

COMMITTEE ON FACULTY WELFARE
Faculty Salary Analysis, May 2017

To: Academic Senate, Santa Cruz Division

The Committee on Faculty Welfare (CFW) annually reviews faculty salary comparative data and recently finalized its analysis of faculty salaries on the most recent data available, comparing UCSC with the other UC Campuses. The committee's latest analysis was completed in spring 2017. The data used in the analysis corresponds to the October 2015 payroll extract in the UC Office of the President Corporate Data Warehouse. This dataset does not reflect all 2015-16 personnel actions, nor the July 1, 2016 academic salary plan. The data contained salary information on 7,309 faculty members from all campuses except UC San Francisco, a primarily medical campus. Of these faculty, 1,532 were on the Business, Economics and Engineering (BEE) scale, and 5,777 were on the regular (REG) scale. In this analysis CFW also used archival data from previous years, namely from 2005 to 2015 for UCSC and for 2011 to 2015 for the other UC Campuses.

The 2016-17 CFW salary analysis focused on three aspects:

1. A comparison of median UCSC salaries at the Assistant Professor, Associate Professor, and Full Professor steps 1-5, steps 6-9 and Above Scale ranks with the 9 UC campus medians, including an analysis of the 75th and 90th percentile (corresponding, respectively, to the top 25% and 10% salaries at each rank/step);
2. A systematic study of the effect of the cost of living in comparing UCSC salaries with those UC-systemwide;
3. A study on the effects and trends of UCSC's "Special Salary Practice", also known as "Merit Boost Plan" in comparison with salary growth trends in the UC-system.

EXECUTIVE SUMMARY

Finding 1: UCSC's salaries on the REG scale continue to lag the system-wide median by up to 5%; the salary gap is much more significant at the 75th percentile (typically around 5% at *all ranks*) and at the 90th percentile (typically around 10% at *all ranks*); the salary gap at the 90th percentile is also very significant for the BEE scale.

Finding 2: Factoring in cost of living, UCSC's median salaries lag between 5% and 10% the system-wide medians consistently through all ranks on the REG scale; This finding is largely independent of the methodology and sources employed to assess cost of living, and of comparing UCSC's salaries to the 7- or 9-campus medians.¹

Finding 3: UCSC's "Special Salary Practice" (SSP) has *barely allowed UCSC's median salary growth to be on par with system-wide salary growth*, at all ranks. UCSC median salary growth

¹ The "7-campus" set excludes UCSF, UCB and UCLA; the "9-campus" set excludes UCSF.

with the SSP was nonetheless *slower than system-wide growth at all ranks/steps*: continuing with the current SSP would not even close current UCSC’s salary gaps. Our analysis indicates that eliminating the *current* SSP would widen UCSC’s median salary gaps at all ranks anywhere between 7% and 11% over the next 5 years and between 10% and 20% over the next 10 years.

1. COMPARISON OF UCSC MEDIAN SALARIES TO SYSTEM-WIDE SALARIES

The November 2016 Annual Report of Faculty Salary Competitiveness prepared by the UCSC Academic Personnel Office² utilized a 7-campus median metric (excluding UC Berkeley (UCB) and UC Los Angeles (UCLA)) to comparatively evaluate the competitiveness of UCSC faculty salaries. CFW strongly disagrees with this choice. First, it is important to note (as also noted in CFW’s Faculty Salary Analysis of January 2016³) that both UCLA and UCB are coastal/city campuses, with cost of living similar to Santa Cruz (see also the following Section 2). Second, our campus systematically uses cross-campus equity (including UCB and UCLA) as an important metric for the UC-wide system to aspire to (e.g., non-resident student enrollments, re-benching, student aid, admissions standards, etc.). Third, Senate (Senate Executive Committee and CFW) reports commenting on and assessing the Special Salary Practice/Merit Boost Plan have since inception (Senate-Administration Task Force on Faculty Salaries Report, September 10, 2008) insisted on the need to pursue the 9-campus median as a necessary goal of the program. As a result, CFW’s 2017 Faculty Salary Analysis will exclusively focus on comparing UCSC median salaries with the 9-campus median salaries.

Our analysis also focuses on the 75th and 90th percentile (i.e. the subset of 25% and 10% highest salaries at a given rank/step) salary comparison. It is the Committee’s opinion that competitive salaries for high-performing faculty are highly strategic, for reasons that include (i) preventing departures of faculty (“preventive retention”) and (ii) enhancing the quality of the campus’ research and reputation.

Figure 1 shows, for the REG salary scale, the percent difference between UCSC’s median salaries at the 5 rank/steps of (1) Assistant Professor (all steps), (2) Associate Professor (all steps), (3) Professor, steps 1-5, (4) Professor, steps 6-9 and (5) Professor, Above Scale, and the 9-campus median salaries at the same 5 ranks/steps. The blue columns indicate the median of all salaries at the given rank/step, while the red columns the 75th percentile (top 25% salaries at that rank/step) and the orange columns the 90th percentile (top 10%).

² UCSC Academic Personnel Office Annual Report of Faculty Salary Competitiveness, November 2016

³ Committee on Faculty Welfare Faculty Salary Analysis Academic Senate Report, January 2016

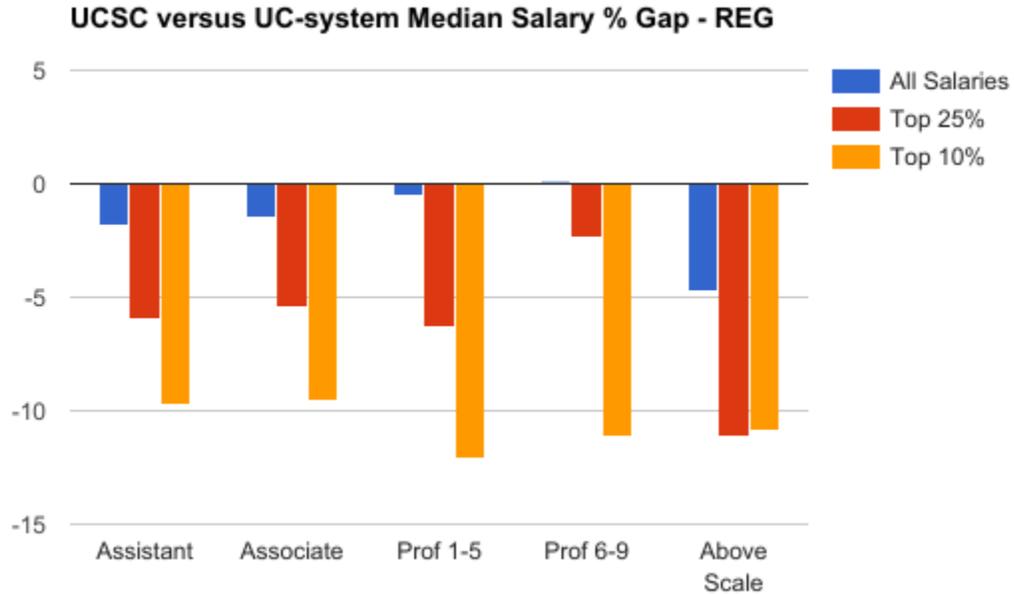


Figure 1: Salary gap between UCSC median salaries at a given rank/step and the University of California 9-campus median salaries, on the REG scale

Including all faculty at a given rank/step, *UCSC median salaries continue to lag behind the 9-campus median* with the one exception of Professor 6-9 (+0.1%). The largest gap is at the Professor Above Scale rank (-4.7%), followed by the Assistant Professor rank (-1.8%). UCSC salaries fare much worse in the top 25%, with gaps ranging from -2.4% at the Professor 6-9 rank to -11.1% at the Professor Above Scale rank, and typical gaps around 5%. The trend is increasingly worse for the top 10% earners, with typical gaps around 10%, with the largest gaps at the Professor 1-5 rank (-12.1%) and the smallest gap at the Associate Professor rank (-9.6%).

Figure 2 shows the same analysis for the BEE scale, where, however, the significance of our results is somewhat impacted by the much smaller statistics. The key trend of UCSC's median salaries very significantly lagging behind 9-campus levels for the top earners (90th percentile) is confirmed, with typical gaps between 10% and 20% across all ranks and steps for the BEE scale.

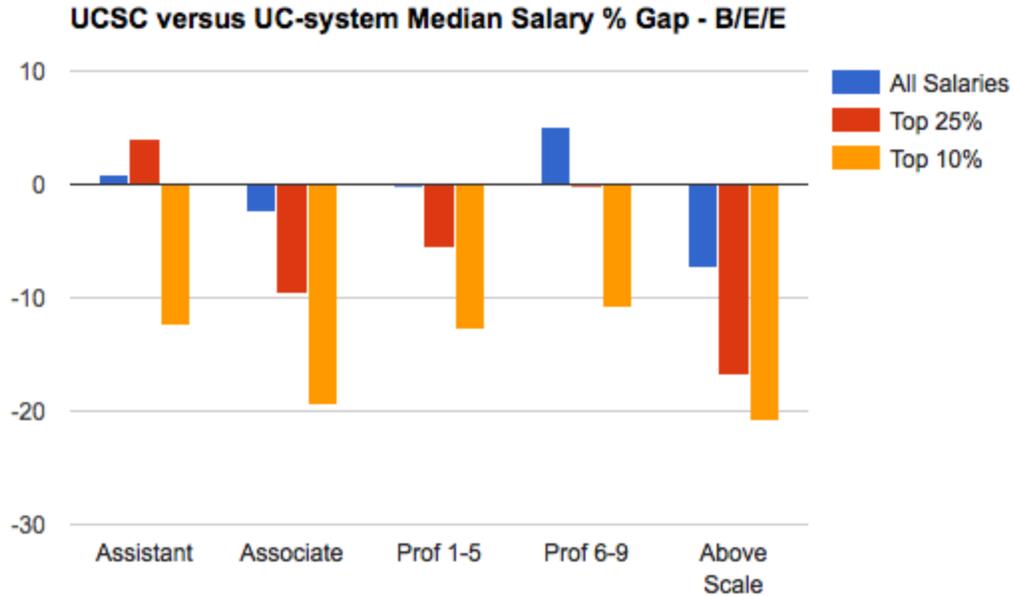


Figure 2: Salary gap between UCSC median salaries at a given rank/step and the University of California 9-campus median salaries, on the BEE scale

In conclusion, CFW’s analysis shows that:

1. UCSC’s median salaries, even without considering the significant impact of different cost of living across the nine campuses, *have not closed the gap to system-wide levels*;
2. The largest differences emerge among the top earners/highest performers at all ranks and steps, indicating that *high-performing faculty at UCSC tend to have much less competitive salaries than at other UC campuses*. This fact has important implications for retentions and for the campus reputation and image.

2. COST OF LIVING ANALYSIS

Factoring the cost of living is a key element in gauging the competitiveness of salaries. As indicated in the Senate Executive Committee (SEC) Recommendation on Faculty Salaries dated May 5, 2009 (p. 2): “Our longstanding position at the bottom end of the salary comparisons, in conjunction with the high cost of living in the Santa Cruz area, has intensified the salary disparities between our campus and the rest of the system. Thus the problem of low salaries in the UC system as a whole has particular local intensities.”

Last year, CFW decided to study the impact of cost of living on salary competitiveness and to carry out a comparative analysis with the 9-campus system. To estimate the potential systematic uncertainty in evaluating cost of living, CFW decided to adopt three different approaches and methods, described in detail below:

1. <http://www.relocationessentials.com/aff/www/tools/salary/col.aspx>

The website www.relocationessentials.com provides users with the ability to compare salaries between different US counties. The cost of living includes a variety of factors, from food and groceries to housing to utilities. We include in the figures below a snapshot of the indexes and monthly expenses used by the website for the comparison between UCSC's county (Santa Cruz) and UC Berkeley's county (Alameda).

CFW assumed for the analysis a starting salary of \$100,000 in Santa Cruz, and estimated the cost of living with the output "Adjusted for cost of living" (in the example, \$99,401). We then took the corresponding faculty salaries (in the example UC Berkeley) and adjusted them by the factor $(\$100,000)/(\$99,401)$.

2. <http://livingwage.mit.edu>

The second tool we employed to estimate cost of living was the Living Wage Calculator, developed in the Department of Urban Studies and Planning at the Massachusetts Institute of Technology. The rationale behind Living Wage, and what makes it relevant for this analysis, is the notion that "Recently, in a number of high-cost communities, community organizers and citizens have successfully argued that the prevailing wage offered by the public sector and key businesses should reflect a wage rate required to meet minimum standard of living. Therefore we have developed a living wage calculator to estimate the cost of living in your community or region. The calculator lists typical expenses, the living wage and typical wages for the selected location."⁴ The living wage model is "a market-based approach that draws upon geographically specific expenditure data related to a family's likely minimum food, childcare, health insurance, housing, transportation, and other basic necessities (e.g. clothing, personal care items, etc.) costs. The living wage draws on these cost elements and the rough effects of income and payroll taxes to determine the minimum employment earnings necessary to meet a family's basic needs while also maintaining self-sufficiency."

For our benchmark cost of living assessment, we adopted estimates based on the Metropolitan Statistical Areas where UC campuses are located, and on costs for a typical family with two adults and two children. The Living Wage Calculator then estimates the cost of living by the following basic formula:⁵

Basic needs budget = Food cost + childcare cost + (insurance premiums + health care costs) + housing cost + transportation cost + other necessities cost

Living wage = Basic needs budget + (basic needs budget*tax rate)

The comparison across different campuses was then done by normalizing salaries in a given

⁴ livingwage.mit.edu

⁵ Details of the cost estimates for each individual component are given at <http://livingwage.mit.edu/resources/Living-Wage-User-Guide-and-Technical-Notes-2016.pdf>.

campus to the cost of living in the associated Metropolitan Statistical Area. Figure 3 below illustrates a typical breakdown of cost of living estimate from livingwage.mit.edu.

Typical Expenses

These figures show the individual expenses that went into the living wage estimate. Their values vary by family size, composition, and the current location.

Annual Expenses	1 Adult	1 Adult 1 Child	1 Adult 2 Children	1 Adult 3 Children	2 Adults (1 Working)	2 Adults (1 Working) 1 Child	2 Adults (1 Working) 2 Children	2 Adults (1 Working) 3 Children	2 Adults (1 Working Part Time) 1 Child*	2 Adults	2 Adults 1 Child	2 Adults 2 Children	2 Adults 3 Children
Food	\$3,560	\$5,390	\$8,023	\$10,601	\$6,527	\$8,260	\$10,608	\$12,889		\$6,527	\$8,260	\$10,608	\$12,889
Child Care	\$0	\$7,411	\$10,111	\$12,812	\$0	\$0	\$0	\$0		\$0	\$7,411	\$10,111	\$12,812
Medical	\$1,998	\$6,439	\$6,152	\$6,313	\$5,066	\$6,152	\$6,313	\$6,170		\$5,066	\$6,152	\$6,313	\$6,170
Housing	\$11,868	\$19,248	\$19,248	\$25,488	\$14,376	\$19,248	\$19,248	\$25,488		\$11,868	\$19,248	\$19,248	\$25,488
Transportation	\$3,768	\$7,155	\$9,346	\$10,196	\$7,155	\$9,346	\$10,196	\$10,231		\$7,155	\$9,346	\$10,196	\$10,231
Other	\$2,799	\$4,565	\$5,497	\$6,845	\$4,565	\$5,497	\$6,845	\$6,235		\$4,565	\$5,497	\$6,845	\$6,235
Required annual income after taxes	\$23,993	\$50,207	\$58,377	\$72,254	\$37,689	\$48,503	\$53,210	\$61,013		\$35,181	\$55,914	\$63,321	\$73,825
Annual taxes	\$3,786	\$8,883	\$10,711	\$13,962	\$6,339	\$8,513	\$9,536	\$11,372		\$5,995	\$10,144	\$11,851	\$14,324
Required annual income before taxes	\$27,779	\$59,090	\$69,088	\$86,217	\$44,028	\$57,016	\$62,745	\$72,385	\$66,058	\$41,176	\$66,058	\$75,171	\$88,149

Figure 3: Typical expenses for the Santa Cruz-Watsonville Metropolitan Statistical Area. The figure used in CFW's analysis in this case is \$75,171.

3. Bureau of Economic Analysis (BEA)⁶

Our third and last estimate of comparative cost of living across the nine UC campuses is based on Regional Price Parities (RPP) based on the “All items” index for the 9 metropolitan statistical areas corresponding to the locations of the nine UC campuses as developed by the Bureau of Economic Analysis.

As the BEA explains,⁷ “Regional price parities (RPPs) are regional price levels expressed as a percentage of the overall national price level for a given year. The price levels are determined by the average prices paid by consumers for the mix of goods and services consumed in each region. Taking the ratio of RPPs shows the difference in price levels across regions.” This is exactly the procedure we employ here: normalizing each one of the UC campus salary levels to the RPP “All items” index corresponding to the Metropolitan Statistical Area where the given campus resides.

We list below the most recent available RPP (2014), as well as the corresponding value for the United States as a whole.

⁶ CFW would like to thank Professor Kenneth Kletzer for suggesting the use of BEA for this analysis

⁷ <https://www.bea.gov/regional/definitions/>

RPP1 Regional Price Parities

RPPs: All items (index)

Bureau of Economic Analysis

Metropolitan Statistical Area

GeoFips	GeoName	2014
00999	United States (Nonmetropolitan Portion)	87.8
31080	Los Angeles-Long Beach-Anaheim, CA (Metropolitan Statistical Area)	117
32900	Merced, CA (Metropolitan Statistical Area)	95.5
40140	Riverside-San Bernardino-Ontario, CA (Metropolitan Statistical Area)	105.9
40900	Sacramento--Roseville--Arden-Arcade, CA (Metropolitan Statistical Area)	102.5
41740	San Diego-Carlsbad, CA (Metropolitan Statistical Area)	115.9
41860	San Francisco-Oakland-Hayward, CA (Metropolitan Statistical Area)	121.3
42100	Santa Cruz-Watsonville, CA (Metropolitan Statistical Area)	121.8
42200	Santa Maria-Santa Barbara, CA (Metropolitan Statistical Area)	108.8

Legend / Footnotes:

The 2008-14 Regional Price Parities were estimated using statistical area delineations published by the Office of Management and Budget in February 2013.

Last updated: July 7, 2016-- new estimates for 2014; revised estimates for 2012-2013.

Figures 6 and 7 illustrate UCSC's median salary gap for selected ranks and steps, for the REG (fig.5) and BEE (fig.6) salary scales, to the 9-campus median salaries *with* and *without* (blue columns) adjusting for cost living. The red columns correspond to metric 1. (relocationessentials) the yellow columns to metric 2. (livingwage.mit.edu), and the green columns to metric 3. (BEA), with the procedures described above.

The first rather striking aspect of figures 5 and 6 is the relative consensus across the three metrics employed to assess the effect of cost of living: the three different methods yield results that agree typically to within 2% or so (especially where large enough statistics is available). We find that relocationessentials.com tends to produce the smallest effect in the amplification of UCSC's median salary gaps and BEA the largest.

The overarching finding is clear: adjusting for cost of living, UCSC median salaries lag dramatically behind UC-wide median levels. Specifically, on the REG scale, at the Assistant Professor level while the nominal gap in median salaries is -1.8%, the cost-of-living adjusted gap is estimated to be between -10.6% (livingwage.mit.ed) and -13.5% (BEA); similarly, while nominally UCSC's median salaries at the Assistant Professor level on the BEE are 0.8% greater than the 9-campus median, the gap is actually between -7.7% and -11.4% factoring in cost of living.

Similar conclusions hold for all rank and steps. On the REG scale the gaps in median salaries range between -8.4% and -13.5% according to the BEA comparison, and between -5.7% and -11.4% according to relocationessentials.com, depending on rank and step.

We conclude that since for all practical purposes cost of living is a crucial factor in assessing a job offer or for a retention offer, this variable should be carefully accounted for. For the purpose

of faculty welfare, the relevant metric is not absolute dollar amount, but dollar amount compared to cost of living. We conclude that *UCSC's salary gap compared to other UC campuses continues to be at dramatically high levels, making our campus inherently less competitive on the job market, and severely impacting the welfare of UCSC faculty compared to peer campuses in the UC system.*

Finally, although not relevant for our conclusions, our analysis finds that including cost of living makes it essentially irrelevant to use a 7- or 9-campus comparison, indicating that UCB and UCLA salaries are *de facto* adjusted for the relatively higher cost of living, and therefore their inclusion does not change the cost-of-living-adjusted figures.

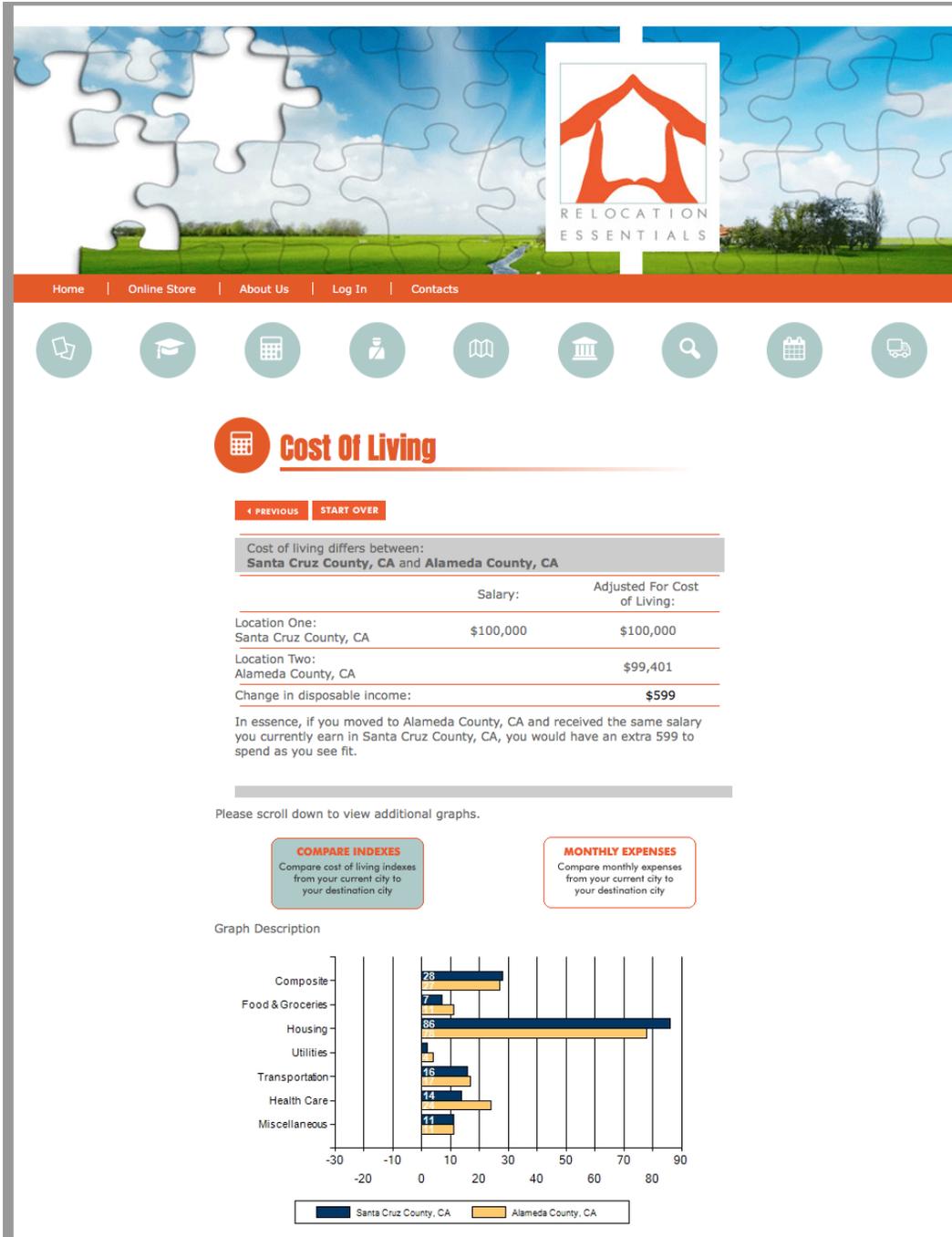


Figure 4 A snapshot of the cost of living calculation from the relocationessentials website

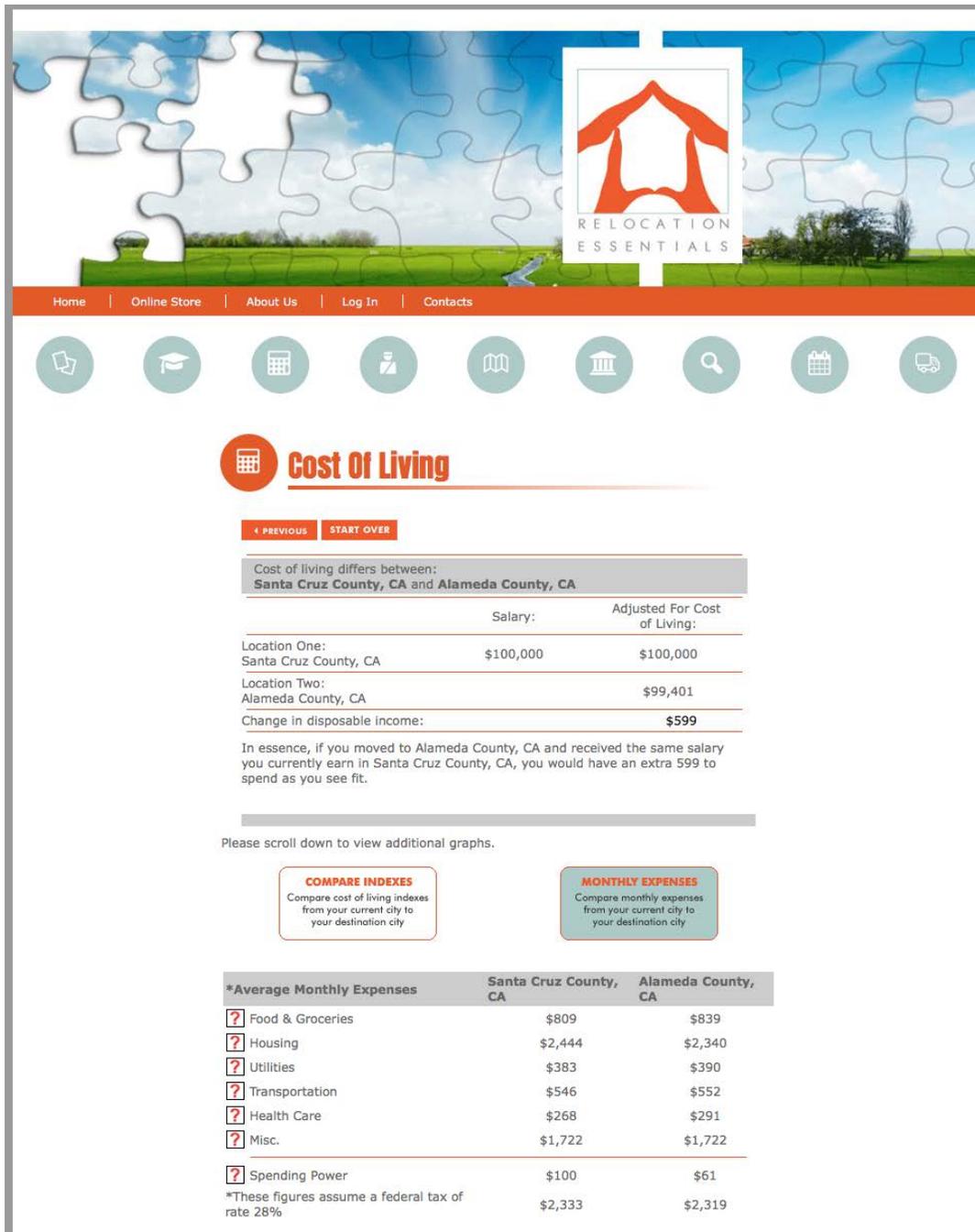


Figure 5: Snapshot from relocationessential on the basket of costs included in the evaluation of cost of living

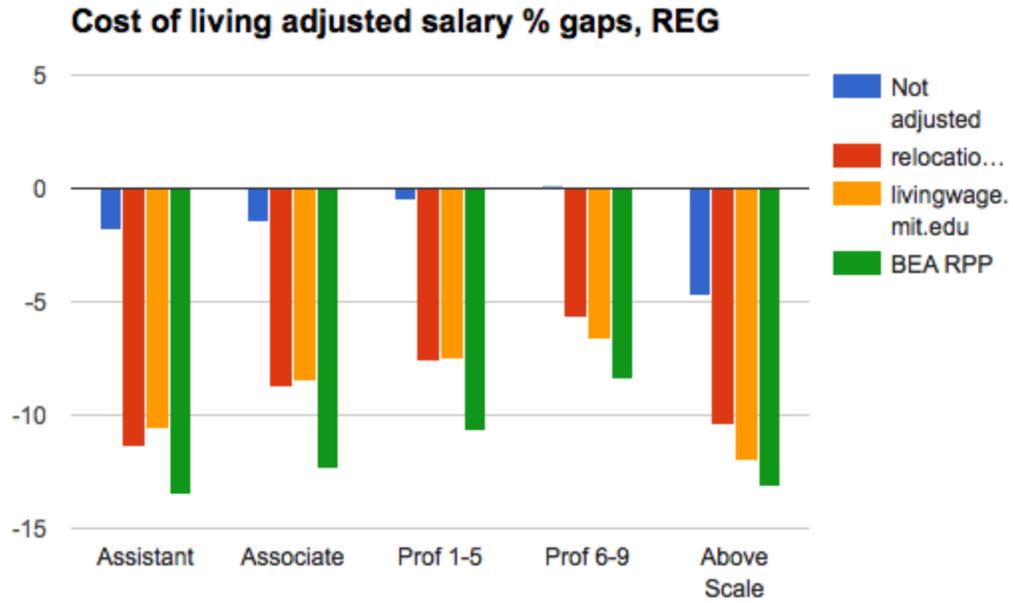


Figure 6: UCSC median salary gap without (blue) and with (other columns) cost of living adjustment compared to the 9-campus median, REG scale

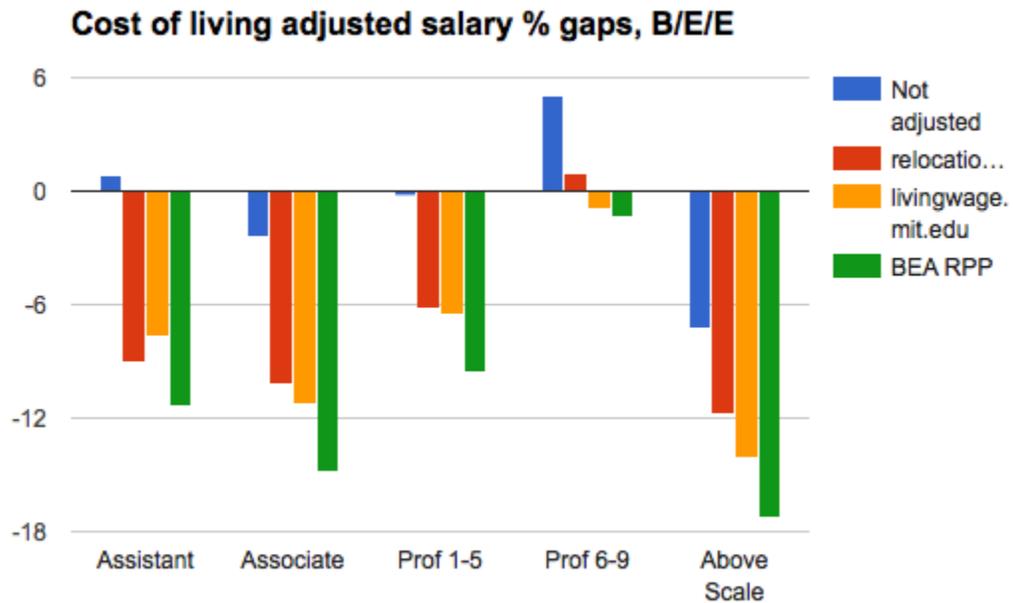


Figure 7: UCSC median salary gap without (blue) and with (other columns) cost of living adjustment compared to the 9-campus median, BEE scale

4. SPECIAL SALARY PRACTICE ANALYSIS

UCSC’s Special Salary Practice (SSP), also known as “Merit Boost Plan,” initiated in 2008-09 on the recommendation of the Administration/Senate Task Force on Salaries by the administration, in cooperation with the Committee on Academic Personnel (CAP). The goal of this plan was to bring faculty salaries to the median level for UC campuses - UCSC’s salaries had previously been among the lowest. While early analyses showed the plan to be nearing its goal, recent CFW analyses, especially the most recent 2015 and 2016 salary analyses, demonstrated a stall in salary growth relative to the other campuses.

Prompted by CP/EVC Allison Galloway’s suggestion to modify the Special Salary Practice (SSP),⁸ followed by a similar proposal by Interim CP/EVC Herbert Lee,⁹ CFW decided to analyze the impact of the SSP. In particular, CFW decided to compare the trend in median salary growth at a given rank/step at UCSC versus the 9-campus system-wide median, and to extrapolate salary growth trends at UCSC before and after the implementation of the SSP.

As is well known, most UC campuses implement their own version of salary growth practice, to offset the fact that the UC salary scales are obsolete compared to the open market. CFW’s study therefore seeks to understand whether, as claimed in the CP/EVC proposals, the SSP would need to be “slowed” so that “our increases are comparable with those of our cohort”⁷, or whether in fact *the SSP is barely keeping UCSC’s salary growth in line with system-wide salary growth*. Our analysis indicates that in fact the latter is correct.

Figure 8 and the four following figures illustrate this point quite clearly: the plots show with stars UCSC’s median salaries between 2005 and 2015,¹⁰ and with open circles the median salaries for the 9 UC campuses for the latest (2015) and oldest (2011) years available. We show three lines, one for the 9-campus trend, one for a linear fit to the pre-SSP years (2005-08) and one for a linear fit to the post-SSP years (2008-15). The figures illustrate that *the SSP barely kept UCSC Assistant Professor median salaries on par with UC-wide salary growth*; without the SSP, UCSC’s salaries would have lagged behind by now by large amounts. The SSP, therefore “worked,” but only to keep UCSC salaries on par with the growth system-wide.

It is worth noting, however, how *in all cases* (i.e. for all 5 ranks and steps under consideration), even with the SSP, UCSC’s median salaries grew *slower* than UC-wide salaries, an effect which is especially dramatic for example at the Associate Professor and at the Professor Rank, indicating that other *UC campuses have on average salary growth policies more effective than the SSP*. Also in all cases the median salary growth was slower without the SSP than with the SSP.

In our final figures 13 and 14 we study how median salary gaps between UCSC and the 9-campus figure would change over 5 and 10 years *with* and *without* the SSP, for the usual

⁸ Galloway to Einarisdóttir et al., 12/19/16, Re UCSC Special Salary Practice

⁹ Lee to Einarisdóttir, 3/17/17, Re: UCSC Special Salary Practice

¹⁰ Note that all plots in this section use all salaries at a given rank/step, thus aggregating REG and BEE salary scales.

breakdown of ranks and steps. To obtain the projected gaps we utilized the current gap at 2015 and the slope of UC-wide and UCSC's pre- and post-SSP salary growth. The figures paint a dramatic picture: first, *even simply continuing with the current SSP would keep increasing the current salary gaps*, with a projected growth of the gaps between 0.1% and 2.1% over the next 5 years and between 0.6% and 4.4% over 10 years. In addition, should UCSC salaries grow at the rates they did *before* the SSP (a proxy for what would happen should SSP be terminated), then the gaps would grow to between 7% and 11% in 5 years and between 11% and 19% in 10 years. A reduction in the scope of the SSP would likely produce gaps within the ranges quoted here in the hypotheses of no SSP or of continuing, unmodified SSP.

To conclude, our data analysis show that:

1. The SSP has been effective at limiting the growth of UCSC median salaries compared to the growth of salaries system-wide.
2. Even with the SSP in place, UCSC median salaries grew slower than system-wide salaries.
3. Extrapolating out to 5- and 10-years, and assuming the median salary growth UCSC had with the SSP, the existing salary gaps would not dramatically increase (but would also not decrease).
4. Extrapolating out to 5- and 10-years assuming the elimination of the SSP, UCSC median salaries would fall between 10% and 20% below system-wide figures.

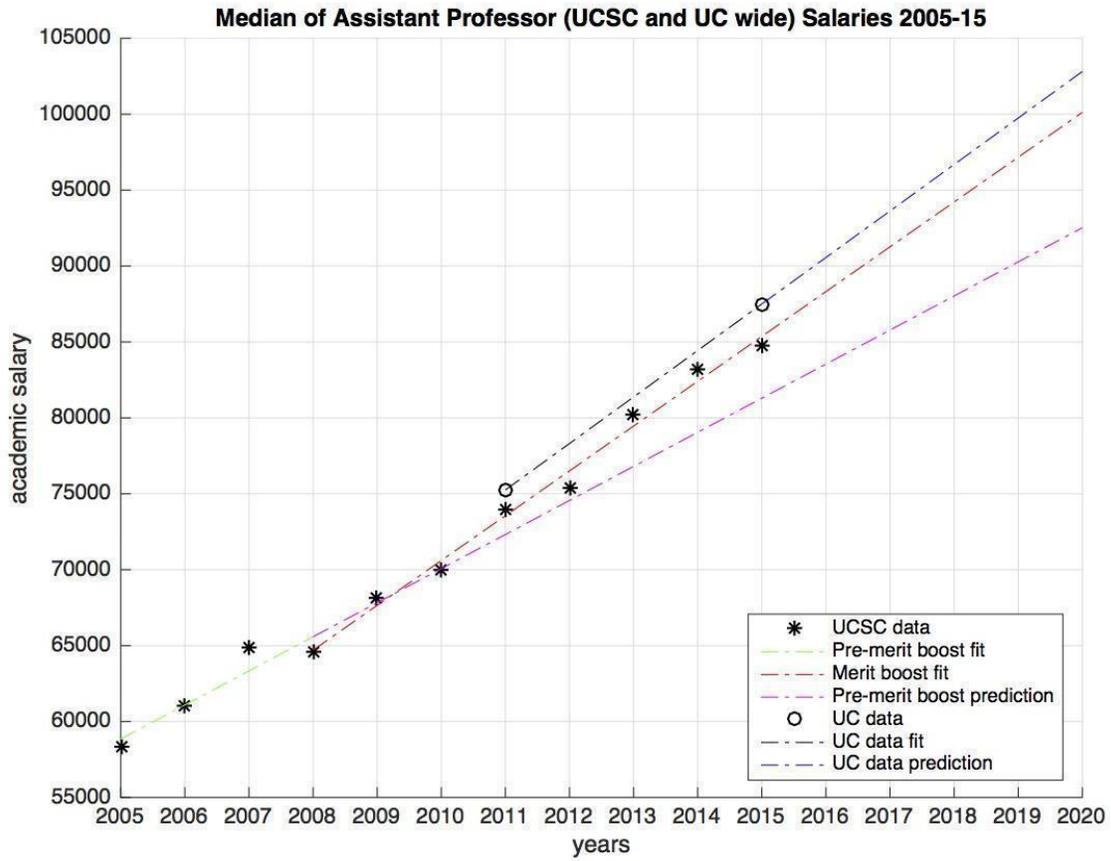


Figure 8: UCSC (stars) and UC-wide (9-campus) median salaries at the Assistant Professor level, with fits showing the extrapolated trends system-wide, and for UCSC before and after the introduction of the Special Salary Practice (2008)

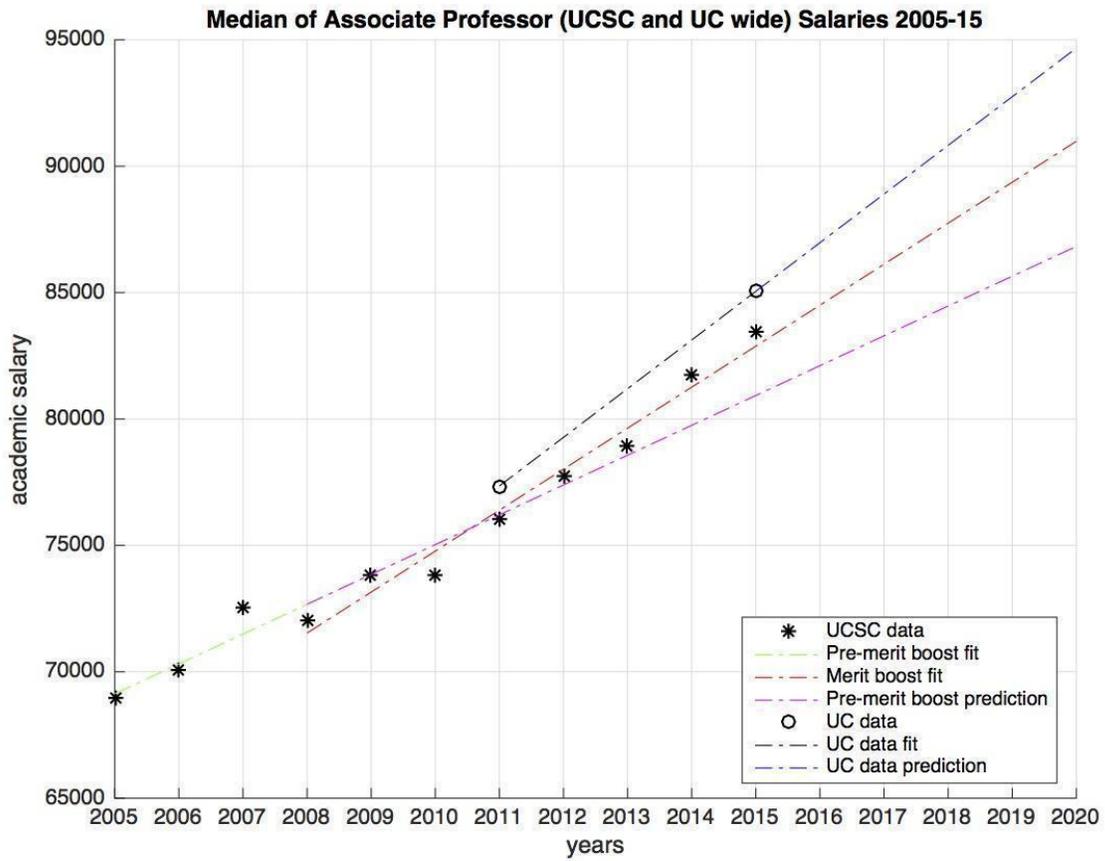


Figure 9: As in Figure 7, for the Associate Professor Rank

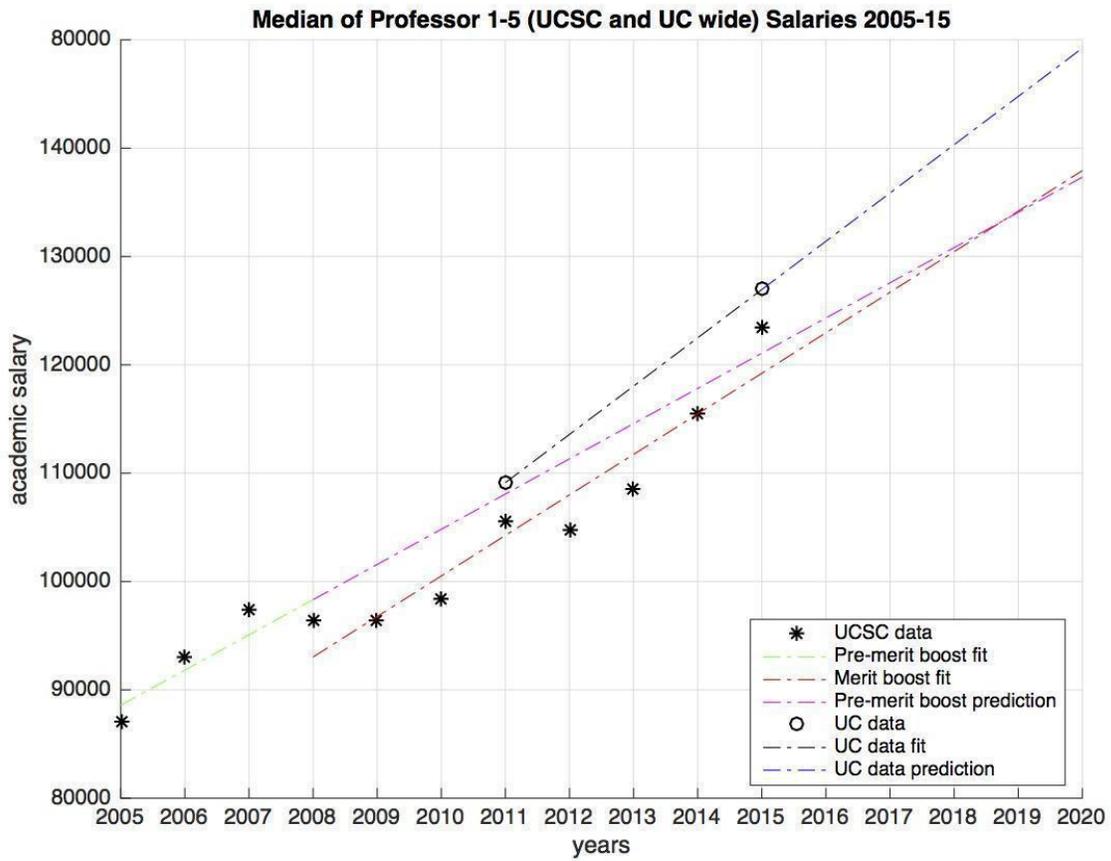


Figure 10: As in Figure 7, for the Professor Rank, steps 1-5

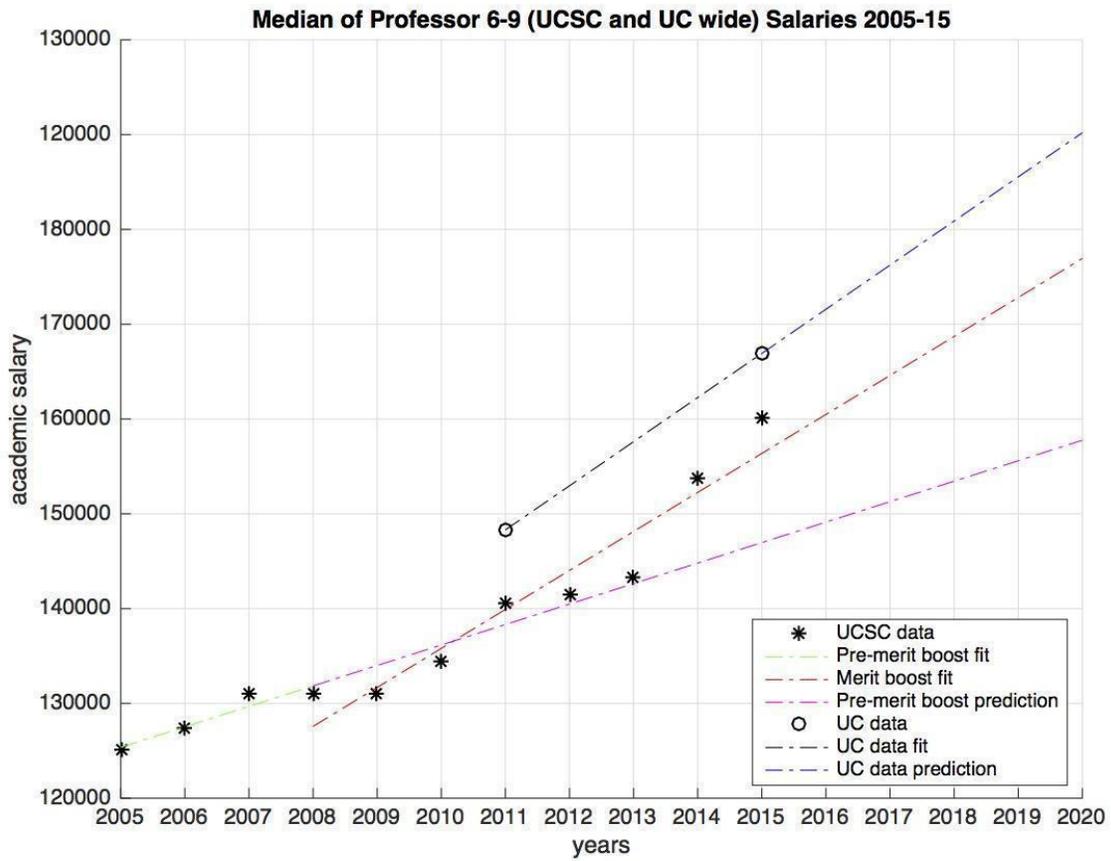


Figure 11: As in Figure 7, for the Professor Rank, steps 6-9

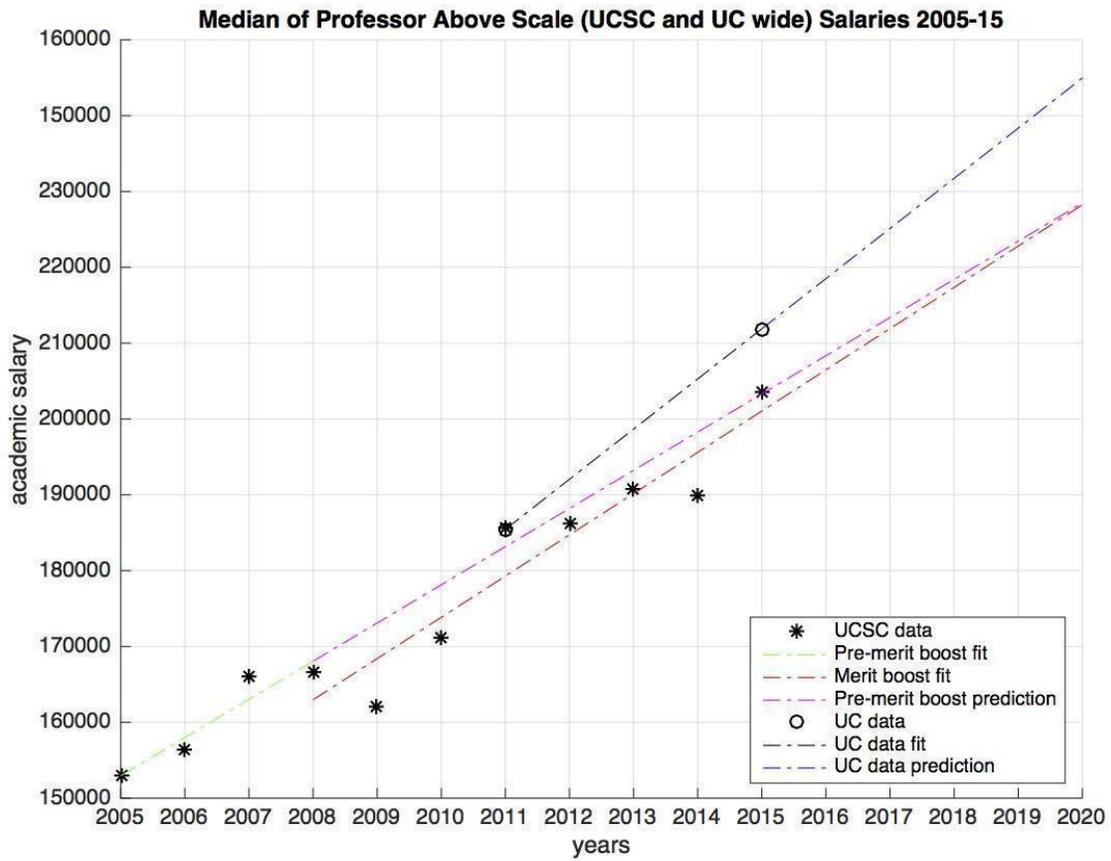


Figure 12: As in Figure 7, for the Professor Rank, Above Scale

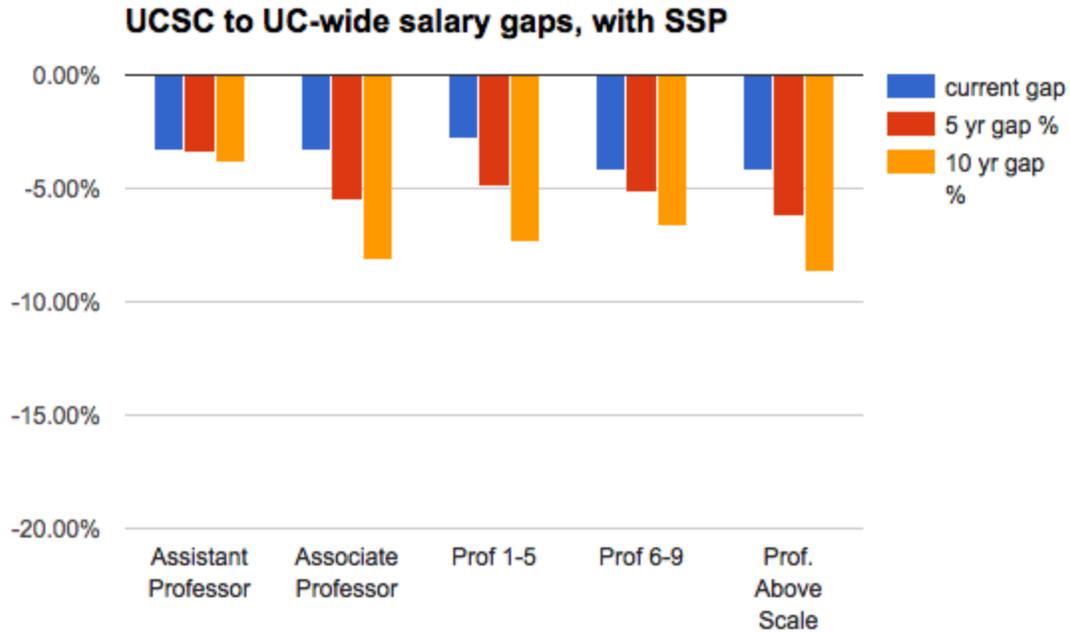


Figure 13: The gap between UCSC and UC-wide median salaries at given ranks/steps now (blue columns), and extrapolated 5 (red columns) and 10 (yellow columns) years out, assuming the median salary growth with SSP

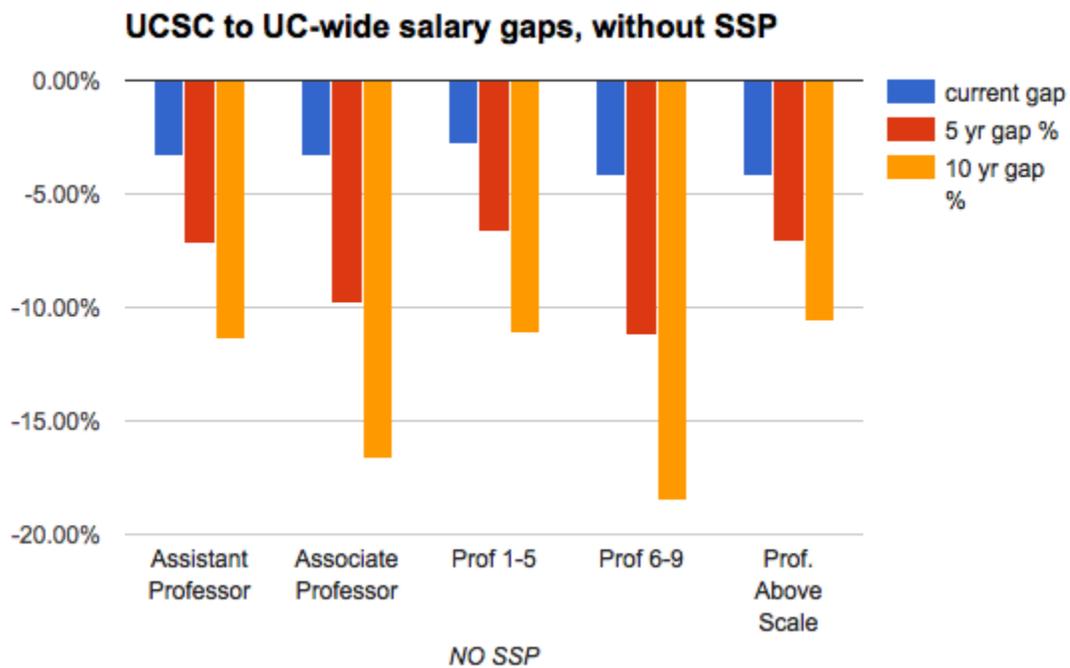


Figure 14: The gap between UCSC and UC-wide median salaries at given ranks/steps now (blue columns), and extrapolated 5 (red columns) and 10 (yellow columns) years out, assuming the median salary growth without SSP

Respectfully submitted;
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