

# 2000-2001 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 on the current economic status of the faculty as based on salary data. The report is organized in terms of three broad concerns:

- The salary setting process at Penn: the sources of funds for faculty salaries and the 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, and sources of possible salary inequity that might occur within observed variability.

Major sections of this Report are devoted to each of these three topics, while Section VI is devoted to SCESF's overall conclusions about the economic status of the faculty.

In accordance with the procedures adopted by the Senate Executive Committee in Spring 1999, we do not offer recommendations here for development of faculty salary policy. Instead, we report in Section VII the present status of committee recommendations, as adopted by the Senate Executive Committee and submitted to the Provost in February 2001.

In performing its responsibilities, SCESF has been cognizant of Penn's current salary policy as stated by the President, Provost, and Executive Vice President (*Almanac*, April 17, 2001). Penn's guiding principle in salary planning is to pay faculty and staff (a) competitively, (b) in relationship to the markets for their services and prevailing economic conditions, (c) to acknowledge their contributions to the University, and (d) to help Penn remain a strong and financially viable institution.

In studying faculty salaries for this report, SCESF has benefitted greatly by access to detailed salary data (excluding, of course, individual faculty salaries) that have been provided by Penn's central administration and several schools. Our understanding both of Penn's competitiveness with peer institutions in faculty salary levels and of faculty salary variability within Penn has been enhanced by access to this information and by the assistance of those who produced it. The SCESF acknowledges this cooperation with appreciation.

## II. Resources for Faculty Salaries and Annual Increases

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

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

2. *Annual Salary Increases:* Faculty salary levels are normally increased annually by a process described below. Such salary increases are ordinarily based on academic merit. Some annual increases are also the result of promotion in rank, equity adjustments, and market adjustments.

All funds for faculty salaries come from each school's operating budget; there is no central fund earmarked specifically for faculty salaries. Most of each school's resources are raised in accordance with the principles of Penn's Responsibility Center Budgeting System (RCBS).<sup>1</sup> In addition, subvention is distributed to schools by Penn's central administration. Of these resources, each School makes a certain amount available for faculty salaries in three respects: (a) sustaining existing faculty appointments, (b) providing annual salary increases for continuing faculty members, and (c) creating salary funding for new faculty positions. In addition, schools must provide funds for employee benefits that approximate 30% of all such faculty salary expenditures.

Annual salary increase recommendations for continuing faculty members are made by Department Chairs (in schools with departments) and by Deans, with review and oversight by the Provost (see the statement of the "Salary Guidelines for 2001-2002" as published in *Almanac*, April 17, 2001). Penn's President, Provost, and Executive Vice President set an

upper limit on a "pool percentage" for salary increases. For FY 2002, schools were authorized to award, as salary increases, a pool of up to 3.5% of the FY 2002 salaries of continuing faculty members. The recommended salary increase range was 1% to 6%, with Deans being obligated to consult with the Provost about any increases outside this range. Deans could supplement the pool by 0.5% without the Provost's approval, and by more than this with the Provost's approval. To address possible inequity in faculty salaries, Deans were asked to "pay particular attention to any faculty who meet standards of merit but whose salaries for various reasons may have lagged over the years."

Within this framework of available funds, Department Chairs and Deans had the responsibility to recommend salary increases to the Provost for each continuing faculty member based on general merit, including recognition of outstanding teaching, scholarship, research, and service. In addition, the Provost reviews the Deans' faculty salary recommendations "to insure that raises on average reflect market conditions in each discipline."

## III. Penn Faculty Salaries: External Comparisons

Average Penn Faculty Salaries (i.e., academic year base salaries) are compared with three types of external indicators in the following sections: (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 level, and (c) average salaries of full professors for a sample of 17 public and private research universities selected as comparable to Penn from among those included in the "Annual Report on the Economic Status of the Profession" issued by the American Association of University Professors (AAUP). As a methodological note and unless otherwise specifically stated, all faculty salary information discussed in this report refers to the aggregated "academic year base salary" of individual faculty members whether salaries are paid from General Operating Funds and/or from Designated Funds.<sup>2</sup> In addition, all salary data reported exclude members of the Faculty of Medicine and all standing faculty members who are appointed as Clinician Educators from four other schools that have such positions (Dental Medicine, Veterinary Medicine, Nursing, and Social Work).

### A. Comparisons with Growth in the Consumer Price Index (CPI)

Faculty salary increases by rank, averaged for all schools except Medicine, for FY 1999, FY 2000, FY 2001, and compound cumulative for FY 1991-00, are shown in Table 1 in comparison with comparable data for the CPI (UScityaverage) and Penn budget guidelines. The nation has moved from a period of low inflation (2.0% for FY 1999) to one of mod-

Table 1

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

Group/Condition	Average	Fiscal Year			Compound Cumulative 1991-2000
		1999	2000	2001	
Full Professors	Median	3.5%	3.5%	3.8%	63.0%
	Mean	4.6%	5.0%	5.0%	
Associate Profs	Median	3.5%	3.9%	4.0%	64.7%
	Mean	5.2%	5.7%	6.0%	
Assistant Profs	Median	4.4%	5.0%	5.1%	69.2%
	Mean	6.0%	5.9%	6.6%	
All Three Ranks	Mean	5.0%	5.3%	5.9%	
UScityaverage CPI	—	2.0%	3.7%	NA	32.8%
Budget Guidelines	Mean	3.5%	3.5%	3.5%	44.5%

**Note:** Academic base salary percentage increases pertain to all Penn standing faculty members who continued in the same rank during the periods of time reported. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted or entered Penn employment during the periods of time reported.

<sup>1</sup> The 1998-1999 and 1999-2000 Reports of the Senate Committee on the Economic Status of the Faculty contain overviews of Penn's Responsibility Center Budgeting System.

<sup>2</sup> These terms are used in Penn's Responsibility Center Budgeting System. See the 1999 or 2000 report on the Economic Status of the Faculty for a description of this System.

erate inflation (3.7%) in FY 2000 (the most recent CPI data available). Two new and disquieting phenomena have occurred since last year. First (and in retrospect), the median salary increase for Penn full professors (over 60% of the Standing Faculty, excluding Clinician Educators) for FY 2000 was below the actual growth in the CPI for that year. Second, the median salary increase for full professors in FY 1999 and 2000 was equal to the budget guideline, whereas salary increases for associate and assistant professors generally exceed the guidelines. Fortunately, growth in the CPI moderated for the period July to December 2000 (0.7%). Furthermore, it should be noted that the mean salary increase for all three professorial ranks was 5.9% for FY 2001, an increase from 5.3% in FY 2000. This overall increase of 0.6% will partially offset the growth in the CPI of 1.7% from FY 1999 to FY 2000.

The most impressive salary increase percentages continue to be the cumulative compound salary increments over the 10-year period from FY 1991 through FY 2000 as also seen in Table 1. On the whole (all ranks combined), cumulative mean Penn faculty salary increments during this 10-year period were about twice the growth in the CPI (USCityaverage).

Furthermore, the mean compound cumulative growth in faculty salaries over the 10-year period exceeded Penn's budget guidelines by a considerable margin. These guidelines refer to the centrally-recommended salary pool percentage. What has happened is that many (perhaps all) of the Deans of Penn's schools have added considerable additional school resources to the recommended cumulative base pool for salary increases. If we estimate the compound cumulative increase over the 10-year period for all ranks combined to be 65% (the exact number is not available), the cumulative compound additional contribution of schools to the salary pool must have approximated 20% (65% minus the recommended budget guideline of 44.5%). Thus, it is apparent that both Penn's central and school administrations have made substantial joint efforts over the years to raise the average level of faculty salaries well in excess of the rate of inflation in the CPI during the past 10 years.<sup>3</sup>

**Table 2**

**Percentage of continuing Penn standing faculty members awarded percentage salary increases exceeding the percentage growth in the consumer price index (CPI) for Philadelphia for the twelve-month period ending before the beginning of each of three fiscal years**

Schools and Disciplinary Areas	Percentage of all Standing Faculty Members with Salary Increases Exceeding Growth in the CPI (Phil.)		
	FY 1999	FY 2000	FY 2001
Annenberg	93%	100%	93%
Dental Medicine	96%	95%	97%
Engineering & Applied Science	95%	94%	87%
Grad Education	97%	100%	93%
Grad Fine Arts	100%	84%	92%
Humanities (A&S)	96%	92%	93%
Law	97%	94%	94%
Natural Science (A&S)	88%	82%	84%
Nursing	88%	100%	89%
Social Science (A&S)	95%	85%	92%
Social Work	76%	87%	88%
Veterinary Medicine	89%	97%	98%
Wharton	94%	93%	94%
All Schools/Areas Combined	93%	91%	92%
Phil. CPI Growth (prior year)	1.14%	2.34%	2.60

**Note:** Academic base salary increases pertain to all Penn standing faculty members who continued in the same rank during the periods of time reported. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted or entered Penn employment during the periods of time reported.

<sup>3</sup> In making this observation, we realize that the centrally-recommended guideline of 3.5% for FY 2000 salary increases was stated as a maximum. Depending upon a school's financial condition, a lower pool percentage could be awarded.

The overall increases in faculty salary by rank in comparison with growth in the CPI, as seen in Table 1, are reported by school (including three disciplinary areas of SAS) in Table 2 for FY 1999, FY 2000 and FY 2001. A reasonably high percentage of faculty members in all of these schools/areas was awarded salary increments for FY 2001 that exceeded growth in the CPI (Phil.) for the twelve-month period ending June 2000. In comparison with prior years, however, none of the 13 schools/areas for FY 2001 awarded salary increases greater than CPI growth percentage to 100% of its standing faculty members.

Given the moderate level of inflation in Philadelphia (2.60%) and the fact that aggregate salary increases for the continuing professorate ranged from a low of 3.6% (Annenberg, which provided salary increases in excess of the most recent CPI growth percentage to 93% of its faculty members) to a high of 7.5% (Law, which provided salary increases in excess of the CPI percentage to 94% of its faculty members) for FY 2001, it is disappointing to see that 4 of the other 11 schools/areas awarded a salary increase below the CPI growth percentage to more than 10 percent of all continuing standing faculty members. In particular, over 10% of faculty members in Engineering, the Natural Sciences area of SAS, Nursing, and Social Work were awarded salary increases less than the CPI growth percentage. Under such conditions, there is always concern that the salary increases for some individual faculty members might have been inequitably low. It is also regrettable because an increase of less than the CPI growth percentage for an individual faculty member represents an effective reduction in the purchasing power of a salary.

Despite increases in the growth of the CPI during each year preceding the three-year period shown in Table 2 (the growth percent more than doubled from 1.14% in FY 1998 to 2.60% in FY 2000),<sup>4</sup> the percentage of faculty members receiving salary increases less than growth in the CPI (Phil.) has remained reasonably stable. Overall for FY 2001, 8% of faculty members received salary increases less than CPI growth, whereas this percentage was 9% for FY 2000 and only 7% for FY 1999.

**Table 3**

**Percentage of continuing Penn Full Professors awarded cumulative compounded percentage salary increases exceeding the cumulative compounded percentage growth in the consumer price index (CPI) for Philadelphia for three five-year periods**

Schools and Disciplinary Areas	Percentage of all Full Professors with Cumulative Salary Increases Exceeding Growth in the CPI (Phil.)		
	FYs 93-99	FYs 94-00	FYs 95-01
Annenberg	100%	100%	100%
Dental Medicine	100%	100%	100%
Engineering & Applied Science	93%	93%	93%
Grad Education	100%	100%	100%
Grad Fine Arts	100%	100%	100%
Humanities (A&S)	99%	97%	97%
Law	94%	95%	95%
Natural Science (A&S)	94%	94%	87%
Nursing	100%	100%	100%
Social Science (A&S)	87%	92%	93%
Social Work	100%	100%	100%
Veterinary Medicine	78%	86%	97%
Wharton	97%	97%	97%
All Schools/Areas Combined	94%	95%	94%
Cumulative Phil. CPI Growth	13.9%	14.4%	14.2%

**Note:** Cumulative compounded academic base salary increases pertain to all Penn full professors who continued as full professors during the periods of time reported. Excluded were all members of the Faculty of Medicine, and all Clinician Educators from four schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions.

<sup>4</sup> Information about growth in the CPI lags decisions about awarding salary increases by at least a year. For example, in deciding faculty raises in May and June of a particular fiscal year (e.g., FY 2000) for the following fiscal year (e.g., July 2000 through June 2001), information about the actual growth in the CPI during the fiscal year for which a salary increase is decided will not be available until about 18 months later.

By contrast (as shown in Table 3), the vast majority of full professors of all schools/areas received cumulative salary increments that exceeded growth in the CPI (Philadelphia) over the six fiscal years from 1995 through 2001. On this indicator, 9 of 13 schools/areas awarded cumulative salary increases exceeding growth in the CPI of 97% or more of its continuing full professors, while only one area was below 90% (the Natural Sciences area of SAS). The high percentages for most schools/areas indicate that only 6% of all full professors have fallen behind growth in the CPI over the most recent six year period (a percentage that has been stable during previous blocks of six fiscal years, also as seen in Table 3).

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

Nonetheless, if the salary increment pool available in each school/area is well in excess of CPI growth (as it has been for FY 2001), it is the judgment of SCESF that no individual faculty member should receive less than a cumulative salary increase equal to, or exceeding, growth in the CPI unless his or her performance has been unsatisfactory. It therefore seems possible that the cumulative salary increments received by some continuing full professors have been inequitably low, at least in part.

## B. Comparisons with Peer Universities Using MIT Survey Data

The best currently available salary data from other institutions of higher education are provided by the MIT annual survey of a group of approximately 24 private and public research universities (the sample size varies somewhat from year to year). Mean faculty salaries by rank (professor, associate professor, assistant professor) and discipline have been made available to the SCESF for analysis as of the Fall Semesters for the years 1996 through 2000. These salary data are reported for the following academic fields:

- Natural Sciences (at Penn, represented by SAS departments)
- Humanities and Social Sciences (at Penn, represented by SAS departments)
- Engineering (at Penn, represented by SEAS)
- Architecture (at Penn, represented by GSFA<sup>5</sup>)
- Management (at Penn, represented by Wharton)

Even though the MIT sample varies somewhat from year to year, comparisons reported here have been made *only* with universities that submitted salary data consistently during the five-year period examined. The MIT sample includes major private universities, as well as a number of highly regarded public research universities and one college. However, the specific sample of universities varies with the academic fields listed above. Each of these samples is described in turn below.

### 1. The MIT Sample of Universities

*Comparison Sample for Natural Sciences, Social Sciences, and Humanities:* The MIT sample for academic disciplines in these areas includes 24 institutions: the California Institute of Technology, Carnegie-Mellon, Columbia, Cornell, Georgia Institute of Technology, Harvard, Massachusetts Institute of Technology, Princeton, Purdue, Rice, Stanford, California (Berkeley), California (Los Angeles), California (San Diego), California (Santa Barbara), Illinois, Michigan, North Carolina, Pennsylvania, Rochester, Texas, Williams College, Wisconsin (Madison), and Yale. These universities are, to a large extent, comparable to Penn. Although one small college (Williams) is included in the sample, other institutions are large research universities. The sample would be improved by the participation of the University of Chicago. There is one dimension on which the sample may not be completely comparable to Penn: half of the institutions are state universities. Moreover, four of the state universities

are in the University of California system. However, as long as one is aware of the relatively large weight public universities have in this survey, the sample of universities is appropriate for comparison purposes.

*Comparison Sample for Engineering:* The MIT sample for engineering includes 21 institutions: the California Institute of Technology, Carnegie-Mellon, Columbia, Cornell, Georgia Institute of Technology, Massachusetts Institute of Technology, Princeton, Purdue, Rice, Stanford, California (Berkeley), California (Los Angeles), California (San Diego), California (Santa Barbara), Illinois, Michigan, Pennsylvania, Rochester, Texas, Wisconsin (Madison), and Yale. In the judgement of SCESF, meaningful salary comparisons can be made with this sample of universities because it is sufficiently representative of engineering schools elsewhere that are considered to be peers of Penn's School of Engineering and Applied Science (SEAS).

*Comparison Sample for Architecture:* The MIT sample for architecture includes 16 institutions: Carnegie-Mellon, Columbia, Cornell, Georgia Institute of Technology, Harvard, Massachusetts Institute of Technology, Princeton, Rice, California (Berkeley), California (Los Angeles), Illinois, Michigan, Pennsylvania, Texas, Wisconsin (Madison), and Yale. In the judgement of SCESF, meaningful salary comparisons can be made with this sample of universities because it is sufficiently representative of architecture schools elsewhere that are considered to be peers of Penn's Graduate School of Fine Arts (GSFA).

*Comparison Sample for Management:* The MIT sample for management includes 18 institutions: Carnegie-Mellon, Columbia, Cornell, Georgia Institute of Technology, Harvard, Massachusetts Institute of Technology, Purdue, Rice, Stanford, California (Berkeley), California (Los Angeles), Illinois, Michigan, North Carolina, Pennsylvania, Rochester, Texas, and Yale. In the judgement of SCESF, meaningful salary comparisons can be made with this sample of universities because it is sufficiently representative of management schools elsewhere that are considered to be peers of Penn's Wharton School.

### 2. Salary Comparisons: Penn's Competitive Standing

The most meaningful comparisons of mean faculty salaries at Penn with those at other universities in the MIT sample are broken out by academic field and rank. However, as a broad overall generalization for the four schools at Penn included in the MIT survey as weighted by faculty size, it is fair to conclude that Penn's mean faculty salaries (for all three ranks) were above the mean of the MIT sample as of the Fall 2000, with salaries at the full and associate professor ranks appear to have been more competitive than those at the assistant professor ranks.<sup>6</sup> Thus, Penn faculty salaries (overall for the four schools included) are at a competitive level as defined by being well above the mean in the substantial MIT sample of comparison research universities (about half of which are private and half public).

However, Penn's competitive level for full professors in the MIT sample has declined considerably during the past five years (though still well above the mean), while that of associate professors has greatly improved to very competitive level due to exceptional increases in SAS from FY 2000 to FY 2001. The competitive level for assistant professors FY 2001 was virtually the same as in FY 1997 and only slightly below that of full professors. Thus, there is much room for improvement in Penn's competitive position in the MIT sample, especially at the full and assistant professor ranks in terms of improving their relative standing and, for full professors, in recovering ground lost during the past five years.

In our 2000 report, SCESF provided information about mean salary levels for each academic field included in the MIT survey as of the Falls 1996 through 1999. This information is now updated for Fall 2000 in Table 4 in terms of Penn's rank order of mean salary levels within the MIT sample. The multi-year data of Table 4 are comparable year-to-year in that the same set of universities (for each academic field) is used for each of the five years reported. Thus, none of the trends in rank orders

<sup>5</sup> GSFA also includes Departments of City and Regional Planning, Landscape Architecture and Regional Planning, and Fine Arts.

<sup>6</sup> It is difficult to interpret the external competitiveness of salaries of associate professors because (a) the number of faculty members at this rank is usually small and the addition of a new member to this rank or the departure of a senior member from this rank can have marked effect on the mean, and (b) this rank includes both relatively junior non-tenured members and relatively senior tenured members, the mix of which is thought to vary greatly among universities in the MIT sample.

observed over time can be attributed to instability in the sample size or composition.

SCESF has analyzed both the rank order salary data of Table 4 and the more detailed salary data (e.g., frequency distributions) from which the rank orders were computed. Based on our comprehensive study of data from the MIT Salary Survey (including the frequency distributions data not released for publication), we describe below, in separate paragraphs for each academic field and rank, the two most salient points: (a) the competitive position of a Penn mean salary level as of Fall 2000 and (b) the change (if any) in this competitive position during the past five years.

**Full Professors in the Natural Sciences:** As of 2000-2001, the mean salary of full professors in the natural sciences at Penn ranked 12th of 24 universities in the relevant MIT sample, although one of the 11 universities above Penn was less than 2% higher<sup>7</sup>. Accordingly, Penn's current competitive position within the MIT sample is best described as average. This position of Penn's mean salary in the natural sciences represents a noticeable<sup>8</sup> decline in its competitive position since 1996-97.

**Full Professors in the Social Sciences and Humanities:** As of 2000-2001, the mean salary of full professors in the social sciences and humanities at Penn ranked 10th of 24 universities in the relevant MIT sample, although 2 of the 9 universities above Penn were less than 2% higher. Accordingly, Penn's current competitive position in the widely distributed MIT sample in this academic field is best described as somewhat above average. This competitive position of Penn's mean salary in the social sciences and humanities has been stable during the past five years.

**Full Professors in Engineering:** As of 2000-2001, the mean salary of Penn's engineering professors ranked 11th of 21 universities in the relevant MIT sample, although 3 of the 10 universities above Penn were less than 2% higher.

The mean engineering salaries in the MIT sample are not dispersed widely, and become even more tightly bunched during the past five years. The import of this is that the Penn mean salary, though average, is still reasonably close to those above. Nonetheless, the current competitive position of Penn's mean salary in engineering represents a noticeable decline in its competitive position since 1996-97, but a noticeable improvement since 1999-2000.

**Full Professors of Architecture:** As of 2000-2001, the mean salary of Penn's GSFA professors was quite competitive in that it ranked 3rd of 15 universities in the relevant MIT sample. However, the two universities with higher salaries exceeded Penn's level by a considerable amount. In comparison with the entire sample of 15 universities reporting data for architecture, the mean GSFA salary leads a narrowly disbursed middle group. In general, the current competitiveness of the GSFA mean salary represents a noticeable improvement since 1996-97.

**Full Professors of Management:** As of 2000-2001, the mean salary of Penn's Wharton professors ranked 6th of 18 universities in the relevant MIT sample, although 1 of the 5 universities above Penn was less than 2% higher. During the past five years, the dispersion of mean salaries has declined noticeably—the significance of which is that the Wharton mean salary in the MIT sample is nonetheless close to the majority of those above (i.e., the mean Wharton salary is reasonably competitive with most of the highest offered elsewhere). The current Wharton mean salary represents a noticeable improvement in its competitive position since 1996-97.

**Associate Professors in the Natural Sciences:** As of 2000-2001, the mean salary of associate professors in the natural sciences at Penn ranked 16th of 24 universities in the relevant MIT sample, although 3 of the 15 universities above Penn were less than 2% higher. The competitive position of the Penn mean salary in the natural sciences has declined noticeably since 1996-97, though this decline was less than as of 1999-2000.

**Associate Professors in the Social Sciences and Humanities:** As of 2000-2001, the mean salary of associate professors in the social sciences and humanities at Penn ranked 4th of 24 universities in the relevant MIT sample. Accordingly, Penn's current competitive position in the MIT sample in this academic field is well above average, and, in fact, has improved considerably since last year (FY 1999-2000). As a consequence, the competitive position of the Penn mean salary in the social sciences and humanities has also improved noticeably since 1996-97.

**Associate Professors in Engineering:** As of 1999-2000, the mean salary of associate professors in engineering at Penn ranked 12th of 21 universities in the relevant MIT sample, although 3 of the 11 universities above Penn were less than 2% higher. Accordingly, Penn's current competitive position in the MIT sample in this academic field is best described as average. The competitive position of the Penn mean salary in engineering has been reasonably stable since 1996-97.

**Associate Professors of Management:** As of 2000-2001, the mean salary of associate professors at Penn's Wharton School ranked 6th of 18 universities in the relevant MIT sample, although one of the 5 universities above Penn was less than 2% higher. Accordingly, Penn's current competitive position in the MIT sample in this academic field is somewhat above average. The current Wharton mean salary represents a noticeable improvement in its competitive position since 1996-97.

**Assistant Professors in the Natural Sciences:** As of 2000-2001, the mean salary of assistant professors in the natural sciences at Penn ranked 12th of 24 universities in the relevant MIT sample, although 2 of the 11 universities above Penn was less than 2% higher. Even so, Penn's current competitive position within the MIT sample is best described as average because the Penn salary was very close to the median of the sample. The current competitive position of the Penn mean salary in the natural sciences has been reasonably stable since 1996-97.

**Assistant Professors in the Social Sciences and Humanities:** As of 2000-2001, the mean salary of assistant professors in the social sciences and humanities at Penn ranked 11th of 24 universities in the relevant MIT sample, although one of the 10 universities above Penn was less than 2% higher. Penn's current competitive position in the MIT sample in this academic field has improved from considerably below average last year (FY 1999-2000) to average. In the longer term, the competitive position

**Table 4**

**Rank Order of mean salary levels of Penn faculty members by five academic fields in comparison with selected public and private research universities as of the Fall Terms of 1996, 1997, 1998, 1999, and 2000**

Academic Fields	Rank Order by Year				
	1996-97	1997-98	1998-99	1999-00	2000-01
<b>Full Professor</b>					
Natural Sciences	10/24	10/24	14/24	13/24	12/24
Soc Sci/Human	8/24	8/24	11/24	10/24	10/24
Engineering	10/21	8/21	13/21	12/21	11/21
Architecture	5/15	4/15	4/15	3/15	3/15
Management	5/18	5/18	5/18	5/18	6/18
<b>Associate Profs</b>					
Natural Sciences	9/24	12/24	16/24	20/24	16/24
Soc Sci/Human	6/24	5/24	7/24	7/24	4/24
Engineering	8/21	6/21	12/21	12/21	12/21
Architecture	-	-	-	-	-
Management	7/18	7/18	7/18	5/18	6/18
<b>Assistant Profs</b>					
Natural Sciences	10/24	8/24	11/24	9/24	12/24
Soc Sci/Human	10/24	14/24	16/24	17/24	11/24
Engineering	16/21	13/21	17/21	19/21	18/21
Architecture	11/14	11/14	12/14	13/14	13/14
Management	9/18	7/18	3/18	5/18	5/18

**Note:** Salary rank orders pertain to the mean academic base salary levels of Penn standing faculty members from the Sciences (of SAS) and Social Sciences and Humanities (of SAS), and the Schools of Engineering and Applied Science (for engineering), Graduate Fine Arts (for architecture), and Wharton (for management). Rank orders are reported only if the number of faculty members is four or more. Data source: MIT Salary Survey.

<sup>7</sup> For the purpose of describing Penn's competitive salary position, mean salaries at other universities are considered to be roughly equivalent to a Penn mean salary if they are within 2% (plus or minus) of the Penn salary.

<sup>8</sup> The word "noticeable" is used here to refer to a change of 3% to 5% in the salary data over time whereas the word "considerable" is used to describe a change of 6%, or more, in the salary data over time. Salary data that change only 0% to 2% over time are regarded as stable.

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of the Penn mean salary in the social sciences and humanities was about the same as in 1996-97.

*Assistant Professors in Engineering:* As of 2000-2001, the mean salary of assistant professors in engineering at Penn ranked 18th of 21 universities in the relevant MIT sample, although 4 of the 17 universities above Penn was less than 2% higher. Because mean salaries are tightly bunched at the lower end of the distribution, Penn's mean salary in this academic field is less than 3% below the median. However, the competitive position of the Penn mean salary in engineering has improved noticeably since last year (FY 1999-2000) and was reasonably close to that in 1996-97.

*Assistant Professors of Architecture:* As of 2000-2001, the mean salary of assistant professors in Penn's GSFA ranked 13th of 14 universities in the relevant MIT sample, although 1 of the 12 universities above Penn was less than 2% higher. Thus, Penn's mean salary in this academic field is not competitive in the MIT sample. In addition, the competitive position of the current GSFA mean salary has declined noticeably since 1996-97.

*Assistant Professors of Management:* As of 2000-2001, the mean salary of assistant professors in Penn's Wharton School ranked 5th of 18 universities in the relevant MIT sample, although one of the 4 universities above Penn was less than 2% higher. Accordingly, Penn's current competitive position in the MIT sample in this academic field is somewhat above average. The competitive position of this Wharton mean salary has improved noticeably since 1996-97.

### 3. General Conclusions about Penn's Competitive Standing

As of academic year 2000-2001, the competitiveness of Penn's mean salary levels varies greatly across academic fields, and by professorial rank within fields. Only Wharton's mean salaries are clearly above average across all three ranks. The mean salaries at Penn of full and associate professors in the social sciences and humanities are also above average, though the mean salary of assistant professors is average. Similarly, the mean salary of full professors in GSFA is above average, while that of assistant professors ranks only 13th out of 14 in the MIT sample. Likewise, the mean salary of Penn's assistant professors in engineering lags well behind the competition.

Except for Wharton, Full Professors in the GSFA, and Associate Professors in the Social Sciences/Humanities areas of SAS, there certainly is much room for general improvement in the competitiveness of Penn mean salary levels. How much improvement should be expected is a matter of judgement, but it is reasonable to expect that the general competitive levels attained for full professors in 1996-97 should be regained<sup>9</sup> and that the competitive level of assistant professor salaries should be improved considerably (with the possible exception of Wharton).

Overall, this is a more promising overview of Penn's competitiveness by academic field and rank than presented in SCESF's 2000 *Annual Report* because some improvement in competitiveness since last year (FY 1999-2000) was observed in several areas (Professors in SEAS, Associate Professors in SAS, and Assistant Professors in the Social Sciences/Humanities and SEAS). Fortunately, no declines in competitiveness were observed since last year. Thus, much progress was made in one year, though (as noted above) there is still much room for improvement in light of the noticeable downward trend during the past five years in many areas. This raises the question about what explains the general decline in Penn's salary competitiveness in the MIT sample of research universities during the five most recent years. One possibility is that Penn has been investing a *decreasing* amount of funds in faculty salary increases in its four schools (SAS, SEAS, GSFA, Wharton) that are included in the MIT survey during the period 1996-97 to 2000-2001. A review of salary increase percentages, year-by-year, for each school and each rank within school reveals that this is clearly *not* so. For each rank for each of the four schools, the mean salary increase percentage was greater last year (i.e., FY 2000) than it was in FY 1997. For FY 2001 in comparison with the prior year by rank, two noteworthy trends appear: mean faculty salary

increase percentages for SAS were substantially greater, whereas the mean increase percentages for Wharton were noticeably lower (increase percentages that were even slightly less than in FY 1997).

In general, Penn has been aggressively increasing faculty salaries during the past four years as judged by its own standards. Therefore, the explanation for general decline over five years in the competitive position of Penn's full professor salaries (as seen in MIT survey data) must be that our competition is increasing faculty salaries at a considerably higher rate than Penn. That is, in spite of Penn's efforts to improve faculty salary levels, our competitive position has declined in some areas because other universities are even more aggressively increasing faculty salaries.

### C. Comparisons with Other Universities for the Health Schools

SCESF has been able to review cross-university comparative salary data for the Schools of Dental Medicine, Veterinary Medicine, and Nursing. The Committee appreciates the cooperation of the Office of the Provost and the Deans of the Faculties of these Schools for making this possible.

#### 1. School of Dental Medicine

With respect to the mean salary levels of faculty members at Penn's School of Dental Medicine, comparative data are available from a salary survey for 1996-97, 1997-98, and 1998-99 conducted by the American Association of Dental Schools (AADS). Accordingly, Penn salaries can be compared to salary norms based on a sample of approximately 50 schools of dental medicine (the exact size of the sample varies slightly by year). The salary norms published include the 25th, 50th, and 75th percentile salaries, along with the mean salary, of the sample of about 50 schools (including Penn). Separate norms are published for dental schools in the public and private sectors, as well as combined. The salary norms are then reported separately by AADS for administration, clinical science, basic science, behavioral science, allied education, and research.

Though the published salary norms obscure the identification of participating universities, the names of the approximately 50 universities in the sample are reported.<sup>10</sup> SCESF has been informed that five of Penn's main competitors are included among the approximately 50 universities participating in the survey.

The data recorded by the dental salary survey differs from the standard definition of salary used in this report (i.e., the academic base salary of standing faculty members excluding clinician educators) in the following ways: (a) clinician educators are included, (b) full-time faculty members who may work less than full time at a dental school are included, (c) guaranteed annual salaries are converted to a guaranteed annual salary per half day, and (d) the comparative data for the three professorial ranks exclude the salaries of Deans, Associate and Assistant Deans, various Directors, and Department Heads. In order to make meaningful comparisons using the salary norms generated by AADS survey, Penn's School of Dental Medicine provided the Committee with mean and median salaries computed in accordance with the survey system and principles for members of the Faculty of Dental Medicine separately for the areas of clinical science and basic science, provided the number of faculty members was four or more in a rank by area cell. Because Penn mean and median salaries were very similar, only the comparative levels of the median salaries are discussed below.

In dental medicine, the private universities in the AADS sample paid considerably higher median faculty salaries than public universities during all three years examined (1996-97, 1997-98, 1998-99). In comparison with the AADS sample of about 18 private universities nationwide (which included Harvard, Columbia, NYU, Penn, Northwestern, Case

<sup>9</sup> In fact, it is clear from Committee discussion with the Interim Provost in 1998 and the Provost in 1999 that the faculty salary policy is to maintain, at the very least, Penn's competitive position with peer universities. The recent declines in competitiveness reviewed here represent a major "challenge" in light of this policy.

<sup>10</sup> For the 1998-99 AADS salary survey, 52 institutions participated (18 in the private sector, 35 in the public sector). The private schools were: Boston U., Harvard, Tufts, Columbia, N.Y.U., Temple, Penn, Pitt, Howard, Meharry Medical College, U. Nebraska, Northwestern, U. Detroit Mercy, Creighton U., Case Western Reserve, U. Pacific, U.S.C., and Loma Linda U. The public schools were: U. Conn., U. Maryland, UMDNJ (New Jersey), SUNY at Stony Brook, SUNY at Buffalo, U. Alabama, Baylor College of Dentistry, Medical College of Georgia, U. Kentucky, U. Louisville, Louisiana State U., U. of Florida, U. of Mississippi, U. of N.C., U. Oklahoma, U.S.C., U. Tennessee, U. Texas at HSC at Houston, U. Texas HSC at San Antonio, W.V.U., U. Puerto Rico, Virginia Commonwealth U./MCV, Southern Illinois U., U. Illinois, U. Iowa, U. Michigan, U. Minnesota, U. Missouri, Kansas City, Ohio State U., U.C.L.A., U.C.S.F., U. Colorado, U. Oregon, U. Washington.

Western Reserve, and U.S.C), Penn salaries have been highly competitive generally in both the clinical and basic sciences. For 1998-99 (the most recent year), Penn median salaries (in all three ranks of the clinical and basic sciences separately) were equivalent to, or exceeded, the 75th percentile of the distribution of salaries for the 18 universities in the sample. This high level of competitiveness was also seen in the data for the prior two years.

With respect to salary levels at a peer group of dental schools included in the AADS salary survey, there is no way to determine the competitiveness of median Penn salaries in dental medicine. However, a spokesman for Penn's School of Dental Medicine has informed SCESF that Penn salaries at all three professorial ranks are strongly competitive within its peer group, but not ranked first.

## 2. School of Nursing

With respect to the mean salary levels of faculty members at Penn's School of Nursing, comparative data are available from a salary survey for 2000-01 conducted by the American Association of Colleges of Nursing (AACN). Accordingly, Penn salaries can be compared to salary norms based on a sample of 10 nursing schools that have been selected as Penn's peers.<sup>11</sup> The salary norms available include the 25th, 50th, and 75th percentile salaries, along with the mean salary, of the sample of 10 comparison schools (excluding Penn).

The data recorded by the nursing salary survey differs from the standard definition of salary used in this report (i.e., the academic base salary of standing faculty members excluding clinician educators) in the following ways: (a) clinician educators are included (Penn included its clinician educators in nursing), (b) includes administrative stipends where they exist (Penn included administrative stipends paid to its nursing faculty), (c) and may include clinical income (but any clinical income earned by Penn faculty is excluded for the purposes of this salary study). In order to make meaningful comparisons using the salary norms generated by the AACN survey, Penn's School of Nursing provided the Committee with mean, median, and 25th and 75th percentile salaries computed in accordance with the survey system and principles for members of the Faculty of Nursing. However, unknown differences across nursing schools in whether components such as administrative stipends and clinical income are included in reported salary statistics may render exact comparisons problematic. Because the mean and median salaries for Penn's peer universities were very similar, only the comparative levels of the median salaries are discussed below.

In general, the private universities in the AACN sample paid considerably higher median faculty salaries in nursing than public universities during 2000-01. In particular with respect to the sample of 10 peer nursing schools from the AACN salary survey, Penn salaries for full professors in nursing were highly competitive (e.g., the 25th percentile Penn salary was higher than the 75th percentile in the comparison group). Likewise, the level of Penn salaries for associate professors were clearly above those of the comparison group. However, Penn salaries for assistant professors were only slightly above the median in relation to the comparison group.

Overall, faculty salary levels at Penn's School of Nursing are quite competitive with those offered by a group of peer nursing schools, with Penn being much more competitive at the level of full professor than at assistant professor.

## 3. School of Veterinary Medicine

Since issuing its 1999-2000 Report (*Almanac Supplement, February 6, 2001*) that included a section on the external competitiveness of faculty salaries at Penn's School of Veterinary Medicine, the SCESF has received no additional comparative salary data to report for this School.

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

In the absence of salary data for five of Penn's 11 schools (other than Medicine), a comparison of the mean salaries of all full professors at

Penn was made with those at a small select group of research universities based on data published annually by the American Association of University Professors (AAUP) in the April/May issues of *Academe*. To make meaningful and fair comparisons of Penn salaries with those at other Universities, five criteria for selection of comparison universities were first defined: (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)<sup>12</sup> in a rating system reported by *U.S. News and Report*. The 17 research universities meeting all five of these criteria are identified in the first column of Table 5.

The relative standings of mean salaries of Penn full professors are presented in Table 5 for six years. The order of listing of universities in Table 5 was determined by the magnitude of mean salaries of full professors (from high to low) for the most recent academic year (2000-01). Next, the difference between a comparison university's mean salary and Penn's mean salary was computed as a percentage of Penn's mean salary. For example as seen in Table 5, the mean salary of Harvard full professors in 1986-87 was 16.9% higher than Penn's mean salary that year (\$59,600), while the mean salary at Northwestern was 4.9% below Penn's mean salary.

The data of Table 5 show that the mean salaries for full professors at Penn gradually became more competitive during the past 15-year period. For example, seven universities provided mean salaries more than 2% higher than Penn in 1986-87, while the mean salaries at only four universities (Harvard, Stanford, Yale, and Chicago) exceed Penn by more than 2% in 2000-01. In addition, the percentage advantage of salaries at

Table 5

**Full professor salary comparisons: Percentage differences in mean academic base salary levels of Penn full professors in comparison with salary levels of full professors at a sample of comparable research universities for Academic Years 1986-87, 1991-92, 1996-97, 1998-99, 1999-00, and 2000-01**

University <sup>a</sup>	Full Professor Salaries: Percentage Differences by Year					
	1986-87	1991-92	1996-97	1998-99	1999-00	2000-01
Harvard	+16.9%	+14.7%	+12.2%	+11.3%	+12.3%	+12.4%
Stanford	+12.8%	+7.6%	+6.4%	+7.4%	+5.5%	+5.3%
Chicago	-0.3%	+3.6%	+1.6%	+3.3%	+3.2%	+3.7%
Yale	+6.7%	+7.1%	+4.7%	+4.2%	+3.6%	+3.2%
Pennsylvania	\$59.6K	\$80.4K	\$100.0K	\$108.4K	\$114.8K	\$120.3K
Columbia	+3.2%	+2.0%	+1.2%	+0.8%	-1.2%	-0.1%
MIT	+4.7%	+4.4%	+0.1%	-1.3%	-2.7%	-2.7%
Northwestern	-4.9%	-1.6%	-3.9%	-1.7%	-3.1%	-3.4%
U.C. (Berkeley)	+7.4%	-2.9%	-13.0%	-4.5%	-5.3%	-5.6%
Duke	-3.7%	-1.0%	-4.2%	NA	-5.9%	-5.6%
UCLA	+4.5%	-5.0%	-13.9%	-6.5%	-7.6%	-6.3%
Virginia	-1.0%	-12.1%	-15.8%	-11.0%	-11.8%	-11.7%
Michigan	-6.2%	-8.8%	-12.0%	-10.8%	-12.1%	-12.6%
Carnegie-Mellon	+0.8%	-1.9%	-8.9%	-10.6%	-13.6%	-12.7%
N.C. (Chapel Hill)	-10.7%	-18.8%	-17.8%	-18.2%	-18.3%	-16.1%
Texas (Austin)	-16.6%	-15.0%	-20.4%	-22.2%	-22.1%	-21.8%
MN (Twin Cities)	-15.8%	-21.6%	-25.2%	-21.2%	-22.0%	-22.2%

**Note:** 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 and all standing faculty members who are appointed as Clinician Educators from four other schools that have such positions (Dental Medicine, Veterinary Medicine, Nursing, and Social Work). Data source: AAUP Salary Surveys.

<sup>a</sup>Universities are ordered from highest to lowest mean salaries for full professors as of 2000-01. 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.

<sup>11</sup> Peer universities in nursing included in the AACN sample are: Oregon Health Sciences U., Johns Hopkins U., U. California-San Francisco, U. Colorado Health Sciences Center, U. Illinois-Chicago, U. Maryland, U. Michigan, U. North Carolina-Chapel Hill, U. Pittsburgh, U. Washington. A peer nursing school missing from the list of 10 was Case Western Reserve University.

<sup>12</sup> 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.

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Harvard, Stanford, and Yale over Penn decreased substantially during this period of time, while only Chicago gained in percentage advantage.

Based on the data of Table 5, it is clear that mean salaries of full professors at Penn, on the whole, become much more competitive with the very highest salaries elsewhere during the period 1986-87 through 1996-97, and during the past three years have mostly maintained their respectable competitive position among the top few universities in the nation (and probably in the world, for that matter).<sup>13</sup> Though Penn's competitive position in this respect is strong in general, aggregated salary data such as these do not reveal which schools, and departments within schools, may provide mean salaries that are particularly competitive or that may lag behind their competition. Therefore, SCESF continues to seek comparative salary data that is specific to each of Penn's schools.

Even though SCESF was careful to select universities for overall mean salary comparisons that were similar to Penn on several important criteria and made comparisons at the full professor rank (i.e., we did not aggregate across the three professorial ranks), AAUP salary data did not permit the SCESF to control for the specific schools sponsored by each university and the number of full professors appointed to each school. Such controls are desirable because mean salary levels vary by school, as do the number of professors appointed to the faculty of each school on which the means are based. Therefore, the relative standing of Penn mean salaries in Table 5 might be misleading, but the trend over time showing an improvement in Penn's relative standing is judged to be sufficiently valid to include in this report. In addition, tables similar to that of Table 5 (for full professors) were constructed for associate and assistant professors. Due to smaller sample sizes and other factors clouding meaningful comparisons with other universities, no comparative salary data from AAUP surveys are presented for the two junior ranks.

## IV. Penn Faculty Benefits

Although our 1998-99 Annual Report included a section on comparative faculty benefits data, further study of data available on cross-university comparisons of faculty benefits has revealed that comparative benefits data are of insufficient precision to make detailed quantitative comparisons meaningful. Accordingly, no such comparisons are made in this report.

Based on available comparative benefits data, however, it appears to SCESF that employee benefits package provided for Penn faculty members is of equal, or greater, value to that provided to faculty members at Penn's peer private universities. In particular, it appears that the tuition benefit for Penn faculty dependents is substantially greater than that provided by peer universities, while other major types of benefits are generally comparable.

## V. Penn Faculty Salaries: Internal Comparisons

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

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

We turn next to a description and analysis of several dimensions of faculty salary variability within Penn. As with the external salary comparisons reviewed above, all salary data reviewed in this section exclude the School of Medicine and all standing faculty members who are appointed as Clinician Educators from four other schools that have such positions (Dental Medicine, Veterinary Medicine, Nursing, and Social Work).

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

As reported in Table 1, median faculty salary increases by rank (for all of Penn's schools combined) substantially exceeded the growth in the CPI for most recent full year (FY 2000) for which both sets of data are available and exceeded Penn's budget guidelines for the current year and past two years (FY 1999, 2000, and 2001). These salary increases are broken out by school and rank in Tables 6, 7, and 8 where it can be seen that there has been considerably variability in median salary increases across schools and years, as well as among the first and third quartile increases (Q<sub>1</sub> and Q<sub>3</sub>, respectively). With respect to full professors (see Table 6), 7 of 13 of the median salary increases for FY 2001 approximated the general guideline of 3.5%, while the other 6 were well above it.

Before reviewing these salary increases, it should be recognized that the salary increase guideline of 3.5% is just that, a guideline, and pertains 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 generous salary offers from other institutions). Schools may allocate more, or less, resources to fac-

Table 6

Full Professors: Median academic base salary percentage increases of continuing Penn Full Professors for FY 1999, 2000, and 2001, along with the first and third quartile salary increases

School/Area	First Quartile (Q <sub>1</sub> ), Median (Md.) <sup>a</sup> , and Third Quartile (Q <sub>3</sub> ) Percentage Salary Increases by Year								
	1998-1999			1999-2000			2000-2001		
	Q <sub>1</sub>	Md.	Q <sub>3</sub>	Q <sub>1</sub>	Md.	Q <sub>3</sub>	Q <sub>1</sub>	Md.	Q <sub>3</sub>
All Schools		3.5			3.5			3.8	
Annenberg	3.1	10.1	15.4	5.0	8.8	11.5	3.5	3.5	4.0
Dental Medicine	3.5	4.5	5.0	3.5	3.5	4.0	3.5	4.0	5.0
Eng & Applied Sci	2.5	3.5	4.5	3.0	3.7	4.6	3.0	4.0	5.2
Grad Education	3.8	4.0	5.0	4.0	5.0	6.7	3.0	4.3	5.0
Grad Fine Arts	3.0	3.0	5.0	2.5	3.5	5.0	3.0	3.5	4.5
Humanities (A&S)	2.7	2.9	3.5	3.0	3.0	4.0	3.2	3.4	4.5
Law	3.5	5.7	9.0	3.5	5.2	6.6	5.4	6.2	7.7
Natural Sci's (A&S)	2.1	2.9	3.8	2.5	3.0	4.2	3.0	3.4	4.3
Nursing	-	3.4	-	-	3.5	-	-	3.5	-
Social Sci's (A&S)	2.5	3.0	3.9	2.9	3.1	4.2	3.1	3.4	4.2
Social Work	-	5.5	-	-	5.0	-	-	5.0	-
Veterinary Med	2.5	3.5	4.0	3.5	3.5	5.0	3.5	3.5	4.0
Wharton	3.5	4.1	8.0	3.8	4.7	5.9	3.5	4.1	5.2
Budget Guideline		3.5			3.5			3.5	

**Note 1:** The Budget Guideline shown 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.

**Note 2:** Academic base salary percentage increases pertain to all Penn standing faculty members who continued as full professors during the periods of time reported. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted or entered Penn employment during the years reported.

<sup>a</sup>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 (Q<sub>1</sub>) and third quartile (Q<sub>3</sub>) percentage increases. At the lower end of the salary increase percentages, 25% of all increases were below the Q<sub>1</sub>, while 75% were above. At the upper end, 75% of all increases were below the Q<sub>3</sub>, while 25% were above. Median increases are reported only if the number of faculty members is four or more. The quartile increases are reported only if the number of faculty members is ten or more.

<sup>13</sup> Of universities not included in our comparison group, only Rockefeller University, Princeton University, the California Institute of Technology, and New York University provided mean salaries for full professors in 1999-00 that were higher than Penn's.

ulty salary increases than the guideline, depending upon each school's financial circumstances (see Section II.B. above). 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 instance. Accordingly, a particular median increment of less than 3.5% 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 that much on average. Furthermore, the 3.5% 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. This is a statistical fact that indicates positive skewness in the distribution of salary increase percentages within schools/areas (i.e., the majority of salary increases are bunched toward the low end, with a small or modest percentage of faculty members benefiting from relatively large increases).

Nonetheless, the overall mean salary increase for all faculty members continuing in the same rank for FY 2001 was 5.9% (see Table 1), a number well above the guideline of 3.5%. Even so, this substantial salary increase resource in the aggregate was not distributed sufficiently widely to lift the median salaries of all ranks in all schools/areas by at least the guideline amount—a phenomenon that can be attributed to differing wealth and budget priorities among the various schools as permitted under RCBS.

A seemingly modest, but significant, change in faculty salary policy was incorporated into the Salary Guidelines for 1998-99 which specified that "increases in merit should range from 1.0 to 6.0 percent." The award of increases outside this range required consultation with the Provost.

**Table 7**

**Associate Professors: Median academic base salary percentage increases of continuing Penn Associate Professors for FY 1999, 2000, and 2001, along with the first and third quartile salary increases**

School/Area	First Quartile (Q <sub>1</sub> ), Median (Md.) <sup>a</sup> , and Third Quartile (Q <sub>3</sub> ) Percentage Salary Increases by Year								
	1998-1999			1999-2000			2000-2001		
	Q <sub>1</sub>	Md.	Q <sub>3</sub>	Q <sub>1</sub>	Md.	Q <sub>3</sub>	Q <sub>1</sub>	Md.	Q <sub>3</sub>
All Schools		3.5			3.9			4.0	
Annenberg	-	-	-	-	-	-	-	-	-
Dental Medicine	3.5	3.5	4.0	-	3.5	-	3.5	3.5	6.2
Eng & Applied Sci	3.7	4.0	5.6	3.3	3.5	4.8	3.4	4.0	
Grad Education	-	5.0	-	-	4.0	-	-	4.0	-
Grad Fine Arts	-	-	-	-	-	-	-	-	-
Humanities (A&S)	2.8	2.9	4.0	3.0	3.9	7.7	3.6	5.4	7.9
Law									
Natural Sci's (A&S)	2.6	3.4	5.3	2.8	3.1	4.7	2.5	3.1	5.4
Nursing	2.5	3.2	4.2	3.0	4.1	4.1	2.8	3.5	4.0
Social Sci's (A&S)	2.5	3.0	4.7	2.3	3.0	3.9	3.1	3.4	6.2
Social Work	-	5.0	-	-	4.5	-	2.1	5.0	5.0
Veterinary Med	3.5	3.5	4.0	3.5	4.5	10.4	3.5	4.0	5.8
Wharton	2.5	4.1	10.2	3.5	5.4	8.7	4.0	4.4	6.4
Budget Guideline		3.5			3.5			3.5	

**Note 1:** The Budget Guideline shown 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.

**Note 2:** Academic base salary percentage increases pertain to all Penn standing faculty members who continued as associate professors during the periods of time reported. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted or entered Penn employment during the years reported.

<sup>a</sup>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 (Q<sub>1</sub>) and third quartile (Q<sub>3</sub>) percentage increases. At the lower end of the salary increase percentages, 25% of all increases were below the Q<sub>1</sub>, while 75% were above. At the upper end, 75% of all increases were below the Q<sub>3</sub>, while 25% were above. Median increases are reported only if the number of faculty members is four or more. The quartile increases are reported only if the number of faculty members is ten or more.

Prior to this, the range specified was from 2.0 to 6.0 percent. It is reasonable to surmise that two noteworthy changes in the allocation of salary increases, as seen in Tables 6, 7, and 8 for the three years under the new policy (i.e., 1998-99, 1999-00, 2000-01), can be attributed, at least in part, to the policy shift:

1. Whereas in 1997-98, the median salary increase for all three ranks of the professoriate was comparable when aggregated across all school (see the Committee's 1999-2000 Report as published in *Almanac* on February 6, 2001), the median percentage increases for assistant professors was considerably higher in 1998-99, 1999-00, and 2000-01 than it was for full professors and associate professors. Whether this was an effort to make assistant professor salaries more competitive due to market factors or due to greater merit than perceived in the higher two ranks is not clear from the data tabulated. Whatever the reason, assistant professors have been advantaged during the past three years.

2. With 1% salary increases coming within the authorized range for 1998-99 not requiring special approval of the Provost (instead of the prior 2%), the first quartile (Q<sub>1</sub>) raises for full professors declined across all schools/areas for 1998-99, 1999-00, and 2000-01 in comparison with 1997-98. This decline in first quartile increases did not occur on a school by school basis for assistant professors, another indicator of the trend noted above to higher increases of salaries of assistant professors than of full professors.

The SCESF has been advised that the change in policy for 1998-99 (i.e., specifying 1% instead of 2% as the base of the standard range of salary increases) was taken because Deans wished to have greater flexibility in awarding such increases. Although SCESF has not raised an

**Table 8**

**Assistant Professors: Median academic base salary percentage increases of continuing Penn Assistant Professors for FY 1999, 2000, and 2001, along with the first and third quartile salary increases**

School/Area	First Quartile (Q <sub>1</sub> ), Median (Md.) <sup>a</sup> , and Third Quartile (Q <sub>3</sub> ) Percentage Salary Increases by Year								
	1998-1999			1999-2000			2000-2001		
	Q <sub>1</sub>	Md.	Q <sub>3</sub>	Q <sub>1</sub>	Md.	Q <sub>3</sub>	Q <sub>1</sub>	Md.	Q <sub>3</sub>
All Schools		4.4			5.0			5.1	
Annenberg									
Dental Medicine	-	3.5	-	-	3.5	-	3.5	4.0	5.0
Eng & Applied Sci	4.0	4.5	5.0	4.3	4.6	5.1	4.0	5.8	8.0
Grad Education	-	5.0	-	-	5.0	-	4.5	5.0	5.0
Grad Fine Arts	-	5.0	-	-	3.5	-	3.5	3.5	4.5
Humanities (A&S)	2.5	3.1	4.4	3.0	4.2	6.0	3.5	5.5	9.1
Law	-	8.6	-	-	-	-	-	-	-
Natural Sci's (A&S)	3.8	4.5	5.3	4.1	5.0	8.4	4.9	5.4	8.0
Nursing	-	2.6	-	-	3.5	-	4.0	4.0	7.6
Social Sci's (A&S)	2.9	3.1	4.1	3.0	3.1	5.5	3.3	3.4	5.4
Social Work	-	-	-	-	-	-	4.0	4.5	6.1
Veterinary Med	3.5	3.5	6.0	3.5	3.5	6.0	4.0	5.0	11.6
Wharton	4.3	9.1	10.9	5.4	6.4	9.3	4.9	5.5	6.1
Budget Guideline		3.5			3.5			3.5	

**Note 1:** The Budget Guideline shown 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.

**Note 2:** Academic base salary percentage increases pertain to all Penn standing faculty members who continued as assistant professors during the periods of time reported. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted or entered Penn employment during the years reported.

<sup>a</sup>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 (Q<sub>1</sub>) and third quartile (Q<sub>3</sub>) percentage increases. At the lower end of the salary increase percentages, 25% of all increases were below the Q<sub>1</sub>, while 75% were above. At the upper end, 75% of all increases were below the Q<sub>3</sub>, while 25% were above. Median increases are reported only if the number of faculty members is four or more. The quartile increases are reported only if the number of faculty members is ten or more.

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issue specifically about this policy<sup>14</sup>, we have regularly raised the more general issue about principles by which salary increases are awarded in relation to increases in the CPI (the USCityaverage from Table 1). In this respect, it should be noted that all percentage increases at the first quartile for all three professorial ranks for all schools/areas were greater than percentage growth in the CPI for 1998-99, but only 3 of 13 schools/areas provided CPI growth increases to 25% of more of full professors in 1999-00.

In contrast with 1997-98, we note from Table 6 that for 1998-99 and 1999-00 the median salary increases for full professors in each of the three areas of SAS were clearly below the budget guideline of 3.5% in each year. For 2000-01, however, considerable improvement occurred in that the median percentage increases for full professors in the three areas of SAS had all risen to 3.4%—just 0.1% below the budget guideline.

The distribution of salary increase resources is shown clearly in a comparison of the first and third quartile data of Tables 6, 7, and 8 for FY 2001. Except for the associate and assistant professors in the social sciences area of SAS, it can be seen that none of the relatively low median increases (below 3.5%) were due to quite high third quartile percentage increases (i.e., because unusually large increases were allocated to only 25% of faculty members in a rank/school group). Most generally, it seems that the increases provided to faculty members in these particular schools/areas were generally low relative to the university-wide median. Therefore, the relatively low median increases are more a problem of inadequate resources (or school policy for allocating available resources) than the award of relatively large salary increases to a modest percentage of faculty members of a particular rank in a school/area.

Overall as seen in Tables 6, 7, and 8, there is considerable variability for all three years in salary increment percentages both among Schools within ranks, and among ranks within Schools. SCESF is not aware of specific information about merit and market factors that is available to department heads and deans, and how they weigh this information in deciding salary increments for individual faculty members. Without such information, it is not possible to determine whether any inequity is involved in the salary increase percentages reported in these tables.

## B. Variability in Average Salary Levels by Rank

Three-year trends in mean faculty salaries by rank are shown in Table 9 for all schools combined (except Medicine, of course).<sup>15</sup> Such data give the crudest perspective on rank differences in salary, however, because of aggregation biases across schools. For example, one might expect a considerably larger difference between mean assistant and associate professor salaries. The modest difference might be accounted for by the facts that the Law School has no associate professors (a fact that might decrease the observed associate professor mean) and the Wharton School has a considerably higher percentage of assistant professors than is typical of other schools (a fact that could increase the observed assistant professor mean).

A more meaningful comparison of variation in faculty salaries by rank is made by computing the ratios for continuing faculty members for each school and then computing a mean weighted ratio (weighted for the number of continuing faculty members at each rank in each school).<sup>16</sup> The weighted ratios thus computed are also seen in Table 9. Viewed in this way, there is much greater spread in mean salary levels by rank.

As discussed in the prior section, percentage salary increases for assistant professor, in the aggregate, have been considerably greater than for full professors during the past three years (1998-99, 1999-00, and

2000-01). This trend can also be seen in Table 9 where the weighted ratio of professor to assistant professor salaries has declined year-by-year since 1998-99 (and even more since 1987-88 when the ratio was 1.89). Thus, full professor salaries are losing the internal “competition” for salary increase resources within Penn, as well as losing ground over the same period of time in the external competition with other universities in the MIT salary survey sample as reviewed above.

## C. Variability in Professorial Salary Levels by Years of Service

There has been some concern that full professors who have recently been recruited to Penn (perhaps including those who have recently been promoted to the rank of full professor) have had their salary levels set considerably higher than professors of equivalent merit who have served at Penn for many years (and without commensurate increases to the levels set for recent appointees). If this phenomenon occurs within a department, it would seem to constitute an inequity in salary policy. Consequently, the Committee has recently requested and obtained new and improved salary data to study this matter.

Comparisons were first made by school/area between the current mean salaries of (a) full professors who were appointed, or promoted, as full professors longer than ten years ago (i.e., prior to July 1, 1990) and (b) those who were appointed as full professor from outside Penn during the past 10 years (i.e., excluding those who were promoted to full professor from within Penn during the past 10 years, a separate category addressed below). For this analysis, a minimum of four professors per group was required to compute a mean salary. By this principle, sufficient data were available to make this comparison for 8 of the 13 standard schools/areas routinely analyzed for this report.

It was found that the mean salaries of recently-appointed full professors exceeded the mean salaries of those appointed longer than 10 years ago in six of the eight schools/areas available for analysis, whereas the opposite occurred in only two of the eight schools/areas. Furthermore, in

**Table 9**  
Mean academic base salary levels of continuing Penn standing faculty members by rank

Rank	Academic Year	Salary		Ratio to Assist. Prof. Salary Level	
		Average	Amount	Not Weighted	Weighted <sup>a</sup>
Full Professor	1998-99	Mean	\$112,098	1.69	1.85
		Median	102,600		
	1999-00	Mean	117,092	1.69	1.84
		Median	106,338		
	2000-01	Mean	121,424	1.66	1.79
		Median	110,300		
Associate Prof.	1998-99	Mean	74,129	1.12	1.26
		Median	69,850		
	1999-00	Mean	79,519	1.14	1.24
		Median	74,000		
	2000-01	Mean	83,890	1.15	1.25
		Median	78,600		
Assistant Prof.	1998-99	Mean	66,438	1.00	1.00
		Median	57,350		
	1999-00	Mean	69,417	1.00	1.00
		Median	60,450		
	2000-01	Mean	73,187	1.00	1.00
		Median	64,760		

**Note:** Mean academic base salary levels are based on all Penn standing faculty members who continued in the same rank in FY 1999, FY 2000, and FY 2001 from their respective prior years. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted effective for each year reported.

<sup>a</sup>The weighted ratios were computed by the following procedure: first, the ratios for continuing faculty members for each school were computed (except for Annenberg, which had no assistant professors, and Law, which had but one assistant professor); next a mean weighted ratio was computed (weighted for the number of continuing faculty members at each rank in each school).

<sup>14</sup> Heretofore, the work of SCESF has not benefitted from information about the variability of salary increases by school over a three year period as shown here, for the first time, in Tables 7, 8, and 9.

<sup>15</sup> The mean salary figures for full professors recorded in Table 9 for 1998-99 and 1999-00 are higher than those recorded in Table 5 which are drawn from AAUP reports. This discrepancy is a product of two AAUP policies: first, to exclude faculty members with decanal titles (which will reduce the AAUP mean); second, to include all faculty members in a rank (including those newly appointed to a rank) whereas Table 9 data are limited to faculty members who continued in the same rank from the prior year (a difference that will also reduce the AAUP mean).

<sup>16</sup> Weighted ratios were based on all Schools except Annenberg which has only one assistant professor. Law was not included in the associate professor ratio since none of its faculty members are appointed at this rank.

the six schools/areas in which the recently appointed professors receive the higher mean salaries, the mean percentage salary advantage is 19% over professors appointed more than 10 years ago. In the other two schools in which formerly appointed professors have higher mean salaries than those appointed during the past 10 years, the mean salary percentage advantage is only 3% in both instances. Thus, there clearly seems to be a general trend to pay considerably higher mean salaries to full professors appointed at this rank to Penn during the past 10 years than prior to this.

Three hypotheses can be advanced to explain the generally much high salaries paid to recently-appointed full professors (i.e., appointed during the last 10 years):

1. The full professors recently appointed at Penn have many more years in service at the full professor rank than those appointed prior to 10 years ago, thereby justifying the higher salaries by virtue of longevity,

2. The full professors recently appointed at Penn are of much higher academic merit, on average, than those appointed prior to 10 years ago, thereby justifying the higher salaries by virtue of merit, and/or

3. The mean salary of full professors recently appointed at Penn reflect the market value of full professors at the level of academic merit attained, whereas the mean salary of full professors appointed prior to 10 years ago who are of equal or greater academic merit but whose salaries have not been increased in accordance with the market value for the level of academic merit they have attained. To the extent to which this hypothesis is valid, a condition of salary inequity prevails because Penn's central salary policy is to set the level of professorial salaries in accordance with academic merit regardless of longevity in rank or any other personal attributes.

Of course, these three hypotheses are not mutually exclusive. All three, or any two of these hypotheses could simultaneously be valid explanations for the substantial mean salary differences generally observed between the recently- and formerly-appointed full professors. The direct evidence needed for testing the first hypothesis is data on the mean years of service in the rank of full professor at Penn and elsewhere. Though no such data are available, we have examined data on the mean age of these professorial groups—a reasonable surrogate for years of service. This analysis shows that, for all six schools/areas in which the mean salaries of recently-appointed full professors exceed those of professors appointed longer than 10 years ago, the mean age of the recently-appointed professors is in fact lower than that of the formerly-appointed professors (by over a decade in three of these six schools/areas). On the basis of this finding, we rule out the first hypothesis.

This leaves one or both of the two remaining possible explanations for the mean salary differences of concern: either the recently-appointed full professors are generally of substantially greater merit than those appointed more than 10 years ago, or the lower mean salaries of the formerly-appointed full professors are generally inequitable. In the absence of data available to the Committee on faculty academic merit, SCESF cannot determine whether one, or both, of the second and third hypotheses are valid. We suspect that there is considerable validity to both the second and third hypotheses listed.

In fact, we expect that full professors hired from the outside are selected by policy because they are positioned in the high end of the distribution of academic merit, and therefore may well deserve to be brought in at higher than average salaries prevailing in their respective schools at Penn. On the other hand, if inequity is involved, at least in part, this is further evidence that faculty salaries need to be improved selectively to redress this condition.

A parallel analysis was made by school/area between the current mean salaries of (a) full professors who were appointed, or promoted, as full professors longer than ten years ago (i.e., prior to July 1, 1990) and (b) those who were promoted to full professor from within Penn during the past 10 years. For this analysis, a minimum of four professors per group also was required to compute a mean salary. By this principle, sufficient data were available to make this comparison for a somewhat different group of 8 of the 13 standard schools/areas routinely analyzed for this report.

The results were quite different than observed for full professors appointed from outside Penn within the past 10 years. It was found that the mean salaries of associate professors recently appointed to full professors from within Penn exceeded the mean salaries of those appointed as full professors longer than 10 years ago in only three of the eight schools/areas available for analysis, whereas the opposite occurred in five of the

eight schools/areas. Furthermore, in the three schools/areas in which the recently-promoted professors receive the higher mean salaries, the mean percentage salary advantage ranges from only 1-3% over professors appointed more than 10 years ago. In the other five schools in which formerly appointed professors have higher mean salaries than those promoted during the past 10 years, the mean salary percentage advantage was substantial in all instances. Thus, there clearly seems to be a general trend to pay considerably higher mean salaries to full professors appointed at this rank more than ten years ago in comparison with those promoted to professor from within Penn during the past 10 years.

#### **D. Variability of Average Salary Levels by School/Area**

As described in previous SCESF reports, there is considerable variability in median faculty salary levels across Penn's 13 schools/areas (as listed in Table 3). Information about the extent of this cross-school variability is presented by rank in Table 10 for the three most recent academic years in terms of the first quartile ( $Q_1$ ), second quartile ( $Q_2$ , the same as the median), and the third quartile ( $Q_3$ ) of median faculty salary levels. For full professors, the interquartile range of median salaries in 2000-01 based on the 13 schools/areas was \$26,900 (i.e., the third quartile salary of \$125,100 minus the first quartile salary of \$98,200). The comparable interquartile range of salary levels across schools/areas was understandably less for associate professors (\$26,900) and assistant professors (\$20,400) in absolute dollars. Three facets of these data will be considered below: 1. Measures of salary variability, 2. Differences in variability across ranks, and 3. Trends in variability over time.

##### **1. 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 third quartile salary in the distribution minus the first quartile, all as described in more detail in footnote "b" of Table 10). However, the IQR can be expected to be larger when the general salary level is relatively high (such as for full professors) than it is when the general salary level is much lower (such as for assistant professors). To compensate for such differences in the general level of salaries, we have divided the IQR by the median of the distribution (i.e., the second quartile:  $Q_2$ ), thereby computing a ratio of the IQR to the median (as reported in the next to last column of Table 10 labeled "Ratio: IQR to Median").<sup>17</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 variabilities across ranks and trends over time.

##### **2. Differences in Variability Across Ranks**

As seen in Table 10, the variability (i.e., the IQR) of median salaries for Penn's 13 school/areas for the three professorial ranks is remarkably similar for full and associate professors, and not much different for assistant professors. However, when the ratio of the IQR to the median is computed, the relative variability increased from full to associate to assistant professors. Why this should be, and its implications for salary policy, are not clear. It might be a function (at least in part) of the much great variability in external competitiveness among assistant professor salaries across schools/areas at Penn, than among salaries of full professors, as observed in the MIT survey (see Table 4).

##### **3. Trends in Variability Over Time**

Also as seen in Table 10, the variability (i.e., the IQR) of median salaries for Penn's 13 school/areas for the three professorial ranks in 2000-01 increased considerably from two years prior (1998-99). This is evidence of rapidly increasing disparity of faculty salaries across Penn's 13 schools/areas. However, for full and associate professors, the ratio of the IQR to the median has become larger during the three most recent years, thereby indicating that schools/areas offering higher median salaries also offer higher annual percentage increases. That is, the increases in the IQR are not just proportional to the increase in salary levels from one year to the next, but the disparities among schools/areas in median salaries is growing in percentage terms as well as in dollars. However, this type of increasing variability among median salaries across schools/areas is not

<sup>17</sup> The statistically inclined reader will recognize this ratio as similar to the coefficient of variations (i.e., the ratio of the standard deviation to the mean of a distribution).

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seen for assistant professors in Table 10.

The modest trend toward greater disparity across schools in median salary levels of continuing full and associate, as seen in Table 10, has occurred because, as a general principle, schools/areas offering higher average salaries also offer higher annual percentage increases. This phenomenon is demonstrated by a modest correlation between the mean percentage salary increase for full professors in one year with the mean salary level in the same year across Penn's 13 schools/areas. In FY 2001, this correlation coefficient ( $r$ ) across the 13 schools/areas was .25; in FY 2000, it was .32. Moreover, this correlation of the amount of salary increase with mean salary levels is a more general trend. The median percentage salary increase of full professors from FY 1993 through FY 1999 was correlated highly (i.e.,  $r = .62$ ) with the median salary in FY 1999 across the 13 schools/areas. Thus, the escalation of average salary differences across schools/areas is a gradual multi-year trend that has continued into the current year.

In short, these statistical facts indicate that, in general, differences in median faculty salaries between lower paying schools/areas and higher paying schools/areas have been, and continue to be, slowly increasing both in dollar amount and in percentage difference. As noted in prior SCESF reports, variability among schools/areas is no doubt a product, to a considerable extent, of market forces in the hiring of faculty members and in the relative wealth of schools (i.e., financial ability to support faculty salaries). The relative wealth of schools available for supporting faculty salaries is, in major part, a function of how much income a school is able to earn and the level of non-faculty expenditures it regards as essential—all as discussed above in the section on RCBS in SCESF's report from last year (2000).

Whether variability in faculty salary levels among schools/areas represents some degree of inequity is controversial. Some argue that it is, while others argue that it is a natural outcome of the wealth inherent in

various disciplines and professional fields that schools represent. Any effort to reduce such variability substantially by central university policy would no doubt require fundamental changes in the RCBS—a system that has become well entrenched during the past three decades.

If the wide difference among schools/areas in median salaries of full professors seen at Penn is a general phenomenon at other universities as well, there will be evidence that Penn is experiencing a general market phenomenon instead of a local idiosyncrasy. To test this possibility, we analyzed 1999-00 data from the MIT Salary Survey for 12 universities<sup>18</sup> which reported salary means for full professors for all five academic areas (architecture, engineering, natural sciences, social sciences/humanities, and management). For each of these 12 universities, we computed the ratio of the mean salary of the highest paying area to the mean salary of the lowest paying area. The result was that these 12 ratios ranged from a low of 1.32 to a high of 2.05, with a mean of 1.59—indicating that wide variation in mean faculty salaries across academic areas is common and substantial. Penn's ratio in the MIT data was virtually the same (1.64) as the mean of the 12 universities. This suggests that the variability in mean faculty salaries across schools/areas at Penn is currently in line with experience elsewhere, and is a function of general economic forces affecting all of academia.

To determine whether there has been a general trend over time in other universities toward greater variability of mean faculty salaries across five academic areas, we computed for 1996-97 the same ratios of the highest to the lowest mean salaries by the same method described above for 1999-00 mean salaries. The mean ratio in 1996-97 (1.52) was clearly lower than in 1999-00 (1.59), thereby suggesting there is a general trend over time toward increasing differences across schools in mean faculty salaries. Penn is perfectly in line with this apparent general trend.

## VI. Conclusions

### A. Economic Status of the Faculty

**1. External Competitiveness.** In general, faculty salaries at Penn continue to be competitive with a small select group of universities that provide the highest levels of faculty compensation in the nation. Evidence for this conclusion comes from the following sources:

- The results of the annual MIT salary survey of 24 major research universities (about half private, half public) place the weighted mean salaries of Penn full, associate, and assistant professors (from SAS, SEAS, GSFA, and Wharton, combined) clearly above the mean of their respective academic fields as of Fall 2000.
- The results of annual surveys of faculty salaries in dental medicine, nursing, and veterinary medicine suggest that the mean salary levels in Penn's School of Veterinary Medicine, School of Nursing, and School of Dental Medicine are in the upper echelons of their respective fields.
- The results of the annual AAUP salary survey for a group of 17 peer research universities place the mean salary of Penn full professors in rank order five as of academic year 2000-01. The highest mean salary in this group (at Harvard University) is 12% higher than the Penn mean (Table 5).

**2. Internal Variability.** There is great variability in the distribution of faculty salary resources among the three professorial ranks (see Table 9), among the thirteen schools/areas included in this report (see Table 10), and among individual faculty members by rank within schools (see Tables 6, 7, and 8). Furthermore, a considerable portion of the variability in average faculty salaries across Penn's schools/areas is the product of market forces as suggested by the results of a comparison of school mean differences at Penn with differences at peer universities. That is, considerable variability in average faculty salaries among these schools/areas is required to maintain competitive standings within different academic fields.

<sup>18</sup> The sample of 12 universities analyzed was selected from the following group of 13: Carnegie Mellon University, Columbia University, Cornell University, Georgia Institute of Technology, Massachusetts Institute of Technology, Rice University, University of California (Berkeley), University of California (Los Angeles), University of Illinois, University of Michigan, University of Pennsylvania, University of Texas, and Yale University. One of these universities was eliminated from the analysis because of apparently erroneous data, though its identity is not known because of the blind coding of the data.

**Table 10**  
**Variability of academic base salary levels among schools/areas<sup>a</sup>: First, second, and third quartile median salary levels by rank and year**

Rank	Academic Year	Quartiles <sup>b</sup> of Median School Salaries			ICR <sup>b</sup>	Ratio: IQR to Median <sup>c</sup>	Number of Areas
		Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>			
Full Prof.	1998-99	\$92.4K	\$ 99.9K	\$114.6K	\$22.2	.22	13
	1999-00	\$95.1K	\$103.7K	\$122.0K	\$26.9	.26	13
	2000-01	\$98.2K	\$111.8K	\$125.1K	\$26.9	.24	13
Assoc. Prof.	1998-99	\$60.4K	\$73.0K	\$82.5K	\$22.1	.30	12
	1999-00	\$63.7K	\$76.7K	\$88.4K	\$24.7	.32	12
	2000-01	\$64.2K	\$79.1K	\$91.1K	\$26.9	.34	12
Assis. Prof.	1998-99	\$49.3K	\$52.1K	\$68.3K	\$19.0	.36	12
	1999-00	\$51.6K	\$54.3K	\$71.0K	\$19.4	.36	12
	2000-01	\$53.5K	\$59.0K	\$73.9K	\$20.4	.35	12

**Note:** Median academic base salary levels for Penn's schools/areas are based on standing faculty members who continued in the same rank from FY 1998 to FY 1999 (the 1998-99 data), from FY 1999 to FY 2000, and from FY 2000 to FY 2001. Excluded were all members of the Faculty of Medicine, all Clinician Educators from four other schools (Dental Medicine, Veterinary Medicine, Nursing, and Social Work) that have such positions, and faculty members who were promoted effective for each year reported.

<sup>a</sup>The 13 schools/areas used for this analysis at the full professor level are the same as those listed in Table 3. The number of schools used at the associate and assistant professor levels was slightly less because the numbers of faculty members within these ranks was very low for a few schools.

<sup>b</sup>Variability of median salary levels among schools/areas is reported by quartile. At the lower end of the median salary level distribution, 25% of the median salary levels of all schools/areas were below the first quartile (Q<sub>1</sub>), while the other 75% were above. In the middle, 50% of the median salary levels of all schools/areas were below the second quartile (Q<sub>2</sub>, also called the median), while the other 50% were above. At the upper end, 75% of median salary levels of all schools were below the third quartile (Q<sub>3</sub>), while the other 25% were above. Using Q<sub>3</sub> and Q<sub>1</sub>, a measure of variability of school median salaries termed the interquartile range (IQR) is then computed by subtracting the lower quartile salary (Q<sub>1</sub>) from the upper quartile salary (Q<sub>3</sub>).

<sup>c</sup>This is a ratio of (a) the variability of school median salaries (i.e., the ICR) to (b) the average of these school median salaries. With this ratio, it is possible to make meaningful comparisons across years, and across professorial ranks, in the variability of salaries. The IQR is divided by the median salary (Q<sub>2</sub>), thereby indexing the variability to the general level of salaries and making comparisons of variability more meaningful.

## B. Conditions of Concern

**1. External Competitiveness.** Although Penn faculty salaries are *generally* competitive with those provided by a select group of universities (as noted above), the following *particular* conditions are of concern about the external competitiveness of faculty salaries at Penn:

- As indicated in SCESF's 1999 Annual Report (see Section VI, Recommendation A.2), Penn is committed to bringing faculty salaries back to a competitive level "if faculty salaries in certain fields begin to fall behind." For academic fields for which specific competitive data are available from the MIT salary survey, it appears that Penn, at least in practice, has established in recent years a competitive level in the 65-70th percentile range. If so, mean faculty salaries for FY 2000-01 at the full professor ranks in the natural sciences area of the School of Arts and Sciences and the School of Engineering and Applied Sciences have clearly fallen behind (though the competitiveness of both have improved since FY 1999-00), as have associate professor salaries in the natural sciences and in engineering, and assistant professor salaries especially in GSFA and engineering. Accordingly, there is concern about the mean salaries in these areas that have fallen behind Penn's presumed competitive level.

- Not only have the salary levels in certain academic areas lagged behind Penn's usual competitive level (as reviewed above), but Penn has experienced a general decline during the past four years in the competitiveness of assistant professor salaries in all academic fields covered by the MIT survey except Wharton (which has achieved noticeable improvement). The competitiveness of the mean salaries of Penn full professors have noticeably declined in the natural sciences and social sciences/humanities. (By contrast, the mean associate professor salaries in the social science/humanities and the natural science has improved considerably during this recent four-year period.) Through analyses of trends in salary increase percentaged during the past four years, it is clear that Penn has generally improved the mean salary increase percentages awarded to faculty members since 1996-97. Therefore, the explanation for the declines observed in Penn's competitiveness is that our peer universities have increased faculty salaries at an even higher rate than Penn.

- SCESF continues to be concerned about the unavailability of data to make a judgment about the competitive level of average faculty salaries in each of the Penn's four schools (Communications, Education, Law, Social Work) that are not included in the MIT salary survey or in surveys for dental medicine, nursing, and veterinary medicine. As noted below (see Section VII, Recommendation 4), the Provost will continue to attempt to secure comparative salary data for the now four schools in question.

**2. Internal Equity.** In the absence of data on individual faculty merit to compare with data on individual faculty salaries, SCESF is not able to identify any specific instance of inequity among all the dimensions of salary variability included in this report. However, there is concern that some of the wide variability in individual faculty salaries may entail more than a trivial element of inequity. Though we are not able to report specific instances of salary inequity among individual faculty members, ranks, departments, or schools, SCESF has identified the following conditions that give rise to equity concerns:

- In spite of moderate inflation in FY 2000 (CPI growth in Philadelphia of 2.6%) and substantial resources available for faculty salary increases for FY 2001 (5.9% in the aggregate across schools/areas and ranks), 8% of Penn's standing faculty members received salary increases for FY 2001 that were less than the CPI growth percentage—an effective reduction in salary. Nonetheless, the percentage of faculty members receiving salary increases less than growth in the CPI (Phil.) has remained reasonably stable (this percentage was 9% for FY 2000 and only 7% for FY 1999). Over 10% of faculty members in four schools/areas received increases less than the CPI growth percentage (see Table 2). Two main alternative explanations for these percentages are: that over 10% of the faculty in these schools/areas performed at an unsatisfactory level, or that some of these effective salary reductions may have been inequitable.

- In spite of modest inflation since FY 1994 and substantial resources for faculty salary increases, only 87% of full professors in the natural sciences area of SAS and 93% of full professors in the social sciences area of SAS and in the School of Engineering and Applied Sciences received cumulative salary increases during the period 1995-2001 that exceeded the growth in the

Philadelphia CPI (see Table 3). Fortunately, considerably higher percentages of full professors in other schools/areas received cumulative salary increases that exceeding CPI growth during this six year period. Therefore, it seems possible that some of the effective salary reductions experienced by full professors in the natural and social sciences and in engineering were inequitable.

- Aggregate salary increases of 5.9% were awarded for FY 2001 to continuing Penn standing faculty members, a figure much higher than the general 3.5% salary increase guideline. Nonetheless, the median increases for full professors in all three areas of SAS were below the 3.5% guideline. This occurred in FY 2000 as well, though some improvement is seen from FY 2000 to FY 2001 in this respect. There is concern about salaries of most faculty members in these areas lagging behind a competitive level with implications for collective inequity.

## VII. Status of Committee Recommendations Submitted in 1999-2000

In accordance with Faculty Senate policy, a report is presented below of progress made, and current status of, recommendations made in FY 1999-2000 for development of faculty compensation policy and procedures. These recommendations are presented below along with the responses of Provost Barchi (to whom the recommendations were made on February 8, 2001), SCESF's comments, and subsequent developments. In addition, a separate section is presented on "Resolved Salary Policy Issues" from prior years.

### A. FY 1999-2000 Faculty Salary Policy Issues

#### General Principles

##### 1. Salary Competitiveness Issue

The need to attain and maintain faculty salary levels that are highly competitive with salaries provided by peer universities, while simultaneously sustaining other components of university operations essential to providing high quality instruction, research, and service.

##### SCESF Recommendations:

a. Apparently, mean faculty salaries in several academic fields included in the MIT Salary Survey have fallen behind the level at which Penn ordinarily competes. These areas are:

- (1) Full professors in:
  - (a) the natural sciences area of SAS, and
  - (c) SEAS
- (2) Associate professors in:
  - (a) the natural sciences area of SAS, and
  - (b) SEAS
- (3) Assistant professors in:
  - (a) the social sciences/humanities area of SAS,
  - (b) SEAS, and
  - (c) GSFA.

If these seven faculty groups are as meritorious, on the whole, as comparable faculty groups at Penn with more competitive mean salary levels, it is recommended that priority be placed on increasing mean salaries to Penn's competitive level of the groups that have fallen behind.

**Provost's Response:** The Provost concurs with this recommendation, and will take it under consideration with relevant Deans at the time of budget reviews because faculty salary setting is determined at the school level.

**Subsequent Developments:** The Provost has brought this recommendation up with relevant Deans. Salary levels that have fallen behind Penn's competitive level are being addressed, and improvements in a number of areas should be seen in future years.

b. Even though priority should be placed on regaining Penn's competitive level in the academic fields identified above, it is recommended that equal priority be given to recognizing in advance and rewarding with salary increases distinguished performance of faculty members who choose not to seek, or use, attractive offers of external appointment to negotiate salary increases.

**Provost's Response:** The Provost is supportive of this recommendation.

**Subsequent Developments:** The Provost reviewed this recommendation with the Deans, and Deans will endeavor to address this concern.

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## 2. Salary Equity Issue

The need to identify and eliminate inequity among individual faculty salaries by rank within departments (and schools organized as single departments).

**SCESF Comment:** As reviewed in SCESF's *Annual Report* for 2000, a considerable percentage of faculty members (9%) received salary increases for FY 2000 that were below the growth in the CPI (Phil.) for the 12 months ending June 1999. Moreover, this percentage was higher than in the prior year (7%). Consistent with this higher percentage was a general decline across schools in the first quartile salary increase for full and associate professors from 1997-98 to 1998-99 and 1999-00. It thus appears likely that some faculty members who have performed at least at a satisfactory level have received salary increases less than growth in the CPI. If so, this represents an effective reduction in salary in terms of purchasing power—a circumstance that is clearly inequitable given that the overall salary increase percentage for each school was well in excess of the growth in the CPI.

### SCESF Recommendations:

a. In view of the quantitative facts identified above, it is recommended that further consideration be given by the Provost and the Deans to eliminating, or decreasing in frequency, the assumed inequitable practice of awarding salary increases below the annual growth in the CPI (Phil.) to faculty members who have performed at least at a satisfactory level. In making this recommendation, we realize that the feasibility of awarding increases to faculty members with satisfactory performance at least as great as growth in the CPI depends on the difference between funds available for salary increases and the CPI growth percentage—with the larger the positive difference, the greater the feasibility of providing salary increases of at least the CPI growth percentage.

**Provost's Response:** As a general principle considered over a period of years, the Provost and the Committee agree that faculty members, who perform consistently at least at a satisfactory level, should receive cumulative salary increases that are not less than the percentage growth in the CPI (Phil.). However, it is recognized that this might not always be possible fiscally, such as (a) when CPI growth is high in relation to funds available for salary increases, and (b) in small departments especially that have insufficient funds to respond to various legitimate demands for salary increases such as meeting outside offers and providing for promotional increments.

**Subsequent Developments:** The Provost reviewed this recommendation with the Deans along with the responsibility of Deans to address salary equity issues. In addition, information will be provided to faculty members from time-to-time about cumulative salary increases over a period of years in comparison with cumulative growth in the CPI (Phil.).

b. Therefore it is further recommended that, for each faculty member who has performed at least at a satisfactory level during the prior year but who is awarded a salary increase that is less than the most recent data available about the annual percentage growth in the Philadelphia CPI (e.g., from January through December of the prior year), the faculty member should be provided by the relevant academic administrator with

- (1) that his/her performance has been at least satisfactory, and
- (2) the circumstances that caused the percentage increase below the CPI growth percentage.

**Provost's Response:** The Provost concurs in this recommendation.

**SCESF Comment:** The Committee hopes that this recommendation will be implemented for salary increases decided during the Spring Term 2001, and that, as may be appropriate, this information will be provided to individual faculty members about their performance at the time each is notified of their annual salary increase. (See Recommendation 4 pertaining to this matter under the "Resolved Salary Policy Issues" section of this document.)

**Subsequent Developments:** The Provost reviewed this recommendation with the Deans, and Deans will endeavor to provide the recommended information annually to faculty members affected as part of the annual information provided at the time of salary increases (see Item 4 of the section of this document entitled "Resolved Salary Policy Issues"). In the future, the wording of this Item 4 will be expanded to incorporate the information specified above in the current recommendation (Item 2.b.).

## 3. Salary Equity Issue

The need to identify and eliminate inequity among individual faculty salaries by rank within departments (and schools organized as single departments).

a. **SCESF Recommendation** (Advanced in 1999, and accepted):

It is recommended that a set of principles and procedures be established whereby all individual faculty salary levels (and related information about academic merit) are reviewed periodically by senior academic administrators (Department Chairs, Deans, and the Provost) for the purposes of identifying salaries that are inequitably low or high, and of taking corrective action.

**Provost's Response:** The Provost responded that his office currently has in place a mechanism that can identify faculty salaries that are very high or very low. Once identified, the names of those faculty are sent to the deans for justification and adjustment as necessary. The deans then provide the Provost with information on justification and adjustment.

**SCESF Comment:** As indicated in the recommendation, special salary reviews for possible instances of inequity can occur at all salary levels, and individual salary levels can be either inequitably high or low. SCESF hoped that the next review could be structured accordingly, even though it is a demanding task, and that considerable progress could be accomplished by March 2000 so that, if justified and financially feasible, appropriate salary adjustments could be awarded effective July 1, 2000. We realize that in the instance of an inequitably high salary level that no absolute downward adjustment can be made. However, it is possible to moderate annual increments to such salaries over a period of years so that the appropriate level can be attained.

**Subsequent Developments:** It is the practice of the Office of the Provost to make such a review every five years, the next time for which will be no later than the Fall Term of FY 2002. It is planned that this salary review will be conducted during the Summer and Fall of CY 2001.

b. **SCESF Recommendation** (new for 2000):

Each time a salary review is initiated for the purposes of identifying inequitable salary levels of individual faculty members, it is recommended:

- (1) That one criterion for identifying a potentially inequitable individual salary level is a cumulative percentage salary increase during the previous five-year period less than the cumulative percentage growth in the Consumer Price Index (Philadelphia) during the same five-year period,
- (2) That, for an individual faculty member identified as having a cumulative five-year salary increase below the CPI growth, the circumstances leading to this condition be determined, and,
- (3) That, unless the performance of such a faculty member is judged to have been less than satisfactory, this information be taken into account in considering an upward equity adjustment in salary.

**Provost's Response:** The Provost concurs, in principle, with this recommendation, and will inquire into the feasibility of developing the data needed to implement the recommendation.

**Subsequent Developments:** The Office of the Provost will attempt to implement this recommendation during the salary review to be performed during the Summer and Fall of CY 2001.

### Procedures

#### 4. Issue Concerning Data on the Competitiveness of Faculty Salaries not Included in the MIT Survey

The need to seek, or compile, evidence about the competitiveness of faculty salaries at schools not included in the MIT survey.

**SCESF Recommendation:**

In accordance with the agreement with the Interim Provost in 1998 and the Provost in 1999, it is recommended that the Provost continue his efforts to secure data on the competitiveness of faculty salaries in Penn's schools not included in the MIT Salary Survey or the surveys for veterinary medicine and dental medicine.

**Provost's Response:** The Provost is agreeable to continuing efforts to secure the external salary data recommended.

**Subsequent Developments:** As requested by SCESF, it is anticipated that both external comparative salary data and internal comparative salary data for faculty members appointed to the basic science departments of the School of Medicine will be provided for incorporation in the FY 2001 Annual Report, or by FY 2002 at the latest. The Provost is agreeable to making continuing efforts to secure external comparative salary data for Annenberg, Graduate Education, Law, Nursing, and Social Work.

##### 5. *Issue Concerning Information about Prior Faculty Salary Increases for Informing Department Heads.*

In the interest of promoting salary equity, the need to establish a routine method for informing department heads each year, before salary increases are decided, about salary increase trends during prior years for individual faculty members.

**a. SCESF Recommendation** (advanced in 1999, and accepted in part): It is recommended that a routine method be established whereby department heads are provided with information each year, before faculty salary increases are decided, listing the current salary, the prior year percentage increase, and five-year cumulative increase percentages for each faculty member, as classified by rank, in the department; and, for each professorial rank within the department, the 10th, 25th, 50th, 75th, and 90th percentile increases during the prior year and the five-year cumulative periods.

**Provost's Response:** The Provost accepted this recommendation.

**SCESF Comment:** We welcomed this action, and hoped that necessary programming and computer runs could be completed by March 2000 so that this quantitative information would be provided to Penn's department heads and deans by the time they reviewed faculty performance in deciding faculty salary increases for FY 2001. In addition, we hope that it will become clear that this information is useful in reviewing the faculty salary structure and the history of past increases with a view to reducing any incidence of inequitable components of faculty salaries.

**Subsequent Developments:** Though the Provost agrees that department chairs should have salary data when making recommendations about raises, he has reservations about providing department chairs with the level of detailed salary information recommended here. After consultation with the Council of Deans, the Provost accepts the first part of the recommendation pertaining to information about salary history for individual faculty members, subject to revising the provision concerning the reporting to department chairs of five-year cumulative increases to three years. However, the Provost does not accept the second part of the recommendations pertaining to information about departmental norms for salary increases because of the computational burden such calculations would require.

**b. SCESF Recommendation** (new for 2000):

In addition to providing department heads with salary increase history information for individual faculty members before annual salary increases are awarded (prior year increase percentage and cumulative three-year percentage increase), it is recommended:

(1) That department heads be simultaneously provided with information about the percentage growth in the Consumer Price Index (Philadelphia) for the prior calendar year (i.e., January through December) and the cumulative percentage growth for the prior three calendar years,

(2) That, for an individual faculty member identified as having received a salary increase less than the CPI (Phil.) growth in either the prior year or the prior three years, the circumstances leading to this condition be determined, and,

(3) That, unless the performance of such a faculty member is judged to have been less than satisfactory, this information be taken into account in considering an upward equity adjustment in salary.

**Provost's Response:** The Provost concurs with this recommendation, and will take steps to assure that CPI (Phil.) growth data are provided annually to department heads along with the faculty salary increase history data.

**Subsequent Developments:** The CPI (Phil.) and salary increase data have been computed and provided to department heads, as recommended, with the expectation that these data will be used in considering salary increases for FY 2002.

##### 6. *Salary Setting Standards and Procedures Issue*

The need to use objective salary setting standards and procedures that minimize the potential for emergence of inequity among individual faculty salaries within departments and ranks

**SCESF Recommendation** (1999):

It is recommended that the initiatives commenced during the AY 1999-00 in response to this issue be continued and brought to completion in AY 2000-01. Specifically, it is recommended that (a) a study of faculty salary setting principles and procedures used by each school be completed, and, if the results so indicate, (b) best practices in salary setting be identified,

and (c) a model set of standards and procedures be developed for possible adoption or adaptation by individual schools.

**SCESF Comment:** We welcomed this action, and hoped that the task could be completed by March 2000 so that information about "best practices" could be available to academic administrators prior to the setting of faculty salary increases for FY 2001.

**Subsequent Developments:** In consultation with the SCESF Chair, the Associate Provost developed and sent questionnaire to Deans for relevant information. The results have been turned over to a subcommittee of SCESF for review and analysis. To date, this analysis has not been completed by SCESF because of attention to higher priority issues.

## B. Resolved Salary Policy Issues

### General Principles

#### 1. *Salary Competitiveness Issue.*

The need to attain and maintain faculty salary levels that are highly competitive with salaries provided by peer universities, while simultaneously sustaining other components of university operations essential to providing high quality instruction, research, and service.

**SCESF Recommendation** (1998):

Penn should be committed to maintaining faculty compensation at a highly competitive level in comparison with peer universities as part of its efforts to attract and retain highly distinguished scholars for each of its Faculties.

**Interim Provost's Response:** The Interim Provost certainly accepted the recommendation at least to maintain Penn's current (i.e., AY 1997-98) competitive level of faculty salaries.

**SCESF Recommendation 1.b.** (1999):

Although AAUP data on aggregated compensation (i.e., the sum of salary and benefits) of full professors across Penn's eleven schools (excluding Medicine) indicate that Penn is very competitive with peer universities, the AAUP data do not reveal Penn's comparative salary levels within particular academic fields and ranks where the competition for distinguished faculty members actually occurs. According to data from the MIT Salary Survey which provides specific information about the competitiveness of salaries by professorial rank for four of Penn's schools (Arts and Sciences, Graduate Fine Arts, Engineering, and Wharton), Penn's salary levels overall in all three professorial ranks were about 12% below those offered by the university ranked second in their respective academic fields. It is recommended that efforts be made over a period of a few years to reduce this difference in order to improve Penn's capacity for attracting and retaining distinguished faculty members.

**Provost's Response:** Although the Provost does not support any across-the-board increases in faculty salary levels, he does support the aggressive use of salary funds to recruit and retain distinguished faculty members, the consequence of which might well be to raise average faculty salaries. The Provost noted that special attention should be placed on identifying and rewarding (with salary increases) Penn's most promising assistant and associate professors.

**SCESF Comment:** We endorse the Provost's strategy in using salary resources to improve the quality of Penn's faculty, and advocate that this be implemented aggressively so that the actual competitiveness of average faculty salaries (within ranks by academic field) is increased substantially over a period of several years. As stated by the Provost, we note that this strategy has two purposes with respect to distinguished faculty members: to recruit and to retain. As to *retention*, we understand that both the Provost and the Committee recognize this to be multifaceted:

- One facet of retention is to be competitive with salary increases for faculty members who assert entrepreneurial initiative and secure attractive offers of appointment elsewhere.

- A second facet of retention is to recognize in advance and reward with salary increases distinguished performance of faculty members who choose not to seek, or use, attractive offers of external appointment to negotiate salary increases.

- A third facet of retention is to maintain an overall competitive faculty salary structure in order to promote a collegial faculty spirit and sense of general equity while still recognizing that there will be wide variation in individual faculty salaries due to differential merit. A major dimension of general equity is the realization by individual faculty members who perform at a sustained satisfactory level that, at the very least, they have

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not suffered a decline in the purchasing power of their salaries by being awarded cumulative salary increases over a period years that has been less than growth in the Philadelphia CPI.

The views expressed above do not represent advocacy for a fixed floor for salary increases since a few faculty members obviously perform at a less than a satisfactory level, nor do they represent advocacy for a general leveling of faculty salaries. As has been Penn's tradition, variability in individual faculty salaries should continue to be associated strongly with variability in individual merit.

**Subsequent Developments:** Discussions with the Associate Provost suggest that the Provost and the SCESF are in general agreement on the strategy to be used in use of salary funds to recruit and retain distinguished faculty members. However, the Provost did not accept specifically the recommendation to improve Penn's competitive position with respect to salaries, though that might be a byproduct of his strategy for the aggressive use of salary funds. This recommendation is not pursued further at this time because, based on new MIT Salary Survey data for the Fall Term 1999, it appears that there has a general decline in three schools (SAS, SEAS, and GSFA, with Wharton being the major exception) in salary competitiveness since 1996-97. In the judgment of SCESF, it is now of higher priority to regain Penn's competitive level in these academic fields than to continue to seek a broader improvement in competitiveness.

## 2. Issue Concerning Disparities Among Schools in Average Faculty Salaries

The desire to moderate the disparities in average faculty salaries by rank among Penn's several schools, while simultaneously insuring that salary levels for each school are highly competitive with salary levels provided in the same academic/professional field at peer universities.

### SCESF Recommendation (1999):

It is recommended that the disparities among schools in average faculty salaries be studied further by Penn's administration and the SCESF to ascertain its causes, and to identify means by which at least some of the largest disparities in average faculty salaries among schools can be moderated.

**Provost's Response:** The Provost indicated that he would continue to review the causes of disparities in average faculty salaries among schools. However, it is not possible to use the subvention pool to address such disparities because the subvention pool is relatively small and also because subvention dollars must cover items in schools' budgets in addition to faculty salaries. He also observed that disparities among schools are in large part due to market forces and schools' budgets.

**SCESF Comment:** We are encouraged that the Provost will continue to review the causes of disparities in average faculty salaries as recommended, and hope that income-expenditure relationships for schools offering lower average salary levels can be changed over time in order to provide for larger faculty salary increases that will improve, even marginally, their relative standing with schools offering higher average salary levels. If possible, this will reduce somewhat the wide and increasing salary level differences among schools as recommended.

**Subsequent Developments:** The Provost has continued to review disparities in average faculty salaries among schools, and has found that such disparities can be accounted for by market forces, differences in the wealth of schools, and in priorities for the allocation of school funds to faculty salaries versus other types of expenditures. For its part, as seen in Section V. D. of SCESF's 2000 Annual Report, the SCESF has compared the difference between the highest and lowest mean salaries for full professors across the five academic areas of the MIT Salary Survey, and found that the difference at Penn is equivalent to the mean discrepancy for the sample of 12 universities for which supplied sufficient data for this type of analysis. Thus, Penn clearly is in line with a general trend elsewhere.

## 3. Comprehensive Policy for Faculty Compensation Issue

The need to establish and maintain a comprehensive policy for faculty compensation which assures, among many considerations, principles and procedures to maintain salary equity, and a stable, or increasing, level of compensation whenever the structure of the benefits package is under redesign.

### SCESF Recommendation (1999):

As advised by the Interim Provost in 1998, it is recommended that consideration should be given to developing a comprehensive policy for faculty compensation on the next occasion of salary or benefits redesign.

**Provost's Response:** This recommendation was not considered at the meeting on June 23, 1999.

**SCESF Comment:** Since this recommendation was accepted in 1998, its implementation awaits the occasion of the next round of salary or benefits redesign.

## Procedures

**4. Issue Concerning Information for Individual Faculty Members About Annual Salary Increases.** In the interest of improving faculty merit, the need for each faculty member to receive specific information annually about the assessment of her/his performance made by the relevant department head or dean in deciding his/her salary increase for the following year.

### SCESF Recommendation (1999):

As advocated by the Interim Provost in 1998, it is recommended that a procedure be established whereby each faculty member is provided with specific information annually about the assessment of her/his performance made by the relevant department head or dean in deciding his/her salary increase for the following year.

**Provost's Response:** The Provost accepted this recommendation.

**SCESF Comment:** We welcomed this action, and hoped that the practice of providing individual faculty members with specific information annually about her/his performance in deciding his/her salary increase would be implemented in Spring 2000 for FY 2001 salary increases. In addition, some procedure should be considered to assess, in general terms, the adequacy of the information provided such as reports of faculty members about their understanding of the basis for their salary increase. We expect to find that their understanding has been substantially improved.

**Subsequent Developments:** The Provost presented this issue to the Council of Deans, and the Deans also accepted this recommendation.

## Members of the 2000-2001

### Senate Committee on the Economic Status of the Faculty

Erling E. Boe, Professor of Education, Committee Chair

Howard Goldfine, Professor of Microbiology in Medicine

Larry Gross, Professor of Communications,  
Ex-Officio, Chair, Faculty Senate

David B. Hackney, Professor of Radiology,  
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Richard E. Kihlstrom, Miller-Freedman Professor of Finance

Phoebe S. Leboy, Professor of Biochemistry in Dentistry,  
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Janice F. Madden, Professor of Sociology

Andrew Postlewaite, Professor of Economics

Lorraine Tulman, Associate Professor of Nursing