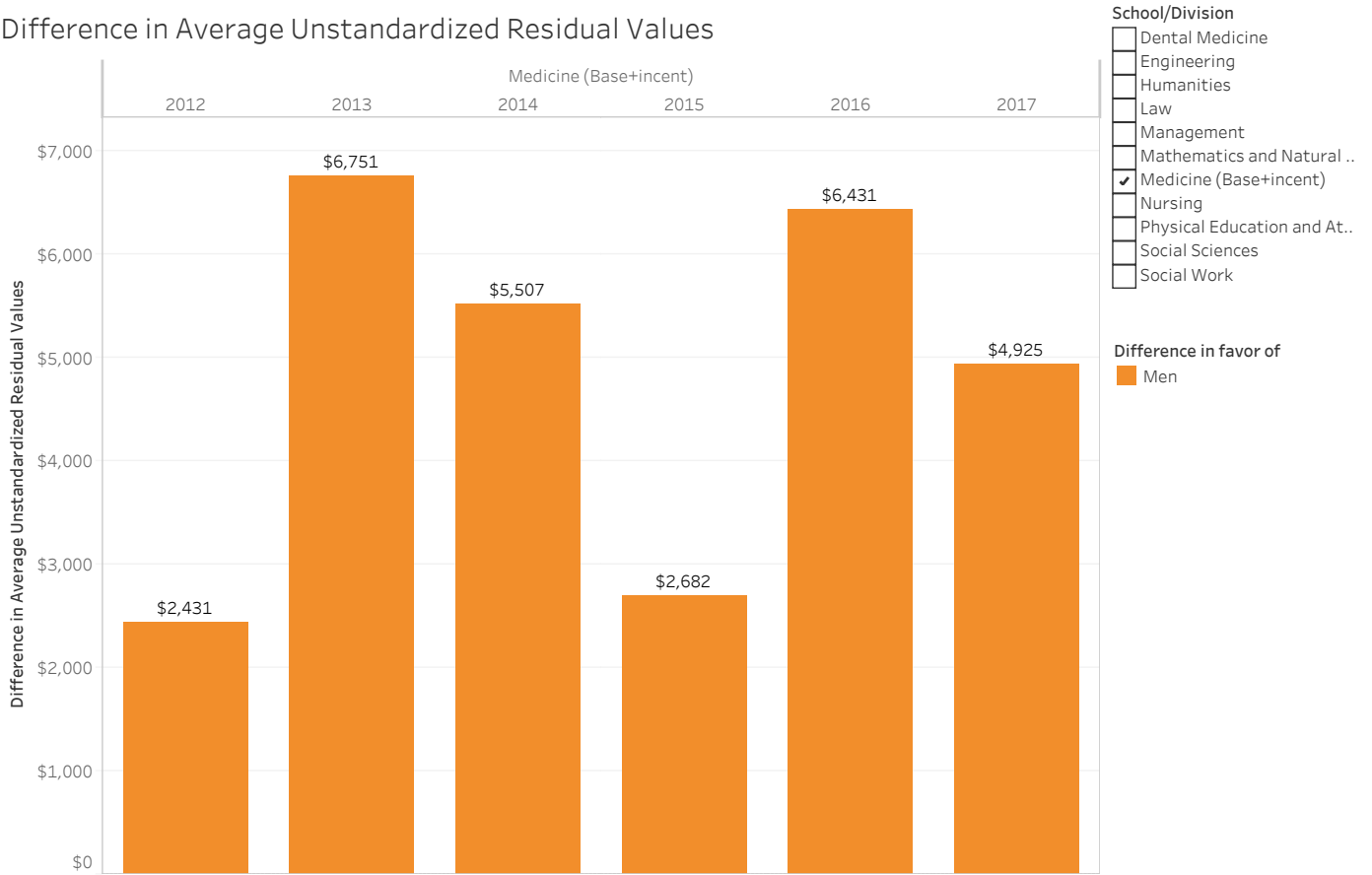


- School/Division**
- Dental Medicine
 - Engineering
 - Humanities
 - Law
 - Management
 - Mathematics and Natural ..
 - Medicine (Base+incent)
 - Nursing
 - Physical Education and At..
 - Social Sciences
 - Social Work
- Difference in favor of**
- Women
 - Men

Longitudinal Analysis of Average Unstandardized Residuals

Schools of Engineering and Social Work	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)	University General: Physical Education and Athletics	Results	Recommendations
--	-------------------------------	--	--	--	---------	-----------------

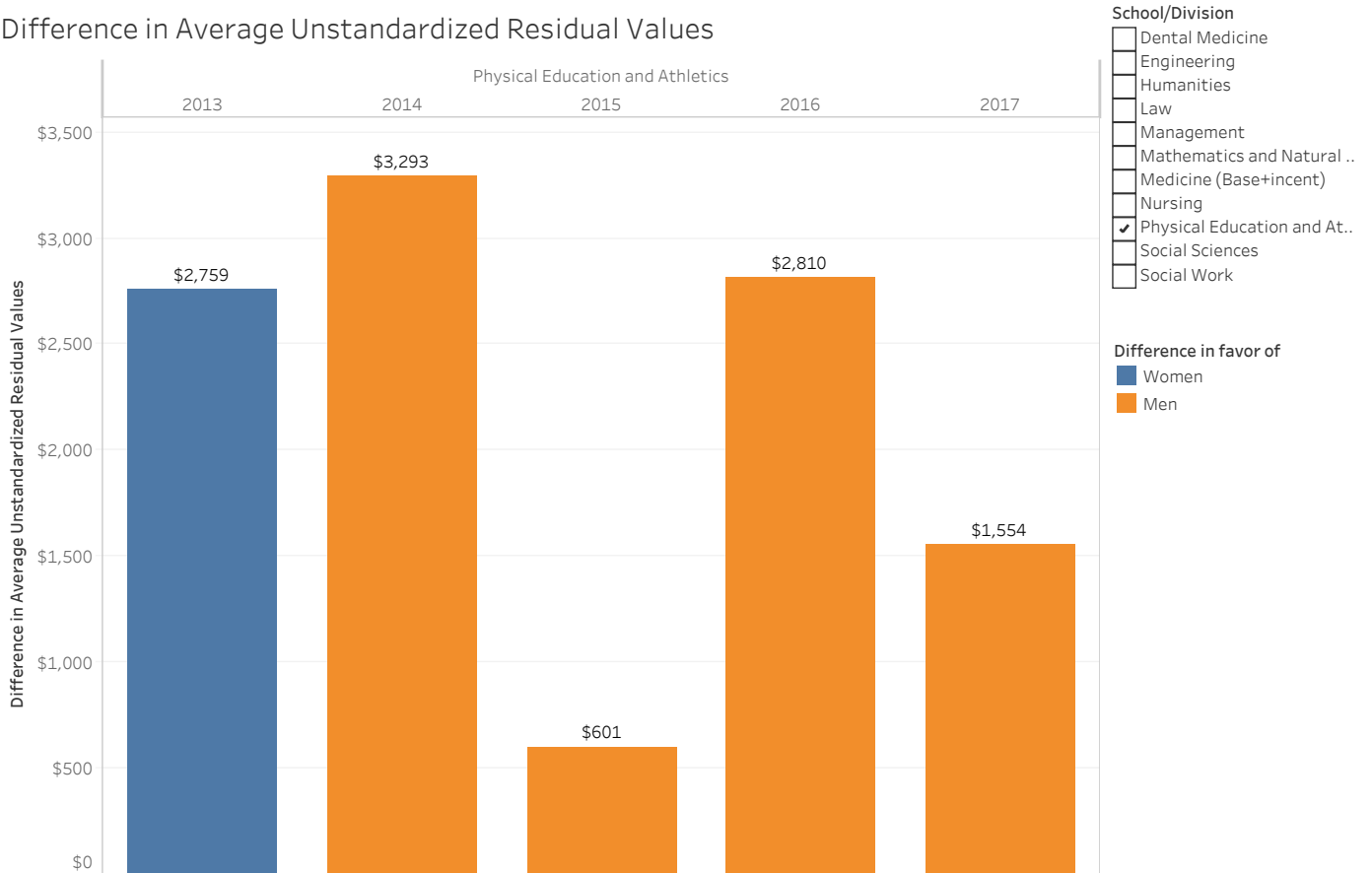
Difference in Average Unstandardized Residual Values



Longitudinal Analysis of Average Unstandardized Residuals

Schools of Engineering and S..	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)	University General: Physical Education and Athletics	Results	Recommendations
--------------------------------	-------------------------------	--	---	--	---------	-----------------

Difference in Average Unstandardized Residual Values



Longitudinal Analysis of Average Unstandardized Residuals

Schools of Engineering and S..	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)	University General: Physical Education and Athletics	Results	Recommendations
--------------------------------	-------------------------------	--	---	--	----------------	-----------------

Results

- The largest discrepancies in favor of men reside in the Schools of Medicine, Management, and Dental Medicine.
- The largest discrepancies in favor of women occur in Engineering, Social Science, and Social Work.
- Differences in salaries between men and women are smallest in Law, Mathematics and Natural Sciences, the Humanities, and Physical Education and Athletics.
- For all Schools and Divisions except Social Work and Social Science, the difference in average unstandardized residual values has moved closer to 0 over the past three years, suggesting less discrepancy in salaries due to sex.
- In Social Work and Social Science, women were more likely to receive salaries greater than predicted, and are trending upward toward further separation from men.

Longitudinal Analysis of Average Unstandardized Residuals

Schools of Engineering and S..	Schools of Management and Law	Schools of Nursing and Dental Medicine	School of Medicine: Basic Sciences (Base + Incentive)	University General: Physical Education and Athletics	Results	Recommendations
--------------------------------	-------------------------------	--	---	--	---------	-----------------

Recommendations

- Data on race/ethnicity should be included to allow the University and respective schools to explore issues related to inclusion, diversity, and equity.
- Metrics related to productivity could be included to help further explain potential salary discrepancies; however, this should be undertaken with sensitivity to differences across gender, subject area, and other considerations. Exploring productivity may only provide limited information and should be subject to discussion among faculty if found to be a useful predictor in such analyses.
- The data reflect continued movement toward salary alignment between men and women; however, discrepancies in several areas still exist and should be the the focus of advancement opportunities.