2009-2010 Annual Report

Senate Committee on the Economic Status of the Faculty

December 16, 2010

Contents

I. Introduction

The Senate Committee on the Economic Status of the Faculty (SCESF) is charged by the "Rules of the Faculty Senate" to:

• Gather and organize data on faculty salaries and benefits;

• Issue an annual report on the economic status of the faculty; and-Represent the faculty in the determination of University policy on salary issues.

The focus of this report is on the current economic status of the faculty as based on salary data. The report is organized in terms of three broad concerns:

• The salary setting process at Penn: the sources of funds for faculty salaries and how annual salary increase decisions are made.

• External comparisons: the competitiveness of faculty salaries at Penn in comparison with faculty salaries at other universities.

• Internal comparisons: variability of faculty salaries within Penn.

One major section of this report is devoted to each of these three topics. Section VI describes the SCESF's overall conclusions about the economic status of the faculty. We report in Section VII the Committee's provisional observations and recommendations.

This report is detailed and data-intensive. The data, however, reveal clear themes essential to understanding the economic status of the faculty and the implications of that for larger University strategies.

(a) Penn continues to lose ground overall to other universities, including universities with which it competes for faculty, with regard to average salaries. The situation seems slightly worse than last year. The pattern is, of course, more variegated at the level of individual schools and groups within large schools such like SAS. But the trend is worryingly visible there as well.

(b) In FY 2010, most schools followed the widely communicated, though not explicitly mandated, encouragement to freeze most faculty salaries. Seven of 14 schools/areas reported that at least three-quarters of their faculty had no increase, including both SAS and Medicine, the largest two schools. Some schools, however, did provide small raises on a broad basis, with a median of between 0.7% and 1.6%. Perhaps unsurprisingly, these were the schools/areas where the competitive disadvantage cited above was reduced.

(c) Eighty-seven percent of the Standing Faculty saw actual declines in the level of real compensation surveyed here for FY 2010. This is understandable as a temporary emergency measure but is for many reasons not viable in the longer term.

In carrying out the SCESF's responsibilities, the Committee has been cognizant of Penn's salary policy for the period as stated by the President, Provost, and Executive Vice President (*Almanac*, April 14, 2009). The University of Pennsylvania's merit increase program is designed to recognize and reward faculty and staff by paying market competitive salaries in a fiscally responsible manner. The merit increase amount is based on market trends, economic conditions and fiscal responsibility. The salary guidelines have been designed to recognize and reward the valuable contributions of faculty and staff to the University's mission and commitment to excellence.

Statistical data in this report (including Census figures in the Tables) were provided by the Office of Institutional Study and Analysis unless otherwise indicated. In studying faculty salaries for this report, the SCESF has in particular benefited greatly from access to detailed salary data (excluding, of course, any information that would make it possible to identify individual faculty salaries) that have been collected and provided by Penn's central administration. Our understanding, both of Penn's competitiveness with peer institutions in faculty salary levels and of faculty salary variability within Penn, has been enhanced by access to this information and by the assistance of those who produced it. The SCESF appreciates this assistance.

II. Resources for Faculty Salaries and Annual Increases

Faculty salaries are the product of a two-step process:

1. Setting Salary Levels: Faculty salary levels are set at the time of initial appointment by the dean of the faculty making the appointment.

2. Annual Salary Increases: Faculty salary levels are normally increased annually through a process described below. Such salary increases are ordinarily based on academic merit. Some annual increases are also the result of promotion in rank and equity adjustments. Some are direct responses to outside offers or other retention issues.

Almost all funds for faculty salaries come from each school's operating budget; there is no central fund earmarked for general faculty salaries. Most of each school's resources are raised in accordance with the principles of Penn's Responsibility Center Management (RCM)[1] In addition, subventions are distributed to schools by Penn's central administration. Such subventions are made for a variety of reasons. Recognizing beneficial external effects on broader University interests of costly actions undertaken by individual schools would be a reasonable one and in the spirit of RCM.

From these available resources, each school makes a certain amount available for faculty salaries for: sustaining existing faculty appointments, providing annual salary increases for continuing faculty members, and creating salary funding for new faculty positions. In addition, schools must provide funds to cover employee benefits. The sum required for benefits is approximately 30% of faculty salary expenditure overall.

Annual salary increase recommendations for continuing faculty members are made by Department Chairs (in schools with departments) and by Deans, based on merit, with general review and oversight by the Provost (see the statement of the "Salary Guidelines For 2009-10" as published in the *Almanac*, April 14, 2009). In consultation with the Council of Deans, Penn's President, Provost, and Executive Vice President set an upper limit on a "pool percentage" for salary increases. For FY 2010, schools were authorized to award, as salary increases, a pool of up to 2.0% of the FY 2009 salaries of continuing faculty members. The recommended salary increase range was 0% to 3%. Deans were asked to consult with the Provost about any individual increases above this range or below 1% for specifically non-meritorious performance. Deans might "wish to give careful consideration to salary adjustments for faculty members who have a strong performance record but whose salary may have lagged behind the market" and discuss with the Provost any market conditions warranting an increase in the overall pool. Presumably Deans could still propose additional salary increments to meet outside offers, reduce internal inequities, or address significant variances from prevailing markets.

FY 2010 was unusual due to the financial crisis and the depressed value of, and returns on, the endowment. The Central Administration decided that more modest salary increases than usual were in order overall (as the *Almanac* statement said, "to conserve resources and to preserve jobs"). The resources available for salary increments of any description vary at the School level and since raises are funded with school and center resources, the guidelines recognize that "some schools or centers may have smaller (or no) merit increase pools … due to financial constraints." There was, in fact, a stronger lead. The Guidelines said that "[t]hese financial constraints will affect the salary increase percentage that can be awarded, and may in some cases require holding salaries at current levels. This information will be communicated separately by the school or center's administration." They added that"[s]ome schools may announce limits on salary increases for an entire class of faculty; for example, a decision could be made to provide no increase to faculty members earning more than a certain income." Some schools might announce limits for certain ranks. (This too happened in the event.) What precisely was said in the privacy of the Council of Deans we do not know. The policy guidance was clear: "Our University's leadership agreed to forego salary increases next year."[2] We do not have access to specific written policies governing school-level increases but do have reports that faculty were told in some or possibly even most schools that faculty with salaries above a certain level (e.g. $75,000 per year) would receive no increase.

III. Penn Faculty Salaries: External Comparisons

Average Penn Faculty Salaries (i.e., academic year base salaries) are compared with three types of external indicators in the following sections:

1 For a more detailed explanation of Penn's Responsibility Center Management model, see *http://www.budget.upenn.edu/rcm/index.shtml.*

2 *http://www.upenn.edu/pennnews/news/president-amy-gutmann-issues-statement-penn-and-economy* (accessed 12/8/2010).

(a) growth in the Consumer Price Index (CPI), (b) average faculty salaries by rank at other universities as reported by annual surveys conducted at the school/area level, and (c) average salaries of Full Professors in the set of 19 public and private research universities identified as most comparable to Penn in the universe of those in the "Annual Report on the Economic Status of the Profession" data compendium issued by the American Association of University Professors (AAUP).

As a methodological note and unless otherwise specifically stated, all faculty salary information discussed in this report refers to the aggregated "academic year base salary" of individual faculty members whether salaries are paid from General Operating Funds and/or from Designated Funds.[3] In addition, all salary data exclude faculty members from the School of Medicine except for basic scientists and also exclude all clinician educators from five other schools (Dental Medicine, Veterinary Medicine, Medicine, Nursing, and Social Policy & Practice). Tables 1 and 2 refer to continuing Penn faculty, whether they continued in the same rank or were promoted to a higher rank. Faculty members who were, for example, promoted from Assistant Professor to Associate Professor effective 1 July 2009, are included among the Associate Professors for the 2009-10 year in Table 1– and any salary increases they received due to their promotion are included in the percentage changes in salaries reported for Associate Professors in 2009-10. The same is true for those promoted at that time from Associate to Full Professor in Table 2. In Tables 3 and 6 through 12, in contrast, the information refers only to faculty members who continued in the same rank throughout the reporting period. The inclusion of faculty who changed ranks in Tables 1 and 2 risks distorting (inflating) mean changes but not reports of median changes since those would not be affected by the presence of outliers. (Note that it is only the percentage changes in their salaries that generally are reported in Tables 1-3, 6-8 and 11; only Tables 9, 10, and 12 report actual salary levels.) Tables 4 and 5 do not report change data; they provide data regarding faculty members at Penn and the other universities surveyed who were in the designated rank on the date of the snapshot used to compile the data reported to the AAUP or AAU Data Exchange.

A. Comparisons with Growth in the Consumer Price Index (CPI)[4]

Mean and median salary increases for continuing faculty between fall 2008 and fall 2009 (i.e., FY 2009 to FY 2010), averaged over all schools, are shown in percentage terms, overall and broken out by rank, in Table 1. Table 1 also gives data for two measures of inflation (the U. S. city average CPI and the Philadelphia CPI) for the same time period as well as the Penn budget guidelines for salary increases.[5] The year covered in the previous SCESF report was a somewhat unusual one in recent price history, since price levels went down rather than up. This year was more normal, with positive growth in terms of both national and local consumer price indices. In particular, per the data provided by the Provost's Office, the U.S. city average (mean) CPI rose 1.1% between June 2009 and June 2010 and the Philadelphia CPI rose 1.9%.[6] (In contrast, the US city average rose 5.0% in the preceding 12 months and the Philadelphia CPI 5.1 %.)

Table 1 shows that the all-ranks median salary increase was 0.6% and the all-ranks mean increase was 2.1%. (These are significantly more modest figures than usual.) The median increase was 0.0% for Full Professors, 0.8% for Associate Professors, and 1.1% for Assistant Professors. Mean increases were 2.2% for Full Professors, 2.4% for Associate Professors, and 1.6% for Assistant Professors. Table 1 indicates that for all ranks combined, the mean FY 2010 percentage salary increase was in excess of the percentage changes in the U.S. City average CPI and Philadelphia CPI. However, the all-ranks median figure was also considerably below both the changes. Thus the average (50th percentile) faculty member saw a decline in wages relative to either measure of consumer prices. This decline in real wages obtained for both measures of of price levels for full and Associate Professors and it was true for the Philadelphia CPI—which represents, after all, the prices faculty actually face locally—for Assistant Professors. Apparently many (perhaps all) of the Deans of Penn's schools took the Administration's request for constraint this year to heart.

The Penn budget guidelines refer to the centrally recommended salary pool percentage for faculty continuing in rank. There are at least two reasons why the actual salary percentage increases on average for continuing faculty might exceed guidelines for percentage increases in faculty salaries. First, a number of faculty members may receive additional salary increments due to promotion. Second, a number of faculty members may receive additional salary increments to meet actual or potential higher outside offers, to address perceived previous inadequate salary levels, or to reward particularly meritorious behavior.

The increases in salary of continuing faculty in comparison with CPI growth for FY 2010 are reported by School (with SAS disaggregated into three disciplinary groupings) in Table 2. Table 2 this year shows spectacular heterogeneity, with the largest percentages more than twenty times the smallest. That said, only two of the fourteen reporting units show more than half of their faculty receiving increases in excess of the Philadelphia CPI. Overall, about 83% of the Standing Faculty surveyed in this Table took real wage cuts.

Table 3 provides parallel information about trends for Full Professors continuing in rank (i.e., excluding promotion increases). Table 3 also shows some heterogeneity albeit (at least for the units reporting) on a more moderate scale. Overall nearly 88% of full Professors sustained real wage cuts.

The SCESF recognizes that there are legitimate reasons for individual faculty members to be awarded increments less than the growth in the CPI. For example, in a particular year (e.g., FY 2010), the salary increment pool might have only approximated, or even been less than, the rate of growth in the CPI. Furthermore, in a small department or school, a few promotions or market adjustments needed to retain a valued faculty member could obligate a disproportionate share of an existing increment pool, thereby leaving little available for other faculty members in the unit. Finally, some faculty members may be sufficiently lacking in merit to justify an increment exceeding the CPI growth.

Nonetheless, to the extent possible, individual faculty members should receive cumulative salary increases equal to, or exceeding, growth in the CPI when considered over any extended period unless their performance has been unsatisfactory over a substantial portion of that period. If they do not, as is often the case, it seems possible that the increment was inequitably low. If so, and particularly when there is a striking or persistent pattern of such outcomes, the issue merits further exploration. (This is of course so not only for Full Professors continuing in rank but also for others. The potential bad effects on morale, and the willingness of individuals to take on the many unofficial tasks required to keep our community running properly, as well as on retention are absolutely not rank-dependent.)

B. Comparisons with Peer Universities Using AAU Data

The Association of American Universities (AAU) Data Exchange is one source of faculty salaries at peer universities. The AAU is comprised of 60 public and private research universities in the United States and two in Canada. The AAU includes several Ivy League institutions (e.g., Penn, Brown, Harvard, Princeton, Cornell, and Yale), other private universities (e.g., Brandeis, Rice, Emory, Vanderbilt), public flagship universities (e.g., Berkeley, UCLA, the Universities of Michigan, Virginia, and Wis-

3 Academic base year salary is that standing faculty salary that is paid for the normal academic duties of a faculty member (teaching, committee service, research). At Penn, the "academic base year salary" is a faculty member's compensation for the nine-month academic year, although it is typically paid out in twelve, equal amounts in a monthly paycheck. The only exception occurs in the health care schools which have some or all standing faculty on a 12-month, or "annualized" base. All salaries reported on a 12-month basis have been adjusted to be comparable with the salaries reported on a 9-month basis. We note that "summer money" is paid routinely, albeit at varying levels, in some parts of the University. Such "summer money" is not included in these base year salaries.

4 The consumer price index (CPI) refers to prices for a basket of goods and services purchased by "average workers." There are questions about how well this index captures quality changes in goods and services (i.e., if it understates quality improvements as suggested by some observers then it overstates price increases for goods and services of a given quality) and how well this index captures goods and services consumed by faculty (i.e., if faculty consume goods and services that have had greater quality improvements for which corrections have not been made in the CPI than do average workers then faculty salaries in purchasing power terms have increased more than would be indicated by a comparison in the reported CPI). Nevertheless, use of the CPI is widespread and helps give some perspective.

5 The fiscal year refers to the year starting on 1 July and continuing through 30 June of the next calendar year. This report refers to the second of the two calendar years covered in a fiscal year. That is, the FY 2009 refers to the fiscal year (or academic year) starting on 1 July 2008 and continuing through 30 June 2009.

6 For a complete list of the member institutions, see the AAU website http://www.aau.edu/about/article.aspx?id=5476.

consin), and other public universities (e.g., Michigan State, University of California Davis, and University of California Irvine). [7]

Data from the AAU member institutions provide comparisons for mean faculty salaries by rank and school/area. Table 4 provides comparisons by rank for each of the following schools/areas: Annenberg, Dental Medicine, Design, Engineering & Applied Science, Graduate Education, Humanities (SAS), Law, Medicine-Basic Science, Natural Science (SAS), Nursing, Social Policy & Practice, Social Science (SAS), Veterinary Medicine, Wharton-Business & Management (i.e. all of Wharton except for Public Policy and Statistics), Wharton-Public Policy, and Wharton-Statistics. The data in Table 4 cover the academic years from Fall 2005 through Fall 2009.

Table 4 situates each school/area relative to a comparison set. Data for Table 4 were supplied by the Office for Institutional Study and Analysis. It will be observed that the individual comparison sets sometimes change over time. Relatively robust measures of position changes are therefore in order. We added one to the traditional measure last year and continue to report it below.

For almost all the 16 schools/areas, Penn's mean faculty salaries for all ranks in 2009-10 are in the upper third of the AAU institutions. The only exceptions are Assistant Professors of Veterinary Medicine (who are not far off from the top third, slightly up from last year) and Associate Professors of Veterinary Medicine (who are very far off at the top of the bottom third, a marked decline since last year). Mean faculty salaries are in fact at least in (or at the boundary of) the top quartile of AAU institutions for all three ranks in all schools/areas except full Professors in the School of Social Policy & Practice (7/23), Associate Professors of Veterinary Medicine (9/13), and Assistant Professors of Veterinary Medicine (5/13). This generally high overall position might be seen as comforting.

A more disturbing pattern emerges, however, when comparing the 2009 salary data with the 2005 data in Table 4. We discussed such a comparison in our Report last year for the years 2008 and 2004. [7] The basic pattern has not changed: while Penn has made some gains in AAU rank comparisons, it continues to fall behind in many more.

For Full Professors, there are 16 sub-groupings for which there are data both in 2005 and in 2009. For each sub-grouping, percentile rank (dividing rank by number of cases) can be calculated and compared. Of those comparisons, Penn has fallen in rank in 10 areas while gaining in only 5. However, many of these changes in position are minor. When we focus on more substantial changes (more than 5% change in percentile rank), we see that Penn has fallen in 5 areas (Humanities-SAS [-7.6%], Natural Sciences-SAS [-6.4%], Social Policy & Practice [-12.2%], Veterinary Medicine [-16%], and Wharton-Public Policy [-13%]) and gained in only 2 areas (Dental Medicine [+13.1%] and Design [+13.5%].)[8]

There are 10 available sub-groupings among Associate Professors. Penn fell in relative salary in 7 and gained in only 3. Focusing on larger changes, Penn showed declines in 4 areas (Humanities-SAS [-7.7%], Natural Sciences-SAS [-6.3%], Nursing [-14.6%], and Veterinary Medicine [-54.9%]) while gaining substantially in only two areas (Design [+8.1%] and Social Science-SAS [+5.2%].)

Among the 11 Assistant Professor sub-groupings reporting in both years, the pattern was still against us but more mixed and certainly moderated relative to last year. Penn lost in 6 of 11 areas. The University lost ground substantially in 4 of those (Law [-6.2%], Natural Science-SAS [-15.3%], Social Science-SAS [-5.9], and Veterinary Medicine [-54.9%]), while gaining substantially only in 2 (Engineering and Applied Sciences [+10.6%] and Nursing [+9.2%]).

Last year's SCESF report commented at length on the adverse balance of substantial noteworthy declines over advances. We comment on it again this year and note that the pattern shows up at all ranks. (It will also be noted that schools/areas that improved their positions for the most part also appeared in Table 2 with relatively high percentages of their faculty receiving increases in excess of CPI gains.)

Being above average in the Table 4 comparison group, of course, is good. But if Penn has aspirations to be in the top part of this comparison group, it will be necessary to increase faculty salaries relative to these competitors. Penn may experience challenges attracting and retaining enough of the best and the brightest faculty if faculty salaries remain at the current levels or continue to lose standing relative to this comparison group. This concern is sharp in the various parts of SAS, in particular Humanities and Natural Science, and very sharp indeed in Veterinary Medicine. How much improvement should be expected is a matter of assessing how relative faculty salaries affect attainment of the University's long-run objectives. But it is clear that more improvement is required if Penn is to move further up in the ranks of the nation's research universities, much less to sustain a high position.[9]

C. Comparisons with Peer Universities Using AAUP Survey Data

Table 5 presents a comparison of the mean salaries of all Full Professors at Penn with those at a small and select group of research universities based on data obtained by the Penn administration from annual salary surveys conducted by the American Association of University Professors (AAUP) and published in *The Chronicle of Higher Education*. To make meaningful and fair comparisons of Penn salaries with those at other universities, the following five criteria were used to select comparison universities: (a) be included in the Research I category of the Carnegie Classification System, (b) offer a broad array of Ph.D. programs in arts and sciences disciplines, (c) include at least two of three major professional schools (law, business, engineering), (d) not include a school of agriculture, and (e) have a composite academic reputation rating greater than 4.0 (on a five point scale) in a rating system reported by *U.S. News and World Report*.[10] The 17 research universities meeting all five of these criteria are identified in the first column of Table 5. In addition, as Princeton and NYU are considered by the SCESF as main competitors of Penn for faculty, we included these two schools as well.

The relative standings of mean salaries of Penn Full Professors are presented for five years in Table 5. Universities are listed in Table 5 in order of the level of mean salaries of full Professors (from high to low) for the most recent academic year (2009-10). Each row (except for Penn) gives the difference between a comparison university's mean salary and Penn's mean salary as a percentage of Penn's mean salary. For example, Table 5 shows that, in 2009-10, the mean salary of full Professors was 12.4% higher at Harvard than at Penn ($170,100), but 2.2% lower at Northwestern than at Penn.

It is entirely possible that the reported data do not reflect extra-salary compensation and subsidies (for example, to housing expenditure) or differences in the cost of living. This might make comparison of absolute levels of salary across universities ambiguous. But the Committee is not aware of differential trends in such matters over time that would undermine the analysis of trends given below.

The data in Table 5 show that, during the past five-year period, mean salaries for Full Professors at Penn became more competitive with some few institutions in the comparison set (4 in total, though only two by margins much greater than rounding error) but became less competitive with the overwhelming bulk of the panel.[11] In the two instances of at least relatively marked improvements of Penn relative to competitors, the salary disadvantages of Carnegie-Mellon and the University of Virginia once again increased slightly between 2005-06 and 2009-10, moving from -17.4% to -19.1% and -17.9% to -20.8% respectively. But these instances are only two (or, if we count very minor increases, four) out of seventeen; and even on the very modest scale just reported there is no further comfort to be taken from the Table. Those universities that were above Penn in 2005-2006 (Harvard, Chicago, Stanford, Princeton, and Yale) are still above; the margins have in all but one instance grown; and in that one exception, the gap lessened in our favor by an interval which might be no more than rounding error. One university which was formerly below Penn (NYU) is now above Penn. Columbia, which did not offer data in 2005-2006, is above Penn now as well. With only the four exceptions noted above, those that were and remain below Penn are gaining, and continuing to gain, on us. The weight of numbers is 13 against 4, just as it was last year. Even Berkeley and UCLA, the fiscal crisis of the state of California notwithstanding, are gaining on us, narrowing the pay differential. Moving the starting point of the long-term comparison forward a year does not change the pattern. The data in Table 5, like those in Table 4, raise very serious questions about trends in Penn's competitiveness for Full Professors.

7 See *www.upenn.edu/almanac/volumes/v56/n33/pdf_n33/SCESF-full%205-11-10.pdf*, Section III B.

8 Some caution should be exercised concerning the Wharton-Public Policy figures, since the comparison group changed substantially between 2006 and 2008.

9 We recognize that Penn's loss in relative position between 2005 and 2009 may not add information to the parallel results SCESF reported last year for the 2004-2008 period. If salaries at all universities had been frozen between 2008 and 2009, the weight of the previous loss of relative position would continue to dominate this year's analysis as well. Table 4 makes clear that in most areas our pattern of relative loss has been maintained. The pattern was ameliorated only in schools/areas which appeared to attend less to the expected guidelines and provided >0% raises to their faculty.

10 A composite rating was constructed by computing the mean of three separate academic reputation ratings: a general rating, a mean rating of key Ph.D. programs, and a mean rating of key professional schools.

11 The two small changes are Harvard, which went from being 12.5% above Penn to 12.4%, and the University of Minnesota, which went from -26.4% to -26.6%. These are changes which are only barely changes at all.

It may be helpful to focus in on the institutions ranked higher than Penn in the Table. Between 2005-06 and 2009-10, the gap between the average salaries of full Professors at Penn and full Professors at Harvard, Columbia, Stanford, Princeton, and Chicago remained substantial. Between 2009-2009 and 2009-2010, nearly twice as many of the other 18 universities in the panel gained on Penn as against losing ground against Penn. The balance was closer in the set of universities above us but there was still notable policy heterogeneity. Many institutions are investing in their faculty in this period. The overall picture is thus one in which only a small set of institutions have had the same salary policy last year that Penn did. For Penn to continue that policy would be to worsen a situation which is not strong and which appears to be weakening rather than strengthening both very recently and over the past half a decade and more.

Even though the SCESF was careful to select universities for overall mean salary comparisons that are similar to Penn on several important criteria and to make comparisons at the Full Professor rank (i.e., we did not aggregate across the three professorial ranks), AAUP salary data did not appear to permit the SCESF to control for the specific schools sponsored by each university and the number of Full Professors appointed in each school. Such controls would be desirable because mean salary levels vary by school, as do the number of professors appointed to the faculty of each school on which the means are based. Therefore, the relative standing of Penn mean salaries shown in Table 5 might be misleading in understanding what has been happening in particular schools or departments. Nonetheless, the general pattern between 2005-06 and 2009-10 in Penn's relative standing seems to be sufficiently pronounced and significant in itself to include in this report. Table 4 makes it clear that Penn may be losing position relative to the larger grouping of universities at all levels. Table 5 makes it particularly clear that those concerns reach Full Professors reviewing conditions at our most direct competitors, the alternative employers most likely to be appealing to frustrated Full Professors.

IV. Penn Faculty Benefits

The 1998-99 SCESF Annual Report included a section with comparative faculty benefits data.[12] More recent cross-university benefits data are of insufficient precision to permit meaningful quantitative comparisons. Accordingly, no such comparisons are made in this report.

V. Penn Faculty Salaries: Internal Comparisons

As previous reports of the SCESF have highlighted, there is a great deal of variability in faculty salaries at Penn attributable to several recognized factors: differences in individual merit, rank, time in rank, external labor market forces, the relative wealth of schools, and perhaps differences among schools in principles and practices for allocating salary increments.

One of the SCESF's concerns has been that existing variability in faculty salaries might include some significant element of inequity (e.g., salary setting based on incomplete or inaccurate information about merit, or bias that could be involved in the process of deciding salary increments). However, it is not possible for the SCESF to pinpoint any instance of individual or group inequity without individual faculty salaries and associated information about individual merit, labor market forces, etc. What we can do is review some facets of overall salary variability and raise questions about the possibility that inequity might be responsible for some degree of the observed variation. These questions might lead to further review and action by senior academic administrators (Department Chairs, Deans, and the Provost) with a view to correcting any inequities that might be identified.

This section describes several dimensions of faculty salary variability within Penn. As with the external salary comparisons above, the salary data reviewed in this section exclude all standing faculty members who are appointed as Clinician Educators from Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice and include only basic science faculty in the School of Medicine.

A. Variability in Average Salary Increases by Rank & School/Area

As reported in Table 1, median faculty salary increases by rank, both overall and for each rank, in FY 2010 were below the rate of growth in the U.S. City average CPI and the rate of growth in the Philadelphia CPI, and were, for all academic ranks, less than Penn's "budget guidelines" mean of 2.0% (i.e., the "pool percentage" that the President, Provost, and Executive Vice President established for salary increases, discussed in section II of this report). These median salary increases are broken out by school and rank in Tables 6, 7, and 8. These tables show many zeroes but noteworthy variability in median salary increases across schools, as well as among the first and third quartile increases (Q1 and Q3, respectively).

Before reviewing these salary increases in detail, it should be recognized that even without the qualifications mentioned in final paragraph of Section II above, the salary increase guideline of 2.0% for FY 2010 was no more than a guideline, and pertained to an aggregate of all increases for all ranks combined for each of Penn's schools (i.e., merit increases for continuing faculty members, special increases for faculty members who have been promoted in rank, and market adjustments for faculty members with competitive salary offers from other institutions). As a general matter, Schools may allocate more, or fewer, resources to faculty salary increases than the guideline, depending upon each school's financial circumstances. Therefore, a comparison of the median increase awarded to faculty members of a particular rank and school with the salary guideline only gives an indication of the extent to which the guideline was implemented in that particular category. Accordingly, a median increment of less than 2% should not be regarded as a specific failure of salary policy, since there is no policy for each rank and each school to be awarded at least that much on average. Furthermore, the 2% guideline pertains to the mean increase, a measure of central tendency that is usually higher than the median salary increases as shown in Table 1. These data indicate that the majority of salary increases are bunched toward the low end, with a small or modest percentage of faculty members benefiting from relatively large increases.

The overall mean salary increase for all continuing faculty members for FY 2010 was 2.1% (see Table 1), an increase just above the guideline of 2.0%. This still substantial mean salary increase was not distributed sufficiently widely to lift the median salaries of all ranks in all schools/areas by at least the guideline amount - a phenomenon that may be attributable to differences in wealth, competitive pressures, and budget priorities among the various schools as permitted under RCM, not to speak of extraordinary retention efforts pre-empting more broadly-based compensation measures. Four rank-School/Areas had medians above the target. Nineteen had medians below the target but above zero. Fourteen were zero.

1. Median Increases Across Ranks and Schools/Areas in Comparison with General Guidelines

With respect to full Professors (see Table 6), in only 1 of the 14 schools/areas was the median salary increases for FY 2010 as much as within half a percentage point of the general guideline of 2.0% (i.e., between 1.5% and 2.5%.). Engineering and Applied Sciences topped out the set with a median of 1.6%. In seven schools/areas (Annenberg, Graduate Education, Humanities-SAS, Medicine-Basic Science, Natural Science-SAS, Social Science-SAS, and Veterinary Medicine), the median increase values for full Professors were zero. The remaining five ranged between 0.7% and 1.2%.

With respect to Associate Professors (see Table 7), for which we have only 11 reporting schools/areas, the median salary increase for 2010 was above half a percentage point of the general guideline of 2.0% in only one (Design at 2.6%) and within half a point above it (i.e., between 2.0% and 2.5%) in only one other (Engineering and Applied Science at 2.2%). One (Dental Medicine) was within half a percent, at 1.7%, on the low side. In five schools/areas (Graduate Education, Medicine-Basic Science, Natural Science-SAS, Social Sciences-SAS, and Veterinary Medicine), the median increase values were zero. The remaining three ranged between 0.9% and 1.3%. (Data describing Annenberg and Social Policy & Practice on the one hand and Law on the other are not published because the number of faculty at this rank were small and nil respectively.)

With respect to Assistant Professors (see Table 8), in only 2 (Engineering and Applied Science and Nursing) of the 12 reporting schools/areas were the median salary increases for FY 2010 above the general guideline (Engineering and Applied Science at 2.5% and Nursing at 2.1%). Four (Dental Medicine, Design, Humanities-Arts and Sciences, and Social Policy & Practice) were within half a percent below the guideline below. Two school/areas (Graduate Education and Veterinary Medicine) had median increase values of zero. The rest ranged from 0.9% to 1.2%. (Data describing Annenberg and Law are not published because the number of faculty at this rank were small.)

2. First Quartile Salary Increases Across Ranks and Schools/Areas in Comparison with Increases in CPI

The SCESF has regularly questioned the principles by which salary increases are awarded in the context of evidence concerning increases in the CPI (the U.S. city average and the Philadelphia CPI from Table 1). As one means of monitoring the situation, the Committee routinely compares salary increases at the 25th percentile for schools with data at the different ranks in Tables 6, 7, and 8 relative to the analogous change in the US city

12 See http://www.upenn.edu/almanac/v45/n32/econ-faculty.html .

CPI of 1.1% and the Philadelphia CPI of 1.9%. The comparison for this year's report's data shows that at the full Professor rank, no schools/areas had a 25th percentile salary increase in excess of the changes in these price levels during the period. At the rank of Associate Professor, Engineering and Applied Science did. At the Assistant Professor rank, Engineering and Applied Science and Nursing did. Even at the third quartile, only five of the possible 32 reporting units were above the Philadelphia CPI (with another one just equal to it). The remainder reported real wage cuts, the merits of the collective performances of the relevant groups of faculty members during the preceding year notwithstanding.

B. Variability in Average Salary Levels by Rank

Five-year data on mean and median faculty salaries by rank are shown in Table 9 for all schools combined.[13] The second-to-last column gives raw ratios of these values relative to the values for Assistant Professors. These ratios suggest that, in FY 2010, mean salaries were 78% higher for Full Professors than for Assistant Professors and 13% higher for Associate Professors than for Assistant Professors. Median salaries were 95% higher for full than for Assistant Professors, and 23% higher for Associate than for Assistant Professors. Between 2005-06 and 2009-10, the ratio of median salaries has increased somewhat for Full Professors to Assistant Professors (from 1.87 to 1.95) and for Associate Professors to Assistant Professors (from 1.20 to 1.23).

Such ratios give a crude perspective on rank differences in salary because of aggregation biases across schools, so interpretation must be made with care. For example, one might expect a considerably larger difference between Assistant and Associate Professor mean salaries. But a more modest difference might appear if, for example, a relatively high-paying School has a considerably lower percentage of Associate Professors than other schools, a difference that could reduce the observed mean salary for Associate Professors, or if, to choose the other possibility, a relatively high-paying School has a considerably higher percentage of Assistant Professors than other schools, a difference that could increase the observed mean salary for Assistant Professors.

A more meaningful comparison of variation in faculty salaries by rank can be made by computing the ratios for continuing faculty members for each school and then computing a mean weighted ratio, weighting for the number of continuing faculty members at each rank in each school.[14] Thus**,** Table 9 also gives the weighted ratios. Using the weighted ratios generally increases the spread in salary levels by rank, though this year the reverse is true. The weighted ratios show that in fiscal 2010, mean (median) salaries of Full Professors were 85% (84%) higher than Assistant Professors and mean (median) salaries of Associate Professors were 24% (22%) higher than Assistant Professors.

C. Variability of Average Salary Levels by School/Area

In previous reports, the SCESF observed considerable variability in median faculty salaries across Penn's 14 schools/areas. The Committee no longer receives data on the basis of which it can assess cross-sectional variation or change over time and therefore cannot comment on conditions in FY 2010 or recent trends.

D. Variability of Salary Level by Rank with Interquartile Data

Variability in salary level by rank might also be investigated with more distribution-sensitive statistics than just averages. The committee has obtained some data along these lines. Three facets of those data are considered below: measures of salary variability, differences in variability across ranks, and trends in variability over time.

Measures of Variability

The measure of variability of median salaries across schools/areas of continuing faculty members selected here is the interquartile range (IQR) (i.e., the 75th percentile salary in the distribution less the 25th percentile salary). However, the IQR can be expected to be larger when the general salary level is relatively high (such as for Full Professors) than when the general salary level is much lower (such as for Assistant Professors). To compensate for such differences in the general level of salaries, we have divided the IQR by the median of the distribution (i.e., the 50th percentile salary: Q2), thereby computing a ratio of the IQR to the median (as reported in the next to last column of Table 10 labeled "IQR to Median").[15] This ratio provides an index of the amount of variability in relation to the general level of the salary distributions, and has utility when comparing variability across ranks and trends over time.

Differences in Variability Across Ranks

As seen in Table 10, the ratio of the IQR to the median varies across rank and past years with no particular pattern. In FY 2010, the ratio of the IQR to the median was 0.45 for Full Professors, 0.30 for Associate Professors, and 0.40 for Assistant Professors. Short-term variations in this ratio may be a consequence (at least in part) of the variations in external competitiveness for faculty of different ranks and in the extent to which Penn is matching the highest-end salaries of its competitors. The question of greater interest is whether these ratios are exhibiting systematic patterns of change over time.

Trends in Variability Over Time

The most striking feature of Table 10 seems to the Committee to be the rise in the past two years of the 75th percentile, and so the interquartile range and the IQR to Median ratio, for full Professors and the decline for Assistant Professors. (The figures for Associate Professors are fairly stable.) Perhaps the decline in the Q3 figure for Assistant Professors reflects the recent promotion of a small number of relatively highly-paid Assistant Professors. The changes for Full Professors may reflect more competition for some of their services. The future development of these measures bears watching.

E. Variability by Gender

In response to recommendations in previous reports, this report includes two tables describing gender differences in faculty salaries. Table 11 provides the percentage increases in salaries for faculty continuing in rank by rank and gender for the first, second, and third quartiles for FY 2010.[16] The figures are generally very close. In all but one cell (quartile by rank), any difference favors women. But the difference is likely too small a difference to be meaningful.

Table 12 reports the observed mean and median salaries for men and women continuing in rank by rank. The most striking information concerning compensation and gender lies here and not in the incremental changes summarized in the preceding table. The Table 12 data show that both mean and median salaries were in all cases higher for men than women at all ranks for each year from FY 2006 to FY 2010 when the data are taken as is. The magnitude of the percentage difference in salary was generally smaller for Full Professors than for Associate and Assistant Professors in the unweighted comparisons. For example, Table 12 shows that, in FY 2010, (unweighted) mean salaries were 14.5% higher for men than for women among Assistant Professors, 12.7% higher for men than for women among Associate Professors, and 8.6% higher for men than women among full Professors. These numbers are all higher than their counterparts last year.

An important limitation of the average salary data shown in the first two columns of Table 12 is that they do not control for differences in the distribution of faculty by gender or differences in average salaries across schools/areas. The small numbers of men and women at some ranks in some schools/areas limit further disaggregation of the data. To address these issues, Table 12 also provides "weighted" salary data to reflect differences in the distribution of women across schools/areas. Male weights were calculated as the ratio of male faculty in each school/area to the total number of male faculty at Penn. Salaries for women faculty were weighted by male weights.

Table 12 shows that gender differences in salaries are substantially reduced after correcting for gender differences in the distribution of faculty across schools/areas. After applying the weight, median and mean salaries for women and men Assistant Professors differ by no more than 2.3% from FY 2006 to FY 2010, though with mean (median) at 3.1% and 2.4%) differences are up from last year. Among Associate Professors, mean weighted salaries were 2.6% higher for men than for women and median salaries were 0.9% lower for men than for women in FY 2009. Among full Professors, both mean and median weighted salaries were substantially higher for men than for women in FY 2009 (5.2% and 2.9%). The difference seems to be declining over time, with the exception of Assistant Professors in the most recent year.

VI. Conclusions

A. Economic Status of the Faculty

1. External Competitiveness.

13 The mean salary figures for Full Professors recorded in Table 9 are higher than those recorded in Table 5, which are drawn from AAUP reports. Table 5 includes all faculty members at the rank of Full Professor (including those newly appointed to a rank) whereas Table 9 is limited to faculty members who continued in the same rank from the prior year (a difference—generally an addition to the left-hand end of the distribution—that reduces the AAUP mean). Moreover, data in this Table 9 differ from data in Table 9 in the 2006-07 report describing some of the same time periods. The differences reflect errors in the calculation of academic base salary in the 2006-07 report.

14 Exceptions are made for schools/areas in which there are no Assistant Professors or only an extremely small number.

15 The statistically inclined reader will recognize this ratio as similar to the coefficient of variation (i.e., the ratio of the standard deviation to the mean of a distribution).

16 This information is presented only at the aggregate level because, for a number of school/areas-rank cells, the number of one gender (generally female) is fairly low.

Comparisons of Penn faculty salary percentage increases with percentage increases in the CPI: The all-ranks median increase was below the Philadelphia CPI increase for FY 2010. This was true on a rank-by-rank basis as well. The median is the appropriate average to consider as a summary statistic for the economic status of the faculty overall. On a more disaggregated basis still, 83.1% of all Standing Faculty had salary increases below the growth of the Philadelphia CPI. The Philadelphia CPI is the published BLS price index most relevant to measuring the real compensation of Penn faculty. FY 2010 was unambiguously a year of overall real wage declines. This is not a tenable state of affairs on any extended basis.

Comparisons with other universities: The comparisons of salaries for full Professors at Penn with salaries at other AAU institutions in this year's report raise concerns that have been noted in prior SCESF reports. The concerns were, frankly, worrying last year; and since Great Recession or no Great Recession, our competitive position seems to be eroding, the Committee's worries are absolutely no less than previously stated. While in most cases faculty at Penn are absolutely advantaged compared to faculty at many other universities, there are abundant instances of Penn losing its advantage over the past five years and more and comparatively few instances of it gaining in position. This is particularly, and particularly uncomfortably, striking in comparisons to the universities with which we really compete for faculty.

The five-year comparison with the larger university comparison set once again showed a marked overall pattern of lost ground. Penn lost ground between 2005 and 2009 decisively in full and Associate Professor compensation and lost ground narrowly for Assistant Professor compensation. There were 37 potential comparisons across the three ranks in the larger set of universities comparing 2005 and 2009. Of those Penn had lost some ground in 23 (a little short of two-thirds of the total), and lost ground more substantially (a percentile loss of 5% or more) in 13 of those (up from 12 last year, with this year's figure more than a third of the total). Penn gained ground substantially in only 6 areas (an improvement of 2 relative to last year but still less than half of the number of areas in which Penn lost ground substantially).

The results of the annual AAUP (nominal) salary survey for a group of 19 "peer" research universities places the mean salary of Penn Full Professors in rank order eight as of academic year 2009-10, a decline of two places from the position it had held for several previous years but the same position as last year. Of the 18 other universities, however, 14 have had relatively greater increases in mean salaries over the 2005-2009 period. Among the 5 which did not outpace Penn, 3 were state universities. Of the six other Ivies in the comparison group, only Harvard has not increased its relative lead. (At 12.5% ahead of Penn in 2005 and 12.4 % ahead in 2008, it has basically just retained its position ahead of Penn and everyone else.) The changes in standing do vary by school or area within school. The situation in Veterinary Medicine appears to be particularly dire and, to the extent this is a consequence of a transitory problem with State funding, is perhaps a suitable case for ad hoc intervention. The scale of the problems in the various parts of SAS are not as extreme as those in Veterinary Medicine; but the problems in SAS are broader in scope and their persistence, given the core role of SAS in the life and external reputation of the University, must be very worrying to everyone concerned about the University's long-run health.

It is not entirely clear how much of the observed variation from one year to the next in Table 5 should be thought of as normal churning and how much a pronounced development that ought to command attention. But our focus on the pattern between 2005 and 2009 laid out in the preceding paragraph suggests a robust pattern.[17] We see several general indications that the University's position is eroding; and our position relative to the universities to which Penn most often compares itself, and to which it most often loses honored faculty colleagues is unambiguous. The SCESF emphasizes that it is important for Penn to continue to monitor the level of salaries for Full Professors relative to salaries at the leading universities so that Penn is in a position to become, and remain, increasingly competitive. Becoming decreasingly competitive is a distinct alternative possibility; and compromising the increment pool to respond to aggressive outside offers to a handful of individuals is no solution to a much more broadly based and potentially dangerous problem. This is the second year in a row we have felt obliged to be so emphatic on this point. The longer the state of affairs to which we point continues, the more likely the dangerous possible outcomes become.

2. Internal Variability.

There is great variability in the distribution of faculty salary resources among and within the three professorial ranks (Tables 9 and 10) and among percentage salary increases by rank within schools (Tables 6, 7, and 8), though the variable we report this year in this last set of tables is clearly heavily affected by the unusual financial considerations discussed in Section II above. Some level of variability in average faculty salaries among schools/areas is likely required to maintain Penn's competitive standings within different academic fields. Nonetheless, the SCESF believes that this variability should continue to be monitored to be sure that these differences are warranted by factors such as competitive pressures. It is clear that some schools/areas adhered closely to the Central Administration's encouragement to freeze most (higher) salaries and other schools did not.

Percentage salary increases by rank and gender (Table 11) are also moderate this year. The change this year in the figures for average salary levels for Assistant Professors by gender after weighting salaries to reflect the gender distribution of faculty across schools/areas (Table 12) seem likely to reflect sampling error rather than a secular change (though watchfulness here would seem to be in order). The higher ranks still show a marked gender bias, especially Full Professors. The bias may to some extent be a cohort phenomenon. It merits continued monitoring as well as deeper probing than it has obtained to date.

B. Conditions of Concern

1. External Competitiveness.

Although Penn faculty salaries are generally competitive with those in the comparison set of universities (as noted above), the following particular conditions are of concern about the external competitiveness of faculty salaries at Penn:

• In order to recruit and retain a superior faculty, Penn's salaries must be competitive with those of peer institutions. For academic fields for which data are available from the AAU Data Exchange, it appears that Penn has strengthened somewhat its competitive position between fall 2005 and fall 2009 for a number of rank-school/area cells and has strengthened its competitive position markedly for Full Professors in Dental Medicine and Design, for Associate Professors in Design and Social Science-SAS, and for Assistant Professors in Engineering and Applied Science and Nursing. However, between FY 2005 and FY 2009, Penn's competitive position, as measured by mean faculty salaries, declined somewhat in many more; and Penn's competitive position declined markedly for Full Professors of Humanities-SAS, Natural Science-SAS, Social Policy & Practice, Veterinary Medicine, and Wharton-Public Policy, for Associate Professors in Humanities-SAS, Natural Science-SAS, Social Science-SAS, and Veterinary Medicine, and of Dental Medicine, Natural Science (SAS), and Veterinary Medicine, and for Assistant Professors in Law, Natural Science-SAS, Social Science-SAS, and Veterinary Medicine. The SCESF suggests that salaries in these areas be reviewed to ensure that salary increases are sufficient. It is a matter of particular concern that in two fields, Natural Science-SAS and Veterinary Medicine, the competitive position declined at all ranks.

• Compared with mean salaries for faculty at other AAU institutions, mean salaries at Penn appear particularly low for Associate Professors in the School of Veterinary Medicine. Such a finding plainly raises the question of whether such salaries are likely to attract and to keep faculty of the caliber necessary for Penn's longer-run aspirations to be in the top end of the School's comparison group and, ultimately, to maintain a unit of the University of national prominence and reputation.

• Compared with mean salaries at 19 leading research universities, mean salaries for Full Professors at Penn became somewhat less competitive between 2005-06 and 2009-10. The salary advantage of Full Professors at Harvard over Penn in nominal dollars stayed roughly constant and Penn's position in the rank order seems likely to have declined only slightly. But over this same period the salary advantage for Full Professors over Penn increased at almost all of the schools ranked above us—in particular Stanford, Princeton, Chicago, and Yale—and Columbia and NYU began to pay better. The universities below us are almost all catching up. Our position is not outstanding; and it is weakening.

2. Internal Equity.

In the absence of data on individual faculty merit to compare with data on individual faculty salaries, the SCESF is not able to identify any specific instance of inequity among the dimensions of salary variability included in this report. The SCESF has over the years been concerned that some of the wide variability in individual faculty salaries may entail more than a trivial element of inequity. Although we are not ever able to report specific instances of salary inequity among individual faculty members, ranks, departments, or schools, we have often identified conditions of average real wage declines that may give rise to equity concerns. This

17 Again, the interested reader may wish to review the parallel discussion in last year's Report.

year's conditions are unusual and, we all hope, transitory. This remains an issue worth watching in the future, both in terms of the percentage of all continuing standing faculty (Table 2) and continuing Full Professors (Table 3) receiving percentage increases in salary below the cumulative percentage increases in the Philadelphia CPI and in terms of the share of faculty receiving percentage salary increases above the rate of inflation over this period varying across schools.

We note that such data may reflect changing competitive markets across schools/areas and differing shares of faculty across schools/areas that are not performing adequately. But, these aspects of the distribution of Penn faculty salaries also may reflect growing inequities. The SCESF emphasizes that these developments should be carefully monitored in an attempt to understand whether they are warranted or reflect, even in part, undesired inequities.

VII. SCESF Communication with Provost's Office

A. SCESF Requests in Preparation of the 2008-09 SCESF Report and Responses

The Provost's Office was broadly responsive to the Committee's requests last year for more information and for notably earlier provision of tabular material than has been the custom in the past. We thank Provost Vincent Price, Vice Provost for Faculty Lynn Lees, and Assistant Vice-President for Institutional Research and Analysis Stacey Lopez for their cooperative attitude and for their efforts. We hope that the tables can, going forward, continue to be provided in a timely way so that our report can be drafted and discussed with the Provost or the Vice Provost, before the parameters for salary increases for the coming year are set.

B. SCESF Recommendations and Questions for the Administration for 2008-09

In accordance with Faculty Senate policy, following are recommendations and questions for the administration that arose in the SCESF discussions, including some updates on the status of recommendations made in previous SCESF reports.

1. Salary Competitiveness

To provide high-quality instruction, research, and service, the University must maintain and attain faculty salaries at levels that are highly competitive with salaries provided by peer universities, while simultaneously sustaining other components of university operations.

SCESF Recommendations

a.) Mean salaries at Penn have fallen behind the comparison groups in the AAU Data Exchange in a number of areas (e.g., compare first and last columns in Table 4 on either the traditional or the more robust measure we discussed above). The SCESF recommends that priority be placed on increasing mean salaries to competitive levels for the faculty groups that have fallen behind.

The Provost's Office agrees to explore apparent changes in the competitive standing of fields identified by the SCESF report and to explore with deans corrective actions that may be justified and financially feasible. FY 2009-2010 was an atypical year, during which University budgets had to contend not only with sharply decreased returns from endowment funds, combined with rising costs of financial aid to undergraduate and graduate students. The University initiated strong measures to contain costs, which included limitations on hiring, staff reclassifications, and informal salary freezes. Nevertheless, the vast majority of Penn salaries for all ranks and all schools (33 of 41) remain within the top ten institutions of their cohorts and the salary differences measured among institutions for specific ranks and fields is small (See Table 10).

b.) We note that there is room for improvement for faculty in many of the rank by school/area comparisons (Table 4). Moreover, the gaps in mean salaries between Full Professors at Penn and Full Professors at Stanford, Princeton, Chicago, and Yale increased between 2005-06 and 2009-10 (Table 5), other potentially competitive universities in fact overtook Penn, and most of the universities below Penn gained on Penn. The question arises whether the University can retain and attract the highest-quality faculty members unless faculty salaries are in the top group. Our competitors appear to be setting budgetary priorities as if there was an active market for university faculty; and given the quality and professional visibility of the Penn faculty, persistent decay in this regard poses a long-term danger to the University. Aggressive responses to individual retention problems considered in isolation do not represent a viable response to the broader pattern of declining external competitiveness coupled with internal inequity. This is a much larger problem. It has been growing for some time. It warrants a systemic response.

Comparative data on faculty salaries at our peer institutions deserves serious consideration. The President and Provost are committed to the principle that Penn should offer highly competitive faculty salaries and to maintain the University's strong investment in its faculty, recognizing that some of our peer institutions have far greater financial resources than Penn.

c.) Even though priority should be placed on regaining Penn's competitive level in the academic fields identified above, the SCESF recommends that equal priority be given to recognizing and rewarding with salary increases distinguished performance of faculty members who choose not to seek, or use, attractive offers of external appointment to negotiate salary increases. This is in part an issue of equity, in part an issue of morale, and in part an issue of not creating problems for the university in the future. The SCESF recognizes that these are decisions taken at the Dean- and Department Chair levels but observes that decision-makers at those levels are often keenly aware of budget constraint issues. The Committee recognizes that the Guidelines published annually are explicit on this matter but feels that explicit additional guidance from the Provost downwards would be very helpful in this matter.

The yearly review process is designed to identify distinguished performance, and salary increases are assigned according to merit. During FY 2009-2010, the size of the available pool made it more than usually challenging to reward productivity, teaching, and service all at a level that outpaced the CPI.

2. Salary Equity

Inequity among individual faculty salaries by rank within departments (and schools that are organized as single departments) must be identified and eliminated.

SCESF Recommendations

a.) The SCESF continues to recommend that the Provost and Deans give consideration to decreasing the number of instances in which faculty members who have performed at least at a satisfactory level are awarded salary increases that are below the annual growth in the CPI (Phil.). In making this recommendation, we realize that the feasibility of awarding increases to faculty members with satisfactory performance at least as great as growth in the CPI depends on the difference between funds available for salary increases and the CPI growth percentage – with the larger the positive difference, the greater the feasibility of providing salary increases of at least the CPI growth percentage. We also recognize that there may be periods of financial stringency as in the 2009-2010 fiscal year. But much important work within the University goes on on an essentially voluntary basis. We fear that extended declines in real compensation will have marked adverse effects on the University not just through departures but through the consequences of depressed morale.

FY 2009-2010 was a year of great financial stringency, which we hope will not be repeated. Extended declines in real terms of faculty compensation are not in the interest of the University or the schools. As always, the schools determine the size of their overall faculty salary pools in conjunction with their overall budgets, which must cover multiple activities and commitments.

b.) Tables 2 and 3 give information about the percentage of faculty members receiving increases less than the rise in the cost of living, but they give data only for a single academic year. The real cost to the faculty member of a series of increases each of which is only slightly below the CPI growth percentages could be significant. In general, it would be useful to supplement Tables 2 and 3 with information cumulating increases and changes in the cost of living over a longer time interval. The Committee does not currently see such data and therefore cannot currently comment on whether or not this is a problem and, if it is, what the extent of the problem might be. The Committee asked last year to see such data in the future. The Committee continues to want to discuss with the Provost's Office what an appropriate measurement frame might be.

The Provost's Office agrees to explore this request with the Office of Institutional Research and Analysis.

c.) In previous reports, the SCESF observed considerable variability in median faculty salaries across Penn's 14 schools/areas. The Committee understands that both school/area finances and external conditions will inevitably influence such figures. Information about the extent of this variability and its course over time is nonetheless of ongoing interest. The Committee would like to receive and analyze this data again in the future. *Because salaries are funded almost exclusively from the budgets of individual schools, and because schools operate within a variety of distinctive market pressures, there has been and will continue to be variability in faculty salaries among the schools. The Provost's Office will continue to share data with SCESF on this variability and to discuss its implications*

with the committee.

3. Gender Equity

Data in Table 12 show that average salaries are lower for women than for men faculty, especially for Full Professors, even after weighting the data to reflect differences in the gender distribution of faculty by school and area. The suggestion of gender inequity in faculty salaries is troubling. This pattern for full professors has been unchanging since FY2005. For assistant professors there is close equality, while for associate professors median salaries are similar, but men have an advantage in mean salaries. The results for assistant professors this year seem anomalous but likely to be transitory.

SCESF Recommendation

The SCESF last year recommended that the Provost's Office place priority on identifying the causes of observed gender differences in salaries and addressing any inequities that are not attributable to legitimate forces. In response, the Provost's Office noted that the 2009 Gender Equity Report found relatively few significant differences by gender when years of experience, department, and school are considered. It is not entirely apparent that statistical significance should be the criterion for action given the relatively small number of women in the analyses. Various questions suggest themselves. What is happening the size of the differences? Is there a "sea" of negative (albeit individually insignificant) signs? What happens when you control for the interdependence across the cells? Last year the Provost commented that the issue would require further study. The Committee would like a briefing on such further study as has taken place and concrete plans for whatever more may seem, after discussion with the Committee, to be in order.

The Provost's Office is committed to gender equity in salaries. While we are pleased to see that the differences between men's and women's salaries seems to be relatively small and declining over time, we will continue to monitor salary equity and we will ask IR&A to do further statistical analyses of salary data in order to clarify the issue.

4. Faculty Benefits

As faculty benefits at Penn compared with peer institutions have not been examined since the 1998-99 report, the SCESF requests that the Provost's Office provide this information for next year in accordance with what was done in 1998-99. Furthermore, going forward, we believe that, as recommended in prior reports, benefits should be reviewed to ensure competitiveness and appropriateness, roughly every five years. Although the Provost indicated in previous SCESF reports that this was a timely request, including last year's, we believe that this process has not yet been initiated.

SCESF Recommendation

Undertake the report on faculty benefits in the next SCESF report.

The request for a report on faculty benefits every five years is reasonable, and the Provost agrees to work with SCESF and with the Vice President with Human Resources to undertake such a study, which would parallel that done in 1998-1999, to permit comparability.

5. Further Information for Analysis

The SCESF would like some more information.

The requests listed below for additions to existing tables are reasonable, and we would be happy to discuss with SCESF and with IRA during the spring term their incorporation into the compilation of data for next year's report.

a.) Table 4 gives the rank of mean salaries by School (and occasionally sub-School category) relative to comparable units in the AAUDE survey. The Table is grouped by Penn faculty rank i.e. the Full Professors in each of the many groups, then the Associate Professors in each group, then the Assistant Professors. Five columns of annual figures present a history for each row's relative pay. The layout of the Table encourages the reader to compare how well given rank faculty are paid (relative to other universities) across Schools (etc.). Changes in position in this Table may to some extent represent redistribution across ranks within Schools. They may, however, to some extent represent policies or resource constraints within individual Schools. It seems to the Committee very likely the case that whatever causes there are lie within Schools.

SCESF Recommendation

The Committee thinks it might promote discussion of these causes, and more generally greater transparency in the resource allocation process, by reorganizing Table 4. Instead of grouping the lines by rank, they could be grouped by administrative units: first the Annenberg full, Associate, and Assistant Professors, then the Dental Medicine Full, Associate, and Assistant Professors, then all the ranks for the Design School, and so forth. The Committee would like to discuss with the administration its views on the pros and cons of doing this going forward.

The Committee is also concerned that the shifts in comparison set sizes over time in the individual lines of Table 4 may obscure larger patterns. The Committee is contemplating creating an additional table giving explicitly percentiles, deciles, or some other such aggregation as another way of making the trends in this Table more transparent.

b.) Table 5 presents percentage differences in mean academic base salary levels for Full Professors at a sample of major research universities over a five-year history. Each column is calculated relative to the Penn absolute figure that year. Trends in these figures are not as easy to pick out as they might be.

SCESF Recommendation

The Committee would like to explore possible forms for a supplementary Table or graph, to be routinely published going forward, highlighting changes in these positions over time.

c.) Tables 6, 7, and 8 give first, second, and third quartile increase in percentages for Full Professors continuing in rank, Associate Professors continuing in rank, and Assistant Professors continuing in rank, by School and sub-school unit. These figures would be much more meaningful compared to something.

SCESF Recommendation

The Committee requests that going forward, a column be routinely added to each of these three Tables giving the inter-quartile range for each row as a percentage of the median. The Committee would also like to publish the means in these Tables (for purposes of convenient comparison to the guidelines).

d.) Table 12 gives unweighted and weighted academic base salaries for Penn faculty members who have continued in rank broken down by rank and gender. It would be easier to interpret this table if a column could be added to the right of the current right-hand column of the table giving percentage of faculty at each rank who are female.

SCESF Recommendation

The Committee requests that going forward, a column be routinely added to Table 12 as described above.

VIII. Members of the 2010-11 Senate Committee on the Economic Status of the Faculty

William Dailey, SAS/Chemistry
Sarah Kagan, Nursing
Andrea Liu, SAS/Physics & Astronomy
Daniel Raff, Wharton/Management, Chair
Tim Rebbeck, SOM/Biostatistics & Epidemiology
Petra Todd, SAS/Economics

Ex officio
Senate Chair, Robert Hornik, Annenberg
Senate Chair-Elect, Camille Charles, SAS/Sociology
Senate Past-Chair, Harvey Rubin, SOM/Infectious Diseases

The Committee would like to acknowledge explicitly the very valuable assistance of Sue White of the Office of the Faculty Senate.

Tables begin on next page

Table 1

Average academic base salary percentage increases of continuing Penn standing faculty members by rank in comparison with the Consumer Price Index (CPI) and Penn Budget Guidelines

Group/Condition	Metric	FYs 2009-2010
Professor	Mean	2.2%
	Median	0.0%
Associate Professor	Mean	2.4%
	Median	0.8%
Assistant Professor	Mean	1.6%
	Median	1.1%
All Three Ranks	Mean	2.1%
	Median	0.6%
U.S. City Average CPI Growth	Mean	1.1%
Phil. CPI Growth	Mean	1.9%
Budget Guidelines	Mean	2.0%

Notes: Academic base salary increases pertain to all Penn standing faculty members who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increases are calculated. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

FYs 2009-2010 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2009 to June 2010

Table 2

Percentage of continuing Penn standing faculty members awarded percentage salary increases exceeding the percentage growth the in consumer price index (CPI) for Philadelphia

Schools and Disciplinary Areas	Percentage of all Standing Faculty with Salary Increases Exceeding Growth in the CPI (Phil.) FY 2009 to 2010
Annenberg	43.8%
Dental Medicine	29.6%
Design	53.6%
Engineering & Applied Science	54.4%
Graduate Education	8.1%
Humanities (A&S)	7.5%
Law	2.2%
Medicine-Basic Science	14.0%
Natural Science (A&S)	5.8%
Nursing	35.1%
Social Policy & Practice	11.1%
Social Science (A&S)	8.4%
Veterinary Medicine	4.3%
Wharton	20.1%
All Schools/Areas	16.9%
U.S. City Average CPI Growth	1.1%
Phil. CPI Growth	1.9%
Budget Guidelines	2.0%

Notes: Academic base salary increases pertain to all Penn standing faculty members who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increases are calculated. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

FYs 2009-2010 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2009 to 2010

Table 3

Percentage of continuing Penn FULL PROFESSORS awarded percentage salary increases exceeding the percentage growth the in consumer price index (CPI) for Philadelphia

Schools and Disciplinary Areas	Percentage of all FULL PROFESSORS with Salary Increases Exceeding Growth in the CPI (Phil.) FY 2009 to 2010
Annenberg	18.2%
Dental Medicine	25.0%
Design	38.5%
Engineering & Applied Science	29.0%
Graduate Education	11.1%
Humanities (A&S)	4.8%
Law	2.4%
Medicine-Basic Science	12.2%
Natural Science (A&S)	5.1%
Nursing	9.1%
Social Policy & Practice	n/a
Social Science (A&S)	13.8%
Veterinary Medicine	n/a
Wharton	19.6%
All Schools/Areas	12.3%
U.S. City Average CPI Growth	1.1%
Phil. CPI Growth	1.9%
Budget Guidelines	2.0%

Notes: Academic base salary increases pertain to all Penn FULL PROFESSORS who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increases are calculated. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

FYs 2009-2010 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2009 to 2010

Tables continue on next page

Table 4

Rank of mean salaries of Penn faculty by academic fields as compared to 60 selected universities participating in the American Association of Universities Data Exchange (AAUDE) survey.

Academic Field	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009
Full Professor					
Annenberg	2/35	2/36	1/38	1/38	1/40
Dental Medicine	6/34	8/35	10/38	11/43	2/44
Design	7/51	3/53	9/53	8/51	5/51
Engineering & Applied Science	14/55	14/56	14/56	14/53	11/53
Graduate Education	3/43	4/45	4/48	4/45	4/44
Humanities (A&S)	5/55	5/56	10/56	8/53	9/54
Law	6/36	7/36	10/41	7/39	7/37
Medicine-Basic Science	3/35	3/37	3/37	5/53	6/54
Natural Science (A&S)	12/56	11/57	15/57	13/54	15/54
Nursing	2/24	2/24	2/26	2/25	2/24
Social Policy & Practice	4/22	6/24	6/25	5/23	7/23
Social Science (A&S)	9/55	9/56	9/57	9/54	8/54
Veterinary Medicine	1/14	1/13	4/17	3/14	3/13
Wharton-Business & Management	2/52	3/53	7/53	5/50	4/51
Wharton-Public Policy	3/19	3/18	--	15/50	15/52
Wharton-Statistics	1/34	1/35	1/34	1/34	1/32
Associate Professor					
Annenberg	--	--	--	--	--
Dental Medicine	--	--	8/35	14/41	9/42
Design	7/50	1/51	7/53	6/51	3/51
Engineering & Applied Science	9/55	7/55	10/56	9/53	7/53
Graduate Education	2/46	3/46	4/48	5/44	4/44
Humanities (A&S)	8/55	6/56	10/56	6/53	12/54
Law	n/a	n/a	n/a	n/a	--
Medicine-Basic Science	4/34	2/36	3/37	5/53	7/54
Natural Science (A&S)	11/56	9/57	11/57	11/54	14/54
Nursing	3/26	3/26	5/26	7/24	6/23
Social Policy & Practice	5/22	5/24	--	3/24	--
Social Science (A&S)	11/55	9/56	11/57	11/54	8/54
Veterinary Medicine	2/14	1/13	3/17	8/14	9/13
Wharton-Business & Management	1/52	1/53	2/53	1/50	2/50
Wharton-Public Policy	--	--	--	--	--
Wharton-Statistics	--	--	--	2/27	--
Assistant Professor					
Annenberg	--	--	--	--	--
Dental Medicine	--	4/34	11/36	8/42	8/43
Design	4/49	--	5/52	7/49	4/50
Engineering & Applied Science	11/55	6/56	13/56	10/53	5/53
Graduate Education	7/43	6/45	6/47	6/45	6/43
Humanities (A&S)	13/55	14/56	19/56	17/53	14/54
Law	5/28	--	--	--	6/25
Medicine-Basic Science	5/34	9/38	6/37	7/53	10/54
Natural Science (A&S)	7/56	8/57	18/57	15/54	15/54
Nursing	6/27	4/26	5/26	3/24	3/23
Social Policy & Practice	--	--	--	6/24	6/25
Social Science (A&S)	8/55	15/56	10/57	13/54	11/54
Veterinary Medicine	1/14	1/13	1/17	6/14	5/13
Wharton-Business & Management	7/52	3/53	6/53	10/50	5/50
Wharton-Public Policy	--	--	--	--	1/51
Wharton-Statistics	--	--	1/33	1/33	--

Notes: Median salary data from this particular data source is not complete, and therefore, the more complete average salary data set is used. The AAUDE survey instructions request academic base salaries and this was the metric used for submitting Penn faculty salaries.

Using the federal CIP (Classification of Instructional Programs) codes for 2000, departments at comparable universities were mapped to Penn Schools.

** Between Fall 2007 and Fall 2008, several modifications were made to CIP Code classifications for medical sciences. In Fall 2009, at the school's request, Wharton-Public Policy began being compared to Economics rather than Policy programs.

Calculations of rank only include those universities that have relevant departments. Therefore, the number of universities among which Penn is ranked varies by field.

Rank is suppressed for all cells which contain fewer than five Penn faculty members.

Tables continue on next page

Table 5

Percentage differences in mean academic base salary levels of full professors at a sample of comparable research universities for Academic Year 2009-2010

Full Professor Salaries: Percentage Differences*

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Harvard	12.5%	13.4%	11.7%	13.7%	12.4%
Columbia	N/A	N/A	-0.4%	3.4%	10.9%
Chicago	3.5%	3.8%	4.4%	6.0%	8.2%
Stanford	4.2%	0.7%	6.0%	7.4%	6.6%
Princeton	4.6%	4.6%	5.2%	6.4%	6.4%
Yale	0.9%	0.7%	1.1%	3.1%	2.4%
NYU	-3.9%	-4.5%	-0.5%	0.8%	0.9%
Penn	**$149.9K**	**$156.5K**	**163.3K**	**169.4K**	**170.1K**
Northwestern	-6.1%	-5.9%	-6.3%	-4.5%	-2.2%
MIT	-6.4%	-6.8%	-7.7%	-5.4%	-5.3%
Duke	-9.0%	-9.3%	-7.0%	-4.8%	-5.5%
UCLA	-14.3%	-14.9%	N/A	-14.7%	-13.0%
UC Berkeley	-15.8%	-16.1%	N/A	-15.3%	-14.3%
Michigan	-16.2%	-16.7%	-19.1%	-16.1%	-15.3%
N.C. (Chapel Hill)	-23.1%	-19.0%	-17.9%	-15.8%	-15.9%
Carnegie-Mellon	-17.4%	-18.8%	-23.5%	-19.4%	-19.1%
Virginia	-17.9%	-18.2%	-23.1%	-21.3%	-20.8%
Texas (Austin)	-22.8%	-22.6%	-29.6%	-21.9%	-21.6%
MN (Twin Cities)	-26.4%	-25.5%	-34.6%	-24.8%	-26.6%

Notes: Penn academic base mean salaries are based on standing faculty members at the rank of professor. Excluded are all members of the Faculty of Medicine except basic scientists, and all standing faculty members who are appointed as Clinician Educators. Data Source: AAUP Salary Surveys.
Universities are ordered from highest to lowest mean salaries for full professors as of 2008-2009.

For each year reported, the difference between the Penn mean salary and the mean salary for a comparison university was computed as a percentage of the Penn salary.

Table 6

School/Area	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases by Year FYs 2009-2010		
	Q1	**Md.**	**Q3**
All Schools	0.0%	0.0%	0.8%
Annenberg	0.0%	0.0%	0.0%
Dental Medicine	1.0%	1.2%	1.8%
Design	0.9%	1.0%	2.2%
Engineering & Applied Science	1.4%	1.6%	2.0%
Graduate Education	0.0%	0.0%	0.0%
Humanities (A&S)	0.0%	0.0%	0.0%
Law	0.8%	0.9%	1.0%
Medicine-Basic Science	0.0%	0.0%	0.0%
Natural Science (A&S)	0.0%	0.0%	0.0%
Nursing	0.6%	0.9%	0.9%
Social Policy & Practice	-	0.8%	-
Social Science (A&S)	0.0%	0.0%	0.0%
Veterinary Medicine	0.0%	0.0%	0.0%
Wharton	0.6%	0.7%	0.9%
Budget Guidelines		2.0%	

Notes: The Budget Guideline show under each rank is for comparison purposes. As per Penn policy, it is a guideline for a salary increment pool for all standing faculty members in each school, but not specifically for each rank.

Academic base salary increases pertain to all Penn standing faculty members who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increase are calculated. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

Salary increases include increases from all sources (e.g. merit, market, retention). A median (Md.) percentage salary increase is the mid-point of the increase within each school/are and rank (i.e., half of all increases were below the median and half were above).

Variability of salary increase percentages is indicated by the first quartile (Q1) and third (Q3) percentage increases.

At the lower end of the salary increase percentages, 25% of the all increase were below the Q1, while 25% were above.

Median increases are reported only if the number of faculty members is four or more. The quartile increase are reported only if the number of faculty members is more than ten.

Tables continue on next page

Table 7

ASSOCIATE PROFESSORS: Median academic base salary percentage increases of faculty continuing in rank who were Penn ASSOCIATE PROFESSORS for FY2010, along with the first and third quartile salary increases

School/Area	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases by Year FYs 2009-2010		
	Q1	Md.	Q3
All Schools	0.0%	0.5%	1.3%
Annenberg	-	-	-
Dental Medicine	-	1.7%	-
Design	-	2.6%	-
Engineering & Applied Science	2.0%	2.2%	2.3%
Graduate Education	0.0%	0.0%	0.0%
Humanities (A&S)	0.0%	0.9%	1.0%
Law	n/a	n/a	n/a
Medicine-Basic Science	0.0%	0.0%	0.0%
Natural Science (A&S)	0.0%	0.0%	0.0%
Nursing	1.3%	1.3%	1.4%
Social Policy & Practice	-	-	-
Social Science (A&S)	0.0%	0.0%	0.6%
Veterinary Medicine	0.0%	0.0%	0.0%
Wharton	0.7%	0.9%	1.1%
Budget Guidelines		2.0%	

Notes: The Budget Guideline show under each rank is for comparison purposes. As per Penn policy, it is a guideline for a salary increment pool for all standing faculty members in each school, but not specifically for each rank.

Academic base salary increases pertain to all Penn standing faculty members who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increase are calculated. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

Salary increases include increases from all sources (e.g. merit, market, retention).
A median (Md.) percentage salary increase is the mid-point of the increase within each school/are and rank (i.e., half of all increases were below the median and half were above).

Variability of salary increase percentages is indicated by the first quartile (Q1) and third (Q3) percentage increases.

At the lower end of the salary increase percentages, 25% of the all increase were below the Q1, while 25% were above.

Median increases are reported only if the number of faculty members is four or more. The quartile increase are reported only if the number of faculty members is more than ten.

Table 8

ASSISTANT PROFESSORS: Median academic base salary percentage increases of faculty continuing in rank who were Penn ASSISTANT PROFESSORS for FY2010, along with the first and third quartile salary increases

School/Area	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases by Year FYs 2009-2010		
	Q1	Md.	Q3
All Schools	0.9%	1.1%	1.7%
Annenberg	-	-	-
Dental Medicine	-	1.8%	-
Design	-	1.7%	-
Engineering & Applied Science	2.4%	2.5%	2.5%
Graduate Education	-	0.0%	-
Humanities (A&S)	1.0%	1.6%	1.6%
Law	-	-	-
Medicine-Basic Science	1.2%	1.2%	1.3%
Natural Science (A&S)	0.9%	1.0%	1.0%
Nursing	2.0%	2.1%	2.5%
Social Policy & Practice	-	1.7%	-
Social Science (A&S)	0.0%	0.9%	1.0%
Veterinary Medicine	0.0%	0.0%	0.0%
Wharton	0.8%	1.0%	1.9%
Budget Guidelines		2.0%	

Notes: The Budget Guideline show under each rank is for comparison purposes. As per Penn policy, it is a guideline for a salary increment pool for all standing faculty members in each school, but not specifically for each rank.

Academic base salary increases pertain to all Penn standing faculty members who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increase are calculated. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

Salary increases include increases from all sources (e.g. merit, market, retention).

A median (Md.) percentage salary increase is the mid-point of the increase within each school/are and rank (i.e., half of all increases were below the median and half were above).

Variability of salary increase percentages is indicated by the first quartile (Q1) and third (Q3) percentage increases.

At the lower end of the salary increase percentages, 25% of the all increase were below the Q1, while 25% were above.

Median increases are reported only if the number of faculty members is four or more. The quartile increase are reported only if the number of faculty members is more than ten.

Tables continue on next page

Table 9

Mean academic base salary levels of Penn standing faculty members who continued in rank by rank

Rank	Academic Year	Average	Amount	Not Weighted	Weighted
Professor	2005-2006	Mean	$147,815	1.69	1.82
		Median	$137,000	1.87	1.81
	2006-2007	Mean	$154,627	1.71	1.82
		Median	$143,000	1.90	1.83
	2007-2008	Mean	$160,803	1.72	1.85
		Median	$147,875	1.94	1.84
	2008-2009	Mean	$169,739	1.78	1.85
		Median	$155,600	1.94	1.85
	2009-2010	Mean	$172,585	1.78	1.85
		Median	$158,337	1.95	1.84
Associate Professor	2005-2006	Mean	$98,542	1.13	1.25
		Median	$87,500	1.20	1.26
	2006-2007	Mean	$103,378	1.14	1.25
		Median	$91,900	1.22	1.26
	2007-2008	Mean	$106,061	1.13	1.26
		Median	$94,172	1.23	1.26
	2008-2009	Mean	$110,913	1.16	1.25
		Median	$98,206	1.23	1.23
	2009-2010	Mean	$110,048	1.13	1.24
		Median	$99,550	1.23	1.22
Assistant Professor	2005-2006	Mean	$87,268	1.00	1.00
		Median	$73,132	1.00	1.00
	2006-2007	Mean	$90,513	1.00	1.00
		Median	$75,136	1.00	1.00
	2007-2008	Mean	$93,547	1.00	1.00
		Median	$76,421	1.00	1.00
	2008-2009	Mean	$95,382	1.00	1.00
		Median	$80,030	1.00	1.00
	2009-2010	Mean	$97,223	1.00	1.00
		Median	$81,068	1.00	1.00

Notes: Mean academic base salary levels are based on all Penn standing faculty members who continued in rank in FY 2010 from their respective prior years. All salaries are converted to a nine-month base.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

The data are weighted by the number of continuing faculty members at each rank in each school.

Tables continue on next page

Table 10

Variability of academic base salary levels for faculty who continued in rank: First, Second and third quartile median salary levels by rank and year

Rank	Academic Year	Q1	Median	Q3	IQR	IQR to Median Ratio	# of Areas
Professor	2005-2006	$115,500	$137,000	$171,916	$56,416	0.41	14
	2006-2007	$120,500	$143,000	$180,400	$59,900	0.42	14
	2007-2008	$125,970	$147,875	$187,000	$61,030	0.41	14
	2008-2009	$130,610	$155,600	$200,000	$69,390	0.45	14
	2009-2010	$131,572	$158,337	$202,875	$71,303	0.45	14
Associate Professor	2005-2006	$77,600	$87,500	$105,075	$27,475	0.31	12
	2006-2007	$81,025	$91,900	$107,400	$26,375	0.29	12
	2007-2008	$83,455	$94,172	$111,000	$27,545	0.29	13
	2008-2009	$86,376	$98,206	$117,700	$31,324	0.32	13
	2009-2010	$85,700	$99,550	$115,266	$29,566	0.30	13
Assistant Professor	2005-2006	$65,241	$73,132	$103,125	$37,885	0.52	14
	2006-2007	$67,909	$75,136	$104,500	$36,591	0.49	14
	2007-2008	$69,922	$76,421	$110,000	$40,078	0.52	14
	2008-2009	$72,568	$80,030	$103,293	$30,725	0.38	14
	2009-2010	$73,750	$81,068	$106,080	$32,330	0.40	14

Notes: Median academic base salary levels are based on all Penn standing faculty members who continued in rank in FY 2011 from their respective prior years.
Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools. All salaries are converted to a nine-month base.

The data are weighted by the number of continuing faculty members at each rank in each school.

Table 11

Percentage Salary Increase Distribution of Faculty Who Continued in Rank by Gender and Rank

		First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases by Year FYs 2009-2010		
Rank	**Sex**	**Q1**	**Md.**	**Q3**
Professor	Men	0.0%	0.0%	0.9%
	Women	0.0%	0.0%	0.8%
Associate Professor	Men	0.0%	0.0%	1.0%
	Women	0.0%	0.9%	1.4%
Assistant Professor	Men	0.8%	1.0%	1.7%
	Women	1.0%	1.1%	1.8%

Notes: Academic base salary increases pertain to all Penn standing faculty members who were faculty at the fall census of both years (or three years for cumulative increases) for which percentage increase are calculated.
Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools. All salaries are converted to a nine-month base.

Tables continue on next page

Table 12

Mean academic base salary levels of Penn standing faculty members who continued in rank by gender and rank

Rank	Academic Year	Metric	Women	Men	% Difference	Women	Men	% Difference
Professor	2005-2006	Mean	$139,706	$149,558	7.1%	$140,778	$149,256	6.0%
		Median	$126,935	$138,450	9.1%	$137,379	$146,120	6.4%
	2006-2007	Mean	$147,006	$156,267	6.3%	$145,892	$155,924	6.9%
		Median	$132,800	$144,350	8.7%	$142,866	$151,937	6.3%
	2007-2008	Mean	$150,286	$163,176	8.6%	$151,196	$163,176	7.9%
		Median	$137,013	$149,623	9.2%	$148,819	$159,494	7.2%
	2008-2009	Mean	$160,576	$171,779	7.0%	$161,153	$171,779	6.6%
		Median	$143,983	$157,550	9.4%	$155,980	$167,245	7.2%
	2009-2010	Mean	$161,532	$175,403	8.6%	$166,672	$175,403	5.2%
		Median	$148,541	$160,000	7.7%	$165,669	$170,459	2.9%
Associate Professor	2005-2006	Mean	$92,807	$101,484	9.3%	$92,395	$100,972	9.3%
		Median	$82,750	$93,500	13.0%	$92,849	$99,583	7.3%
	2006-2007	Mean	$94,765	$107,547	13.5%	$95,196	$107,045	12.4%
		Median	$87,263	$95,000	8.9%	$97,470	$103,697	6.4%
	2007-2008	Mean	$96,729	$110,812	14.6%	$106,225	$110,812	4.3%
		Median	$89,972	$98,170	9.1%	$110,306	$107,276	-2.7%
	2008-2009	Mean	$104,061	$114,076	9.6%	$110,244	$114,076	3.5%
		Median	$93,636	$101,900	8.8%	$110,470	$107,352	-2.8%
	2009-2010	Mean	$101,528	$114,411	12.7%	$111,560	$114,411	2.6%
		Median	$92,925	$102,750	10.6%	$109,374	$108,377	-0.9%
Assistant Professor	2005-2006	Mean	$80,757	$91,374	13.1%	$90,681	$91,374	0.8%
		Median	$68,190	$78,500	15.1%	$87,917	$89,163	1.4%
	2006-2007	Mean	$83,738	$95,015	13.5%	$93,783	$95,015	1.3%
		Median	$70,950	$84,000	18.4%	$90,765	$92,079	1.4%
	2007-2008	Mean	$88,223	$97,907	11.0%	$97,840	$97,907	0.1%
		Median	$72,641	$82,900	14.1%	$95,495	$94,331	-1.2%
	2008-2009	Mean	$89,046	$100,012	12.3%	$99,900	$100,012	0.1%
		Median	$76,400	$84,615	10.8%	$97,667	$96,777	-0.9%
	2009-2010	Mean	$89,601	$102,559	14.5%	$99,455	$102,559	3.1%
		Median	$77,925	$85,152	9.3%	$97,554	$99,938	2.4%

Notes: Mean academic base salary levels are based on all Penn standing faculty members who continued in rank in FY 2010 from their respective prior years.

Excluded were all members of the Faculty of Medicine except basic scientists, all Clinician Educators, faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools. All salaries are converted to a nine-month base.

All salaries reported on a 12-month basis for the purposes of this analysis, are adjusted to be comparable with the salaries reported on a 9-month basis.

Female faculty members are weighted using male weights. Male weights are calculated as a ratio of male faculty in each school/area to the total number of male faculty at Penn. Percent difference is calculated as the difference between male and female salaries divided by the female salary. Negative percent differences occur when the female salary exceeds the male salary.