

**2010-2011 Annual Report**  
**Senate Committee on the**  
**Economic Status of the Faculty**

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# SENATE Economic Status of the Faculty

## 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 the current economic status of the faculty as based on salary data. 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.<sup>1</sup> In addition, all salary data exclude faculty members from the Perelman School of Medicine except for basic scientists, and also exclude all clinician educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy and Practice). Current benefits data are analyzed in this SCESF Report in terms of total compensation at the level of Full Professor. The report is organized in terms of three broad concerns:

- Faculty salary setting process at Penn: 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.

Each of these three topics is addressed in a separate section of the report (Sections II, III, and V). Faculty benefits are addressed in relation to available data on mean total compensation for Full Professors through an external comparison in Section IV. Section VI describes the SCESF’s overall conclusions about the economic status of the faculty. Section VII details the SCESF’s provisional observations and recommendations.

In carrying out its charge, the Committee is cognizant of Penn’s salary policy for the period as stated by the President, Provost, and Executive Vice President and published in the *Almanac* (April 13, 2010). 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 are further used to reward valuable contributions of faculty and staff to the University’s mission and excellence.

Statistical data in this report were provided by the Office of Institutional Research and Analysis unless otherwise indicated. In studying faculty salaries for this report, the SCESF has in particular benefited greatly from access to detailed data provided by Penn’s central administration. These data explicitly exclude any information that would make it possible to identify individual faculty salaries. The SCESF understanding, both of Penn’s competitiveness with peer institutions in faculty salary levels and of faculty salary variations within Penn, is supported by access to this information and by the staff of the Office of Institutional Research and Analysis and the Office of the Vice Provost for Faculty. The SCESF appreciates the continued cooperation and assistance of these two offices.

As a whole, this report is data-intensive and detailed. Nonetheless, analysis of data from this year, in conjunction with trend analysis over the past five to six years, reveals two fundamental themes in understanding the economic status of the faculty and the implications of that status in larger University concerns and strategies.

Externally, Penn continues to lose ground overall to other universities, including those universities with which it competes for faculty, with regard to average salaries and compensation. While this trend corrected slightly in comparison with the previous year, it persists when data are examined in the context of the past five years. Gains made in the past year do not correct the overall trend in diminishing competitive advantage. Finally, while this trend varies from school to school within the University as well as within large schools like the School of Arts and Sciences (SAS), it is fundamentally a

1 Academic base year salary is salary that is paid for the normal academic duties of a standing 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.

concern for faculty throughout the twelve schools and for the university.

Internally, there is considerable heterogeneity in salary increases across schools both across and within rank. Additionally, the salary gap appears to be growing over time and differentially affects faculty in specific schools and in the rank of Assistant Professor. Specifically, median salary increases for 2010-2011 are below published salary guidelines for several schools within rank.

## II. Resources for Faculty Salaries and Annual Increases

Faculty salaries at Penn 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 of equity adjustments. Others may be direct responses countering outside offers or addressing other retention issues.

Almost all funds for faculty salaries come from each school’s operating budget. No central fund exists for faculty salaries in general. Most of each school’s resources are raised in accordance with the principles of Penn’s Responsibility Center Management (RCM).<sup>2</sup> In addition, subventions are distributed to schools by central administration. Such subventions are made for a variety of reasons. For example, subvention may be made in recognition of external effects of costly actions undertaken by individual schools to the benefit of broader university-wide interests.

Using available resources, the dean of each school makes a certain amount available for faculty salaries. Particular aspects of faculty salaries for which these funds are used include sustaining existing faculty appointments, providing annual salary increases for continuing faculty members, and creating salary funding for new faculty positions. In addition, all schools must provide funds to cover employee benefits. Current employee benefits account for 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. These recommendations are based on merit and are subject to general review and oversight by the Provost (see the statement of the “Salary Guidelines For 2010-2011” as published in *Almanac*, April 13, 2010). In consultation with the Council of Deans, the President, Provost, and Executive Vice President establish parameters for the “pool percentage” used in determining salary increases.

In this past academic year, deans within the twelve schools were authorized to award, as salary increases, a pool of up to 2.5% of the academic year 2009-2010 salaries of continuing faculty members. The salary increase range for individual salaries was 0% to 3.5%. Deans were asked to consult with the Provost about any individual increase below 1% for specifically non-meritorious performance. The deans were asked 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.” However, salary increases in excess of 3.5% likewise required discussion with the Provost. Presumably, the deans were then at liberty to create the case for individual increases exceeding 3.5% in those cases where salaries were not competitive and academic merit was in evidence. Importantly, the salary guidelines specifically noted that disparities in salary increases might occur given school-specific financial constraints: “A number of schools and centers have financial constraints that can only support budget growth of less than 2.5%. These financial constraints will affect the salary increase percentage that can be awarded, and may in some cases require holding salaries at current levels. Some schools may announce limits on salary increases for an entire class of faculty; for example, a decision to provide no increase, or capped increases, to faculty members earning more than a certain income. This information will be communicated separately by the school or center’s administration.”<sup>3</sup>

## III. Penn Faculty Salaries: External Comparisons

Mean Penn faculty salaries (i.e., academic year base salaries) are compared annually with three external indicators: (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

2 For a more detailed explanation of Penn’s Responsibility Center Management model, see [www.budget.upenn.edu/rcm/index.shtml](http://www.budget.upenn.edu/rcm/index.shtml)

3 *Almanac* - April 13, 2010, Volume 56, No. 29, see [www.upenn.edu/almanac/volumes/v56/n29/salary.html](http://www.upenn.edu/almanac/volumes/v56/n29/salary.html)

(c) average salaries of Full Professors in the set of 19 public and private research universities identified as most comparable to Penn within the larger group of universities submitting data to the “Annual Report on the Economic Status of the Profession” compendium issued by the American Association of University Professors (AAUP). These indicators and the resulting comparisons are discussed within this section.

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 to Associate Professor, effective July 1, 2010, are included among the Associate Professors for the 2010-11 year in Table 1. Salary increases they received due to their promotion are included in the percentage changes in salaries reported for Associate Professors in 2010-11. The same is true for those promoted at that time from Associate to Full Professor in Table 2. In contrast, in Tables 3 and 6 through 12, the information refers only to faculty members who continued in the same rank during 2010-2011. Including salaries of faculty who changed ranks, as in Tables 1 and 2, risks distorting data interpretation by inflating means used in this instance for external comparisons. Reports of median changes do not have this effect since those figures would not be affected by the presence of outliers. Importantly, only percentage salary change is 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 information about relative rank through comparison of Penn faculty salaries and those at the other universities surveyed in the designated rank on the date of the snapshot used to compile the data reported to the AAUP or American Association of Universities Data Exchange (AAUDE).

#### A. Comparisons with Growth in the Consumer Price Index (CPI)<sup>4</sup>

Mean and median salary increases for continuing faculty for Fiscal Years 2010 and 2011 averaged over all schools, are shown in percentage change, overall and 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 “pool” salary increase of 2.5%.<sup>5</sup>

Table 1 shows that the all-ranks median salary increase was 2.5% and the all-ranks mean increase was 3.8%. The median increase was 2.5% for faculty in the ranks of full and associate professor while the median for assistant professors was 2.7%. Mean increases were 3.7% for Full Professors, 4.4% for Associate Professors, and 3.4% for Assistant Professors. Table 1 indicates that for all ranks combined, the mean FY 2011 percentage salary increase was just slightly larger than the percentage change in the U.S. City Average CPI and one point higher than the Philadelphia CPI. However, the all-ranks median figure is considerably below the US City Average CPI growth and below the Philadelphia CPI as well while being exactly in line with the university salary guidelines.

The percentage of continuing faculty receiving percentage salary increases exceeding percentage growth in Philadelphia CPI are presented by school with both the US City Average and Philadelphia figures as well as the budget guidelines in Table 2. The SAS numbers are disaggregated into three disciplinary groupings—Humanities, Social and Natural Sciences. Table 2 shows remarkable range in the percentage of faculty obtaining salary increases in excess of CPI. Only 10.5% of faculty in the School of Veterinary Medicine received such an increase while 88.9% of faculty in the Law School received an increase in excess of 2.8%. Table 3 provides parallel information about trends for Full Professors continuing in rank and thus excludes promotion increases. Table 3 presents similar heterogeneity across the schools.

The SCESF recognizes that there are legitimate reasons for individual

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 July 1, 2008 and continuing through June 30, 2009.

faculty members to be awarded increments less than the growth in the CPI. For example, in any given year, the salary pool might only approximate, or fall below, the rate of growth in the CPI as was the case in this reporting period. Furthermore, in a small department or school, a few promotions or market adjustments needed to retain valued faculty members may require a disproportionate share of an existing pool, thereby leaving less available to address salary increases of other faculty members. Finally, some faculty members may lack sufficient 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, the salary increase is then apparently inequitably low. When this occurs in a persistent pattern, the issue merits further exploration given likely ill effects on faculty morale and ramifications on achieving excellence and the university’s mission.

#### B. Comparisons with Peer Universities Using AAUDE

The Association of American Universities Data Exchange (AAUDE) is a source of information about faculty salaries at peer universities. The Association of American Universities (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., Penn State and the Universities of Michigan, Virginia, and Maryland), and other public universities (e.g., Michigan State, University of California-Davis, and University of California-Irvine).<sup>6</sup> Penn uses AAUDE data for annual salary comparisons.

Mean faculty salaries by rank and school and disciplinary area at Penn are compared annually with AAUDE data. Table 4 provides these comparisons by rank for each of the following schools and areas within specific schools: Annenberg, Dental Medicine, Design, Engineering & Applied Science, Graduate Education, Humanities (SAS), Law, Medicine-Basic Science, Natural Science (SAS), Nursing, Social Policy and 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. Table 4 shows comparisons from Fall 2006 through Fall 2010 and situates each school or area relative to a comparison set. The individual comparison sets often change over time as seen in different denominators for any given comparison (e.g. the comparison group for the School of Nursing changed from last year to this with the number of schools with which Penn is compared shifting from 24 to 17). Thus, more robust measures of relative changes in position are warranted. We added such a measure to the comparison supplied by the Office of Institutional Research and Analysis last year and continue to report it below.

For most of the 16 schools and areas, Penn’s mean faculty salaries for all ranks in 2010-2011 rank in the upper fifth of the AAU institutions. The exceptions are the Natural Sciences in SAS, the Humanities in SAS at the Assistant and Associate Professor ranks, the School of Veterinary Medicine for all faculty ranks, the School of Social Policy and Practice in the Assistant and Full Professor ranks, and SEAS at the Full Professor rank. Some of these lower salary rankings, in SAS and SEAS for example, have remained fairly stable over time, pointing to a chronic issue. The School of Veterinary Medicine represents a particularly extreme example of decline. Assistant Professors are not far off from the top third but rank slightly lower this year than last, while Associate Professors rank well in the bottom third, showing as they did last year a marked decline. For the rest of the schools and ranks, the general pattern of relatively high overall position vis-à-vis the AAU comparison institutions might be seen as acceptable if not for trends over time. Examination of Fall 2006 comparisons with those for Fall 2010 reveals a worrisome trend toward comparative stagnation or frank decline in rank order within several schools and areas. This pattern has been addressed in SCESF Reports for the past two years. It remains unchanged. While Penn has made some gains in AAU rank comparisons, it continues to fall behind in many more.

For Full Professors, there are 15 schools and areas for which there are data for 2006 and 2010. For each sub-grouping, percentile rank (divid-

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

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ing rank by number of cases) can be calculated and compared. Of those comparisons, Penn has fallen in rank in 10 schools or areas while gaining in only 2. The other three rank comparisons are essentially unchanged. While many of these rank changes are minor, others are significant. Substantial losses (5% or greater change in percentile rank) are present in Design [-5%], Graduate Education [-6%], Humanities—SAS [-7%], Natural Sciences—SAS [-5%], Social Policy and Practice [-7%], and Veterinary Medicine [-14%]. All gains are small and, in the case of Dental Medicine, occur in the context of a marked decline in rank within the last year.

There are ten available comparisons for Associate Professors. Penn fell in relative salary for eight schools and areas, gained rank in one and remained stable in one. Substantial declines are present in Graduate Education [-10%], Humanities—SAS [-10%], Medicine—Basic Sciences [-8%], Natural Sciences—SAS [-8%], Nursing [-6%], and Veterinary Medicine [-70%]. Social Sciences shows a modest gain while Engineering and Applied Science remained stable in rank.

Among the nine schools and areas in which Assistant Professor salaries are compared in both years, there is more stability in rank. The notable exceptions are substantial losses in Natural Science—SAS [-12%] and Veterinary Medicine [-35%]. Medicine—Basic Sciences saw a 10% gain though that gain is largely attributable to a markedly larger comparison group with maintenance of rank at 8th.

Last year's SCESF Report commented on the adverse balance of substantial declines over gains. This report underscores the same finding and notes persistent concern on loss of competitive advantage. Concern remains sharpest for those areas in SAS and certainly for Veterinary Medicine. Penn has fallen relative to its peers over the past five years. However, this trend was countered somewhat with some gains and stability in other cases in the immediate past year. Nonetheless, this countertrend will need to be continued and strengthened if the longer term loss is to be reversed. Improvement in rank comparisons with AAU data requires addressing the underlying concerns for faculty recruitment and retention in salaries that are less than competitive with the market and in some cases dramatically so.

## C. Comparisons with Peer Universities Using AAUP Survey Data

Table 5 compares 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) 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*.<sup>7</sup> 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, these two institutions are also included in the comparison.

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 (2010-2011). 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 2010-2011, the mean salary of full Professors at Harvard was 10.7% higher than at Penn (at \$175,100), but 3.2% lower at Northwestern than at Penn. Importantly, the reported data likely do not reflect extra-salary compensation and subsidies (e.g. housing allowances or subsidies) or differences in the cost of living. These factors might make comparison of absolute salaries across universities ambiguous. However, our analyses here focus on trends over time. The SCESF is not aware of differential trends in such matters over time that would undermine comparative analysis over time presented here.

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

7 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.

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.<sup>8</sup> Penn realized improvements relative to some competitors including Carnegie-Mellon, the University of Virginia, and the University of Minnesota, where the competitor salary disadvantages over time are clear. Between 2005-2006 and 2010-2011, Carnegie-Mellon moved from -17.4% to -20.7%, Virginia moved from -17.9% to -22.0%, and Minnesota from -26.4% to -29.6%. Nevertheless, seven of the universities used for comparison now rank above Penn and well above it in five cases (e.g. more than 5% above Penn). Harvard, Chicago, Stanford, Princeton, and Yale ranked above Penn in 2005-2006 and remain above it in 2010-2011. Additionally, Columbia was added to the group in 2007-2008 and has moved from ranking on par with Penn [-0.4%] to being well above it [9.3%]. In addition to Columbia, Chicago, Stanford, Princeton, and NYU have all gained salary advantage over time in this comparison period (viz. 2005-2006 to 2010-2011). The data in Table 5, like those in Table 4, reiterate from the SCESF Report last year extremely serious questions about trends in Penn's competitive advantage in recruiting and retaining Full Professors against the salaries offered by peer institutions.

The SCESF was careful to select universities similar to Penn on several criteria in order to make overall mean salary comparisons at the Full Professor rank. However, AAUP salary data do not appear to permit control for specific schools aggregated in the data provided by each university and in the number of Full Professors appointed in each school. These elements would, if available, enhance data analysis given that mean salary levels vary by school as do the number of professors appointed to the faculty of each school on which those means are based. Therefore, the relative standing of Penn mean salaries shown in Table 5 might be misleading in understanding what has occurred in particular schools or departments over time. Nonetheless, the general pattern in Penn's standing over time between 2005-2006 and 2010-2011 is, in and of itself, pronounced and significant. Penn is likely losing position relative to peers with which it competes for faculty. Arguably, loss of competitive advantage seen in comparisons with both AAUDE and AAUP data is deleterious to Penn's achieving excellence by limiting capacity to recruit and retain faculty and to maintain and elevate reputation among current and prospective faculty.

## IV. Penn Faculty Benefits

Last year's SCESF Report included a request for data on faculty benefits. This request was made with the acknowledgment that the SCESF Report for 1998-1999 was the last that addressed data on faculty benefits.<sup>9</sup> The Office of Institutional Research and Analysis provided the data in Table 5 Detail 2 in response to this request. Table 5 Detail 2 presents mean total compensation for Full Professors at Penn and a sample of 18 comparable research universities. These universities are the same represented in Table 5 and are reported in alphabetical order and not in rank order as in Table 5. The Penn academic base mean salaries are based on standing faculty in the rank of Professor and exclude faculty in the School of Medicine except basic scientists and all standing faculty in the Clinician Educator Track. Compensation employs data from the AAUP Faculty Compensation Survey that is conducted by AAUP and in which Penn participates annually.

The data in Table 5 Detail 2 show that, in 2005-2006, Penn ranked second behind Harvard in mean total compensation for Full Professors. At that time, Penn's mean total compensation was \$197,500 compared with Harvard's \$208,500. Princeton and NYU ranked third and fourth by comparison, following Penn by several thousand dollars. In the most recent year (2010-2010), Penn's rank had declined from second in the first year of this comparison to seventh. While Harvard continues to rank far above Penn (\$242,100 versus \$223,900), other universities have made significant strides and now rank above Penn. In descending order, Columbia, Chicago, NYU, Stanford and Princeton all now rank above Penn in mean total compensation at the level of Full Professor.

Like the data presented in Tables 4 and 5, the data in Table 5 Detail 2 represent a trend of decline over time vis-à-vis peer institutions. These are institutions with whom Penn competes for faculty and thus decline suggests a loss of competitive advantage that may have direct and indirect

8 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.

9 See <http://www.upenn.edu/almanac/v45/n32/econ-faculty.html>

influence on recruitment and retention of faculty. The SCESF is cautious about overstating any interpretation of data within these three (4, 5, and 5 Detail 2) tables. We acknowledge that Table 4 is limited by year to year changes in the composition of AAUDE comparison groups for schools and areas. Similarly, Tables 5 and 5 Detail 2 cannot illuminate, for example, issues within specific schools and departments. Nevertheless, the SCESF would be remiss not to underscore that our focus is trend over time and changes in relative rank over time. The data in Table 5 Detail 2 show Penn's loss of relative rank and the rise of institutions selected for comparison in the period 2005-2006 to 2010-2011. These data further corroborate the analysis of data in Tables 4 and 5, lending weight to the marked concern for Penn's competitive advantage in recruitment and retention and possible implications for faculty morale across the university.

## V. Penn Faculty Salaries: Internal Comparisons

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 and Practice and include only basic science faculty in the School of Medicine. Internal comparisons of Penn faculty salaries are somewhat complicated. As previous SCESF Reports highlight, significant variability in Penn faculty salaries is attributable to several recognized factors. These factors include 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. Despite these rather granular factors, SCESF remains concerned that existing salary variability may include some inequities. Some inequity such as salary setting based on incomplete or inaccurate information about merit or bias that could be involved in the process of deciding salary increments cannot be addressed by SCESF as they entail identification of individual or group inequity using individual faculty salaries other confidential or particularistic data. However, SCESF is committed to consistent review of issues in overall salary variability and to raise questions about possible overall inequities that may explain some degree of the observed variation. Such review and questioning aim toward further review and action by senior academic administrators (e.g. Department Chairs, Deans, and the Provost) with a view to correcting any identified and confirmed inequities.

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

Median salary increases are detailed 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). To reiterate from Section II, the salary increase guideline of 2.5% for FY 2011 was only 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). Deans within the schools have the discretionary power to allocate more or less of this pool 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 2.5% 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 2.5% of previous year salaries. Furthermore, the 2.5% 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.

The overall mean salary increase for all continuing faculty members for FY 2010-2011 was 3.8% (see Table 1), an increase over the previous year at 2.1%. The overall median salary increase for all continuing faculty members was 2.5% for FY 2010-2011. This still substantial mean salary increase was not distributed sufficiently widely to lift median salaries of all ranks in all schools and areas by at least 2.5%. This phenomenon may be attributed to differences in wealth, competitive pressures, and budget priorities among the various schools as permitted under RCM. In addition, extraordinary retention efforts may have pre-empted the guideline. Many ranks within schools and areas attained greater than guideline median sal-

ary increases, perhaps in some effort to compensate for the widespread absence of guideline or better increases in the previous year.

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

Full Professors (see Table 6) in eight of 14 schools and areas received median salary increases at guideline or above (e.g. equal to or greater than 2.5%). Those in Annenberg, Law, Nursing, Social Practice and Policy, and Wharton received median salary increases at 3.0% or more. Those in Dental Medicine, Design, Humanities—SAS, Natural Sciences—SAS, and Social Sciences—SAS received median increases below 2.5%. Full professors in Veterinary Medicine received no increase at all.

Associate Professors (see Table 7), for which we have only 10 reporting schools and areas, saw median salary increase for FY2011 at or above the 2.5% guideline in six cases. However, Humanities—SAS reported a median increase of 2.3%, Natural Sciences—SAS a median increase of 2.0%, and Veterinary Medicine no increase whatsoever.

Assistant Professors (see Table 8), for which we have only 12 reporting schools and areas, attained median salary increases at or above the guideline in seven cases. Mirroring the other ranks, those in Humanities—SAS saw a 2.2% median increase, Natural Science—SAS 2.3%, Social Policy and Practice 2.0%, and Social Sciences—SAS 2.3%. Here again, Veterinary Medicine Assistant Professors had no salary increase this year.

Importantly, the number of reporting schools and areas varies for each rank for two primary reasons. First, a rank may not exist in that particular school as with Associate Professor in the Law School. Second, the number of faculty within a rank may be so small as to make identification of individual data possible and thus the numbers are not reported.

### 2. First Quartile Salary Increases across Ranks & 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 Average CPI of 3.6% and the Philadelphia CPI of 2.8%. The comparison for this year's report's data shows that at each rank, no school or area had a 25th percentile salary increase that met or exceeded the Philadelphia CPI change much less the US City Average CPI. The Wharton School came with in 0.1 and 0.2 in the Assistant and Associate ranks. No school or area came close to meeting the US City Average CPI growth. These findings likely represent a real wage loss for at least the bottom quarter of the faculty in all of these schools/areas.

### 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.<sup>10</sup> The second-to-last column gives raw ratios of these values relative to the values for Assistant Professors. These ratios suggest that, in FY 2011, mean salaries were 69% higher for Full Professors than for Assistant Professors and 7% higher for Associate Professors than for Assistant Professors. Median salaries were 85% higher for Full than for Assistant Professors, and 15% higher for Associate than for Assistant Professors.

Between 2006-2007 and 2010-2011, the ratio of median salaries has decreased slightly for Full Professors to Assistant Professors (from 1.90 to 1.85) and for Associate Professors to Assistant Professors (from 1.22 to 1.15). 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, a considerably larger difference between Assistant and Associate Professor mean salaries might be expected. However, 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. Similarly, to choose the other pos-

<sup>10</sup> 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.

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sibility, if a relatively high-paying School has a considerably higher percentage of Assistant Professors than other schools, that difference could increase the observed mean salary for Assistant Professors. A more meaningful comparison of variation in faculty salaries by rank is achieved 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.<sup>11</sup> Thus, Table 9 also gives the weighted ratios. Using the weighted ratios generally increases the spread in salary levels by rank, though this year that is only partially true. The weighted ratios show that in FY 2011, mean (median) salaries of Full Professors were 80% (81%) higher than Assistant Professors and mean (median) salaries of Associate Professors were 21% (23%) 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 and 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 2011 or recent trends.

## D. Variability of Salary Level by Rank with Interquartile Data

Variability in salary level by rank may also be investigated with more distribution-sensitive statistics than averages. Three facets of data analyzing variability 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, the IQR is divided 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").<sup>12</sup> 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 2011, the ratio of the IQR to the median was 0.46 for Full Professors, 0.31 for Associate Professors, and 0.68 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 of 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 is the rise in the past five years of the IQR to median ratio, particularly for Full Professors, suggesting that variability in payment levels is growing (from 0.42 to 0.46.) For Full professors, in 2006-2007 the gap between the 25th and 75th percentile was 59,900; in 2011 that gap had grown to 74,131 (a 23.8% rise.) The median salary had only risen 12.8% over the same period. For Associate Professors the variability change was smaller and not consistent but also showed an increasing gap. (The IQR grew 16.3% while the median grew on 9.3 %.) The Assistant Professor variability was much less stable in trend than for the other ranks and thus the 2010-2011 increase in variability is difficult to interpret. However there does appear to be clear evidence for increasing spread in faculty salaries. This matter is of some concern and warrants further exploration.

## E. Variability by Gender

In response to recommendations made in prior years, this SCESF Report includes two tables describing gender differences in faculty salaries. Table 11 provides the percentage increases in salaries for faculty continu-

<sup>11</sup> Exceptions are made for schools/areas in which there are no Assistant Professors or only an extremely small number.

<sup>12</sup> 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).

ing in rank by rank and gender for the first, second, and third quartiles for FY 2010.<sup>13</sup> The figures are generally very close and in some cases identical. Only in one case is there a meaningful difference, for Assistant Professors at the median (3.0% for men and 2.5% for women).

Table 12 reports the unweighted and weighted 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 Table 11. The weighted estimates account for difference in gender distributions in schools and areas of the University and thus may be most informative. Table 12, in the weighted analyses, shows that male Full Professors are consistently better paid than female Full Professors (e.g. 4.8% higher mean in 2010-2011), however the advantage appears to be declining (from 6.9% in 2006-2007). The male advantage for Associate Professors is less consistent. It is always present in the means but mostly reversed for median comparisons, and also appears to be declining. For Assistant Professors, the differences between the mean salaries by gender are small. However, there appears to be a small increase in the gap by 2009-2011 compared to previous years. The SCSEF recognizes that neither the gap closing nor gap opening trends are definitive without additional information about years in rank and departmental-level weighting and other relevant information. Importantly, the trend for Full Professors shows some promise for continued improvements. We look forward to a subsequent fully elaborated analysis of gender equity among faculty.

## VI. Conclusions

### A. Economic Status of the Faculty

#### 1. External Competitiveness

*Comparisons of Penn faculty salary percentage increases with percentage increases in the CPI:* The median is the appropriate average to consider as a summary statistic for the economic status of the faculty overall. The all-ranks median increase was below the Philadelphia CPI increase for FY 2011 and markedly below growth in US City Average CPI. This failure to meet local CPI growth was true on a rank-by-rank basis as well. As was true last year, FY 2011 was again a year of overall real wage decline for many faculty. This trend is frankly untenable and requires due consideration by the faculty and administration.

*Comparisons with other universities:* Salary comparisons for Full Professors at Penn with AAUDE and AAUP data in this year's report raise and emphasize concerns that have been noted in prior SCESF Reports. Recession and economic downturn notwithstanding, Penn's competitive advantage with current and prospective faculty vis-à-vis competitors appears to be declining in both salary and total compensation. Although the relative decline in salary was not as sharp this year as for the year past, residual effects of prior years and a continued downward trend remain. In many cases, Penn faculty enjoy important advantages when compared with faculty at many other universities nationwide. Nevertheless, instances of lost rank in relation to specifically selected peers and the broader range of AAU institutions is extremely worrisome. There are comparatively few instances of improved position and in those cases the improvements are generally small.

The five-year comparison with the larger AAUDE data shows a persistent pattern of lost ground and diminished rank. Penn lost ground between 2006 and 2010 all ranks and in many schools and areas, in some cases dramatically. Substantial losses for Full Professors (5% or greater change in percentile rank) exist in Design [-5%], Graduate Education [-6%], Humanities-SAS [-7%], Natural Sciences-SAS [-5%], Social Policy and Practice [-7%], and Veterinary Medicine [-14%]. Substantial declines are seen in the rank of Associate Professors for Graduate Education [-10%], Humanities-SAS [-10%], Medicine-Basic Sciences [-8%], Natural Sciences-SAS [-8%], Nursing [-6%], and Veterinary Medicine [-70%]). While Assistant Professor salaries were somewhat more stable over time, there are substantial losses in Natural Science-SAS [-12%] and Veterinary Medicine [-35%]. Changes in standing do vary by school and area within school. The situation in Veterinary Medicine continues to appear dire, likely warranting ad hoc intervention. The scale of the situation in the three SAS areas is not as extreme as in Veterinary Medicine. Nonetheless, the problems in SAS are broad in scope. Their persistence, given the essential role of SAS in the University, is deeply concerning.

<sup>13</sup> 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.

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 eighth in rank order for 2010-2011, as it was for the prior year two years. Of the other Ivies in the comparison group, only Harvard has not increased its relative lead over Penn. At 12.5% ahead of Penn in 2005 and 10.7% in 2010, Harvard has retained its position ahead of Penn and other competitors. However, peers like Chicago and Stanford are increasing their lead over Penn. This pattern is clearly echoed in data presenting mean total compensation for Full Professors at Penn and the other 18 peer institutions selected for comparison. Whereas Penn ranked second at the beginning of the comparison period in 2005-2006, it now ranks seventh behind Harvard, Columbia, Chicago, NYU, Stanford, and Princeton. The descending pattern in mean salary and compensation between 2006 and 2010 reveals a robust trend that should garner the attention of university administration.<sup>14</sup> Indications that the University’s comparative position is eroding over time are ever more worrisome as they persist. This SCESF Report marks the third year in which this fundamental point has been emphasized, adding greater gravity to the concern expressed this year.

## 2. Internal Variability

Distribution of faculty salary and resources accorded them in annual increases notably vary 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.) Of more concern, there is evidence for increasing variability of salaries, particularly among Full Professors; while the median full professor salary went up about 13% between 2006-2010; the gap between the 75th and 25th percentile Full Professor went up nearly 24%. Some level of variability in average faculty salaries among schools and 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, and the increase in these differences, are warranted by factors such as competitive pressures.

Salary increases by gender within ranks (Table 11) tell two contrasting stories. Even weighted by male/female distributions across Schools/areas, men have higher mean salaries, particularly among Full Professors (4.8% higher in 2010). On the other hand there is a pattern of reduced gaps over time (from 6.9% higher in 2006). While improving slowly, this trend over time warrants continued scrutiny and action.

## B. Conditions of Concern

### 1. External Competitiveness

Although Penn faculty salaries and compensation 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 AAUDE, Penn appears to be losing rank position in this group of universities. While there are some important gains in position, the schools and areas in which there are substantial losses in rank are most concerning. SCESF recommends that salary policies and trends within Full Professor rank in Graduate Education, Humanities-SAS, Natural Sciences-SAS, Social Policy and Practice, and Veterinary Medicine be monitored. Similarly, policies and trends in salary for Associate Professors in Graduate Education, Humanities-SAS, Medicine-Basic Sciences, Natural Sciences-SAS, Nursing, and Veterinary Medicine, and for Assistant Professors in Natural Science-SAS and Veterinary Medicine should be followed. Overarching concern for the School of Veterinary Medicine and for the School of Arts and Sciences, especially the Natural Sciences and the Humanities, is profound.

- Compared with mean salaries for faculty at other AAU institutions, mean salaries at Penn again appear particularly low for Associate Professors in the School of Veterinary Medicine. This repeated finding underscores the question of whether such salaries are likely to attract and to keep faculty of the caliber necessary for Penn’s aspirations to excellence as a University and within Veterinary Medicine.

- Compared with mean salaries with 18 other leading research universities, mean salaries and total compensation for Full Professors at Penn became somewhat less competitive between 2005-06 and 2010-11. The

salary advantage of Full Professors at Harvard over Penn in nominal dollars is constant and perhaps declining slightly. Several peers like Chicago and Stanford are increasing their advantage and others like NYU have reversed their prior positions and now have a salary advantage over Penn. Penn’s positions at rank eight for salary and rank seven for total compensation are not impressive and represent weakened standing over time.

## 2. Internal Equity

The SCESF remains concerned about some variability in individual faculty salaries may entail more than an individually based inequity. Overall, the faculty received increases that on average were below the Philadelphia CPI and US City Average CPI growth. In addition, gender inequity—while declining somewhat in ranks over time—persists at a moderate level. This persistent inequity is unacceptable in a University committed to gender equity.

## VII. SCESF Communication with Provost’s Office

### A. SCESF Requests in Preparation of the SCESF Report & Responses

The Provost’s Office was broadly responsive to the SCESF’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 in delivering data and responding to requests. 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 for Faculty, before the parameters for salary increases for the coming year are set.

*The Provost’s Office is committed to the provision of accurate data to SCESF in a timely fashion, and we will continue to work with SCESF and IR&A to ensure consultation during the fall term, as well as comparability and reliability of information.*

### B. SCESF Recommendations and Questions for the Administration for 2011-2012

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 in the comparison with AAUDE data in a number of schools and areas (e.g., compare first and last columns in Table 4 on either the traditional or the more robust measure 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 President and Provost remain committed to enhancing Penn’s ability to offer highly competitive faculty salaries, while recognizing that some of our peers enjoy greater financial resources than Penn. 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 actions that may be justified and financially feasible.*

b) SCESF notes that there is room for improvement for faculty salaries in many of the rank by school and area comparisons (Table 4). Moreover, the gaps in mean salaries between full Professors at Penn and full Professors at some peer institutions have increased over time (see Table 5). SCESF questions whether the University can retain and attract the highest-quality faculty members unless faculty salaries improve markedly in relation to peer institutions. Our competitors seem to perceive an active market for university faculty. Given the quality and visibility of the Penn faculty overall, current faculty may easily be swayed with this market perspective to consider other options. Prospective faculty too may be drawn to competitors. Continued use of aggressive responses to individual retention problems are not a viable response to this persistent pattern of declining external competitiveness, especially when coupled with internal inequity. This larger problem mandates a thorough university-wide response.

*We note that the vast majority of Penn’s salaries for all ranks and*

<sup>14</sup> Again, the interested reader may wish to review the parallel discussion in last year’s Report. See [www.upenn.edu/almanac/volumes/v57/n23/econstatus.html](http://www.upenn.edu/almanac/volumes/v57/n23/econstatus.html)

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*schools remain within the top ten institutions of their cohort (32 of 39 comparisons). Comparisons over time for particular ranks and schools on the basis of AAUDE data are problematic because of changing numbers and identities of participating schools and shifting composition of the disciplinary categories. In addition, the reported mean salaries do not take into account adjustments for relative costs of living, which are significantly higher in many of the cities where our peer universities are located. We will continue to closely monitor the competitive standing of Penn salaries.*

c) The SCESF places priority on regaining Penn's competitive level in the fields where it has been declining or lost. Nevertheless, the SCESF recommends that priority and due consideration also be given to recognizing and rewarding distinguished performance with salary increases for those faculty who choose not to seek, or use, attractive offers of external appointment to negotiate salary increases. This approach is a matter of equity, morale, and investment in a secure future for the University. As stated in the SCESF Report last year, 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 SCESF 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.

*Salary increases are awarded within Schools on the basis of merit, and "distinguished performance" constitutes merit. The Provost will continue to discuss with School Deans issues posed by market competition, retention, and merit within school faculties. School deans are aware of equity issues and regularly respond to them. Budget constraint issues operate at all levels of the University.*

## 2. Salary Equity

Inequity among individual faculty salaries by rank within departments and schools 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 Philadelphia CPI. With 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. We also recognize that there may be periods of financial stringency as in the FY2009-2010. Nonetheless, we continue to fear that extended declines in real wages and loss of salary against CPI will have marked adverse effects on faculty morale and University function. *Extended declines in real terms of faculty compensation are not in the interest of the University or the Schools. The pool of funds available for faculty salary increases is awarded, however, according to merit, not as a cost of living adjustment. Since the financing of salary increases is a function of School budgets, there will continue to be variability in salary increases in different parts of the University.*

b) As noted in the SCESF Report last year, 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 wishes continued discussion with the Provost's Office on appropriate frames for measurement.

*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 and areas. The Committee understands that both school and 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 continue to receive and analyze this data going forward.

*Variability in median-level faculty salaries across Penn's Schools is, in part, a function of differences in salary levels among professional disciplines, as well as School budgets. The Provost's Office remains committed to supplying school-level information to SCESF so that it can continue to monitor the issue of equity among Penn's twelve schools.*

## 3. Gender Equity

Data in Table 12 show that average salaries are lower for women than for men in all faculty ranks, even after weighting the data to reflect differences in the gender distribution of faculty by school and area. Persistent gender inequity in faculty salaries is troubling.

### SCESF Recommendation

For two years, the SCESF has 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. This analysis is incommensurate with the unweighted and weighted means and medians presented in Table 12. The Provost has commented that the issue would require further study. The SCESF requests a briefing on such further study as has taken place and concrete plans for the future.

*The Provost's Office is committed to the principle of gender equity in salaries. We are pleased to see that differences between men and women's median base salaries are small and declining over time. Last year in response to the SCESF recommendation, we undertook a systematic investigation of gender differences in salaries in each of the Penn schools to identify the origins of individual differences. Differences in years, in rank and other legitimate sources of salary variability accounted for the small, observed gender gaps in mean and median salaries. Going forward, we would be happy to discuss gender salary equity, the data in Table 12, and other information bearing in these issues with the Committee.*

## 4. Faculty Benefits

As faculty benefits at Penn compared with peer institutions have not been thoroughly examined since the 1998-99 report, the SCESF appreciates the provision of data for Table 5 Detail 2 and anticipates continued productive analysis of these data over time in complement to comparative mean salary data. Going forward, the SCESF continues to believe benefits should be comprehensively reviewed every five years to ensure competitiveness.

### SCESF Recommendations

a) The SCESF appreciates the provision of data regarding mean total compensation this year and in the future. Analysis of these data offers a basis for some judgment of faculty benefits on an annual basis. The Provost agrees that the provision of data on total compensation is a useful addition to the annual report on faculty salaries and will provide these data on a yearly basis.

b) The SCESF recognizes that examination of faculty total compensation incompletely analyzes faculty benefits within the university and across ranks. Sabbatical leave is among important benefits not addressed in current data. Consequently, we request that, in addition to data on mean total compensation, specific information regarding sabbatical leave within the university, across schools and compared to peers be provided where possible beginning next year.

*The question of how the sabbatical leave benefit should be factored into the benefits package is complex. We agree to gather data on sabbatical leaves and to discuss how this data might be provided.*

## VIII. Members of the 2011-2012 Senate Committee on the Economic Status of the Faculty

William Dailey, SAS/Chemistry  
Sarah Kagan, Nursing, *Chair*  
Andrea Liu, SAS/Physics & Astronomy  
Janice Madden, SAS/Sociology  
Tim Rebbeck, SOM/Biostatistics & Epidemiology  
Petra Todd, SAS/Economics

### Ex officio

Senate Past Chair, Robert Hornik, Annenberg  
Senate Chair Elect, Susan Margulies, SEAS  
Senate Chair, Camille Charles, SAS/Sociology

The Committee would like to explicitly acknowledge the essential and 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 2010-2011
Full Professor	Mean	3.7%
	Median	2.5%
Associate Professor	Mean	4.4%
	Median	2.5%
Assistant Professor	Mean	3.4%
	Median	2.7%
All Three Ranks	Mean	3.8%
	Median	2.5%
U.S. City Average CPI Growth	Mean	3.6%
Phil. CPI Growth	Mean	2.8%
Budget Guidelines	Mean	2.5%

**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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

FYs 2010-2011 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2010 to June 2011.

**Table 2**  
**Percentage of Continuing Penn Standing Faculty Members Awarded Percentage Salary Increases Exceeding the Percentage Growth 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 2010 to 2011
Annenberg	62.5%
Dental Medicine	24.0%
Design	46.7%
Engineering & Applied Science	48.5%
Graduate Education	42.4%
Humanities (SAS)	29.6%
Law	88.9%
Medicine-Basic Science	43.2%
Natural Science (SAS)	26.0%
Nursing	65.6%
Social Policy & Practice	47.1%
Social Science (SAS)	41.5%
Veterinary Medicine	10.5%
Wharton	65.7%
All Schools/Areas	43.4%
U.S. City Average CPI Growth	3.6%
Phil. CPI Growth	2.8%
Budget Guidelines	2.5%

**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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

FYs 2010-2011 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2010 to June 2011.

**Table 3**  
**Percentage of Continuing Penn Full Professors Awarded Percentage Salary Increases Exceeding the Percentage Growth 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 2010 to 2011
Annenberg	70.0%
Dental Medicine	23.5%
Design	33.3%
Engineering & Applied Science	44.1%
Graduate Education	38.9%
Humanities (A&S)	30.0%
Law	90.0%
Medicine-Basic Science	42.7%
Natural Science (A&S)	21.7%
Nursing	63.6%
Social Policy & Practice	77.8%
Social Science (A&S)	41.8%
Veterinary Medicine	11.4%
Wharton	61.9%
All Schools/Areas	42.6%
U.S. City Average CPI Growth	3.6%
Phil. CPI Growth	2.8%
Budget Guidelines	2.5%

**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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

FYs 2010-2011 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2010 to June 2011.

*Tables continue on next page*

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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	Fall 2010
<b>Full Professor</b>						
Annenberg	2/35	2/36	1/38	1/38	1/40	1/41
Dental Medicine	6/34	8/35	10/38	11/43	2/44	9/45
Design	7/51	3/53	9/53	8/51	5/51	5/55
Engineering & Applied Science	14/55	14/56	14/56	14/53	11/53	13/57
Graduate Education	3/43	4/45	4/48	4/45	4/44	6/47
Humanities (SAS)	5/55	5/56	10/56	8/53	9/54	9/58
Law	6/36	7/36	10/41	7/39	7/37	8/40
Medicine-Basic Science	3/35	3/37	3/37	5/53	6/54	6/58
Natural Science (SAS)	12/56	11/57	15/57	13/54	15/54	14/58
Nursing	2/24	2/24	2/26	2/25	2/24	1/17
Social Policy & Practice	4/22	6/24	6/25	5/23	7/23	8/25
Social Science (SAS)	9/55	9/56	9/57	9/54	8/54	9/57
Veterinary Medicine	1/14	1/13	4/17	3/14	3/13	3/14
Wharton-Business & Management	2/52	3/53	7/53	5/50	4/51	5/55
Wharton-Public Policy	3/19	3/18	--	15/50	15/52	-
Wharton-Statistics	1/34	1/35	1/34	1/34	1/32	1/36
<b>Associate Professor</b>						
Annenberg	--	--	--	--	--	-
Dental Medicine	--	--	8/35	14/41	9/42	9/43
Design	7/50	1/51	7/53	6/51	3/51	3/55
Engineering & Applied Science	9/55	7/55	10/56	9/53	7/53	8/57
Graduate Education	2/46	3/46	4/48	5/44	4/44	8/48
Humanities (SAS)	8/55	6/56	10/56	6/53	12/54	12/57
Law	n/a	n/a	n/a	n/a	--	-
Medicine-Basic Science	4/34	2/36	3/37	5/53	7/54	8/58
Natural Science (SAS)	11/56	9/57	11/57	11/54	14/54	14/58
Nursing	3/26	3/26	5/26	7/24	6/23	3/17
Social Policy & Practice	5/22	5/24	--	3/24	--	-
Social Science (SAS)	11/55	9/56	11/57	11/54	8/54	7/57
Veterinary Medicine	2/14	1/13	3/17	8/14	9/13	11/14
Wharton-Business & Management	1/52	1/53	2/53	1/50	2/50	2/54
Wharton-Public Policy	--	--	--	--	--	-
Wharton-Statistics	--	--	--	2/27	--	3/31
<b>Assistant Professor</b>						
Annenberg	--	--	--	--	--	-
Dental Medicine	--	4/34	11/36	8/42	8/43	-
Design	4/49	--	5/52	7/49	4/50	6/55
Engineering & Applied Science	11/55	6/56	13/56	10/53	5/53	6/57
Graduate Education	7/43	6/45	6/47	6/45	6/43	7/47
Humanities (SAS)	13/55	14/56	19/56	17/53	14/54	14/58
Law	5/28	--	--	--	6/25	5/25
Medicine-Basic Science	5/34	9/38	6/37	7/53	10/54	8/58
Natural Science (SAS)	7/56	8/57	18/57	15/54	15/54	15/58
Nursing	6/27	4/26	5/26	3/24	3/23	2/17
Social Policy & Practice	--	--	--	6/24	6/25	6/25
Social Science(SAS)	8/55	15/56	10/57	13/54	11/54	8/57
Veterinary Medicine	1/14	1/13	1/17	6/14	5/13	6/14
Wharton-Business & Management	7/52	3/53	6/53	10/50	5/50	4/54
Wharton-Public Policy	--	--	--	--	1/51	-
Wharton-Statistics	--	--	1/33	1/33	--	-

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 2010-2011**

	Full Professor Salaries: Percentage Differences*					
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Harvard	12.5%	13.4%	11.7%	13.7%	12.4%	10.7%
Columbia	N/A	N/A	-0.4%	3.4%	10.9%	9.3%
Chicago	3.5%	3.8%	4.4%	6.0%	8.2%	8.7%
Stanford	4.2%	0.7%	6.0%	7.4%	6.6%	7.6%
Princeton	4.6%	4.6%	5.2%	6.4%	6.4%	6.2%
Yale	0.9%	0.7%	1.1%	3.1%	2.4%	1.1%
NYU	-3.9%	-4.5%	-0.5%	0.8%	0.9%	0.5%
<b>Pennsylvania</b>	<b>\$149.9K</b>	<b>\$156.5K</b>	<b>163.3K</b>	<b>169.4K</b>	<b>170.1K</b>	<b>175.1K</b>
Northwestern	-6.1%	-5.9%	-6.3%	-4.5%	-2.2%	-3.2%
MIT	-6.4%	-6.8%	-7.7%	-5.4%	-5.3%	-5.3%
Duke	-9.0%	-9.3%	-7.0%	-4.8%	-5.5%	-6.7%
UCLA	-14.3%	-14.9%	N/A	-14.7%	-13.0%	-12.2%
UC Berkeley	-15.8%	-16.1%	N/A	-15.3%	-14.3%	-14.8%
Michigan	-16.2%	-16.7%	-19.1%	-16.1%	-15.3%	-16.1%
N.C. (Chapel Hill)	-23.1%	-19.0%	-17.9%	-15.8%	-15.9%	-18.2%
Carnegie-Mellon	-17.4%	-18.8%	-23.5%	-19.4%	-19.1%	-20.7%
Texas (Austin)	-22.8%	-22.6%	-29.6%	-21.9%	-21.6%	-22.0%
Virginia	-17.9%	-18.2%	-23.1%	-21.3%	-20.8%	-22.0%
MN (Twin Cities)	-26.4%	-25.5%	-34.6%	-24.8%	-26.6%	-29.6%

**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 2010-2011. 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 5, detail 1**

**Mean academic base salary levels of full professors at a sample of comparable research universities for Academic Years 2005-2006 through 2010-2011**

	Full Professor Salaries*					
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Carnegie-Mellon	123.8	127.0	132.2	136.5	137.6	138.9
Chicago	155.1	162.5	170.8	179.5	184.1	190.4
Columbia	N/A	N/A	162.5	175.2	188.6	191.4
Duke	136.4	142.0	152.6	161.2	160.8	163.4
Harvard	168.7	177.4	184.8	192.6	191.2	193.8
Michigan	125.6	130.4	137.0	142.1	144.0	146.9
MIT	140.3	145.9	151.6	160.3	161.0	165.8
MN (Twin Cities)	110.3	116.6	121.3	127.4	124.8	123.2
N.C. (Chapel Hill)	115.3	126.8	138.5	142.7	143.0	143.3
Northwestern	140.8	147.2	153.6	161.8	166.3	169.5
NYU	144.0	149.5	162.4	170.7	171.7	175.9
<b>Pennsylvania</b>	<b>149.9</b>	<b>156.5</b>	<b>163.3</b>	<b>169.4</b>	<b>170.1</b>	<b>175.1</b>
Princeton	156.8	163.7	172.2	180.3	181.0	186.0
Stanford	156.2	164.3	173.7	181.9	181.4	188.4
Texas (Austin)	115.7	121.2	126.0	132.3	133.3	136.5
UC Berkeley	126.2	131.3	N/A	143.5	145.8	149.1
UCLA	128.4	133.2	N/A	144.5	148.0	153.7
Virginia	123.1	128.0	132.7	133.4	134.7	136.5
Yale	151.2	157.6	165.1	174.7	174.1	177.1

**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 Alphabetically

**Table 5, detail 2**

**Mean total compensation levels of full professors at a sample of comparable research universities for Academic Years 2005-2006 through 2010-2011**

	Full Professor Total Compensation*					
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Carnegie-Mellon	153.4	156.8	164.9	170.2	171.5	172.2
Chicago	185.3	195.8	205.6	216.9	225.0	233.4
Columbia	N/A	N/A	196.7	212.6	221.8	239.1
Duke	170.6	178.1	188.3	198.7	199.9	202.6
Harvard	208.5	218.5	227.2	238.1	239.9	242.1
Michigan	152.3	157.6	165.7	171.8	175.6	179.4
MIT	174.5	182.1	191.3	198.0	200.0	206.0
MN (Twin Cities)	143.3	152.7	154.3	167.2	165.3	164.5
NC (Chapel Hill)	138.3	152.7	167.5	172.6	173.2	175.4
Northwestern	171.8	186.8	195.1	205.1	210.7	214.7
NYU	190.8	198.1	215.1	226.1	227.5	233.1
Pennsylvania	197.5	208.5	210.3	219.6	215.2	223.9
Princeton	191.2	198.9	209.6	219.1	220.8	228.0
Stanford	188.2	203.8	212.6	223.3	223.6	231.0
Texas (Austin)	137.2	143.5	149.3	156.9	158.9	163.5
UC Berkeley	163.4	170.4	N/A	188.5	192.4	197.3
UCLA	166.2	172.8	N/A	189.8	195.2	203.0
Virginia	152.1	157.9	163.4	164.3	166.8	168.1
Yale	183.1	190.3	199.0	210.4	211.3	214.5

**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 Alphabetically

**Table 6**

**Full Professors: Median Academic Base Salary Percentage Increases of Faculty Continuing in Rank who were Penn Full Professors for FY 2011, 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 2010-2011		
	Q1	Md.	Q3
All Schools	2.0%	2.5%	3.4%
Annenberg	2.3%	3.3%	4.0%
Dental Medicine	1.0%	1.1%	1.5%
Design	1.7%	2.1%	3.0%
Engineering & Applied Science	2.0%	2.5%	3.5%
Graduate Education	2.6%	2.6%	2.8%
Humanities (SAS)	2.0%	2.2%	3.1%
Law	3.1%	3.4%	4.1%
Medicine-Basic Science	2.4%	2.5%	3.1%
Natural Science (SAS)	2.0%	2.2%	2.7%
Nursing	2.5%	3.0%	4.5%
Social Policy & Practice	-	3.0%	-
Social Science (SAS)	2.0%	2.3%	3.1%
Veterinary Medicine	0.0%	0.0%	0.0%
Wharton	2.3%	3.0%	4.2%
Budget Guidelines		2.5%	

**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 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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), 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/area 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 five or more. The quartile increase are reported only if the number of faculty members is nine or more.

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# SENATE Economic Status of the Faculty

Table 7

Associate Professors: Median Academic Base Salary Percentage Increases of Faculty Continuing in Rank who were Penn Associate Professors for FY 2011, 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 2010-2011		
	Q1	Md.	Q3
All Schools	2.0%	2.5%	3.1%
Annenberg	-	-	-
Dental Medicine	-	-	-
Design	-	3.3%	-
Engineering & Applied Science	2.5%	2.5%	3.0%
Graduate Education	1.8%	2.7%	3.0%
Humanities (A&S)	2.0%	2.3%	3.0%
Law	n/a	n/a	n/a
Medicine-Basic Science	2.0%	2.5%	3.0%
Natural Science (A&S)	1.8%	2.0%	2.1%
Nursing	2.5%	3.0%	3.5%
Social Policy & Practice	-	-	-
Social Science (A&S)	2.0%	2.2%	3.5%
Veterinary Medicine	0.0%	0.0%	0.0%
Wharton	2.6%	3.0%	4.4%
Budget Guidelines		2.5%	

**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 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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), 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 five or more. The quartile increase are reported only if the number of faculty members is nine or more.

Table 8

Assistant Professors: Median Academic Base Salary Percentage Increases of Faculty Continuing in Rank who were Penn Assistant Professors for FY 2011, 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 2010-2011		
	Q1	Md.	Q3
All Schools	2.1%	2.7%	3.6%
Annenberg	-	-	-
Dental Medicine	-	-	-
Design	2.5%	3.0%	4.3%
Engineering & Applied Science	2.5%	3.5%	3.5%
Graduate Education	-	3.0%	-
Humanities (A&S)	2.1%	2.2%	2.6%
Law	-	4.0%	-
Medicine-Basic Science	2.5%	3.2%	5.0%
Natural Science (A&S)	2.0%	2.3%	3.1%
Nursing	-	3.5%	-
Social Policy & Practice	-	2.0%	-
Social Science (A&S)	2.0%	2.3%	3.2%
Veterinary Medicine	0.0%	0.0%	0.0%
Wharton	2.7%	3.8%	5.1%
Budget Guidelines		2.5%	

**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 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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), 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 five or more. The quartile increase are reported only if the number of faculty members is nine or more.

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**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
Full Professor	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	\$172,615	1.78	1.85
		Median	\$158,337	1.95	1.84
2010-2011	Mean	\$177,139	1.69	1.81	
	Median	\$161,270	1.85	1.80	
Associate Professor	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	\$110,058	1.13	1.24
		Median	\$99,550	1.23	1.22
2010-2011	Mean	\$112,139	1.07	1.23	
	Median	\$100,474	1.15	1.21	
Assistant Professor	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
2010-2011	Mean	\$104,693	1.00	1.00	
	Median	\$87,105	1.00	1.00	

**Notes:** Mean academic base salary levels are based on all Penn standing faculty members who continued in rank in FY 2011 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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), 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*

# SENATE Economic Status of the Faculty

**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
Full Professor	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
	2010-2011	\$135,000	\$161,270	\$209,131	\$74,131	0.46	14
Associate Professor	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
	2010-2011	\$86,613	\$100,474	\$117,300	\$30,687	0.31	13
Assistant Professor	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
	2010-2011	\$76,000	\$87,105	\$135,000	\$59,000	0.68	14

**Notes:** Mean academic base salary levels are based on all Penn standing faculty members who continued in rank in FY 2011 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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), 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.

**Table 11**

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

Rank	Gender	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases by Year FYs 2010-2011		
		Q1	Md.	Q3
Full Professor	Men	2.0%	2.5%	3.4%
	Women	2.1%	2.6%	3.5%
Associate Professor	Men	2.0%	2.5%	3.1%
	Women	2.0%	2.5%	3.1%
Assistant Professor	Men	2.2%	3.0%	3.6%
	Women	2.1%	2.5%	3.6%

**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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

*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	Unweighted			Weighted			
			Women	Men	% Difference	Women	Men	% Difference	
Full Professor	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	\$175,440	8.6%	\$166,672	\$175,440	5.3%	
		Median	\$148,541	\$160,000	7.7%	\$165,669	\$170,459	2.9%	
	2010-2011	Mean	\$166,221	\$180,044	8.3%	\$171,544	\$179,772	4.8%	
		Median	\$152,030	\$163,900	7.8%	\$169,494	\$175,093	3.3%	
	Associate Professor	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	\$101,538	\$114,421	12.7%	\$111,580	\$114,421	2.5%	
		Median	\$92,925	\$102,750	10.6%	\$109,374	\$108,377	-0.9%	
2010-2011		Mean	\$103,011	\$116,923	13.5%	\$111,945	\$116,923	4.4%	
		Median	\$93,557	\$105,175	12.4%	\$111,297	\$110,787	-0.5%	
Assistant Professor		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%	
	2010-2011	Mean	\$98,764	\$108,534	9.9%	\$105,668	\$108,534	2.7%	
		Median	\$82,250	\$90,253	9.7%	\$102,623	\$104,670	2.0%	

**Notes:** Mean academic base salary levels are based on all Penn standing faculty members who continued in rank in FY 2011 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 from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice), faculty members who were on unpaid leave of absence, faculty who had chosen phased retirement, and Deans of all Schools.

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.