AMERICAN COLLEGE FACULTY MEMBERS, 1963

by

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INTRODUCTION

This is a report on some of the data obtained from a U.S. Office of Education (OE) survey of American college teachers conducted in the spring of 1963. Under a contract with the Resources Analysis Branch of the National Institutes of Health, NORC agreed to do an analysis of tabulations furnished by NIH from the OE study. This report is the result.

In the spring of 1963, OE sent out a six-page questionnaire to a 10 per cent sample of American college teaching faculty.[1] Included were questions on professional activities and duties, research support, earnings, occupational history and plans, educational attainment, and personal background. Since 95 per cent of the sample returned questionnaires, problems of nonresponse bias are minimal.

The sample was not designed to cover all faculty members in the United States. It was restricted to faculty members teaching at least one course during the 1962-63 academic year in a university, liberal arts college, teachers college, or technological college. Thus full-time researchers and administrators were excluded along with faculty members in junior colleges and strictly professional schools.

The purpose of this report is to provide information on college teachers in fields[2] of special interest to NIH and to other persons

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[1] For details of the sampling procedure, see U.S. Office of Education (1963).

[2] The fields included are: basic medical sciences (bacteriology, biochemistry, biophysics, microbiology, pharmacology, and physiology); other biosciences (general biology, general botany, general zoology, genetics, and other biological sciences); health (dentistry, medicine, nursing, pharmacy, and other); psychology (clinical, counseling and guidance, experimental, industrial, social, and other); social sciences (agricultural economics, anthropology, economics, history, political science, sociology, and other); and mathematics and physical sciences (chemistry, earth sciences, physics, and other). The major omissions are the humanities, education, engineering, and the nonhealth professions.

concerned with teaching, research, and staffing in medical and health-related fields. The entire OE study had 13,012 respondents, of whom 5,558 or 43 per cent were in the selected fields.

There are five chapters. Chapter I, focusing on certain characteristics of faculty members in selected science fields, provides broad profiles of the fields covered. Chapter II, dealing with professional activities, especially teaching and research, covers such matters as the time distribution of professional activities, teaching load and teaching level, research support, and research appointments. Chapter III is concerned with incomes--total, base salary, and the remainder. Chapter IV deals with the faculty members' employment histories and job mobility plans, especially for the "next" academic year and over the entire career. The fifth chapter is a general overview of the results.

Highlights of the Findings

1. The distribution of time spent on professional activities by all faculty members in the selected science fields is 57 per cent on teaching, 16 per cent on research, and 27 per cent on other activities.

2. The percentage of time spent on teaching is directly related to academic rank. Instructors are most likely to spend a substantial amount of their time teaching and professors least likely to do so. Teaching loads are highly related to academic rank; instructors have relatively heavy loads and professors relatively light ones.

3. Academic rank is not related to the proportion of time spent doing research.

4. Activities other than research or teaching, especially administration, loom largest among professors. Apparently the decline in teaching time with increasing rank is taken up by greater attention to administration.

5. Faculty members in universities have far lighter teaching loads than do those in other institutions.

6. In universities lower-ranking faculty members are likely to teach underclassmen and not graduate students. The reverse is true of

higher-ranking faculty members. In other institutions, senior faculty members tend to teach upperclassmen and junior faculty members to teach underclassmen.

7. Basic medical scientists spend the least time on teaching and have the lowest loads, the heaviest research commitments, and the greatest amount of outside research support. Social scientists are generally low on research and, along with mathematicians, high on teaching.

8. For the 1961-62 academic year, the median total income of faculty members on calendar-year appointments in the selected fields was $10,700. For academic-year faculty the median was $9,100. Base-salary medians were $9,800 and $7,800, respectively. Other income was $100 and $1,300, respectively.

9. Base salary is positively associated with academic rank.

10. Faculty members in universities are more highly paid than those in other institutions, and the pay-level difference between institutional types increases with academic rank.

11. On academic-year contracts, physical scientists and psychologists earn the most money and health professionals the least. On calendar-year contracts, faculty members in the health fields and the basic medical sciences have the highest earnings and social scientists the lowest.

12. Outside earnings generally do not eradicate the disparities noted above.

13. The major source of outside income for academic-year faculty members is summer teaching. This source is relatively minor for calendar-year faculty members. Other outside sources do not differ by contract period.

14. Prior to their current appointments, college teachers were about equally likely to have been faculty members in another institution, graduate students, or in nonacademic employment.

15. Sixteen per cent of the faculty members said they planned to change employers within one year. The association of this item with teaching field is slight. An expected job change is inversely related to academic rank.

16. Interest in a new position is greater than actual plans for a move; 40 per cent express an interest in a new job. Faculty members in psychology and the basic medical sciences show a relatively high degree of interest, and those in mathematics and health show relatively little interest.

17. More faculty members report receiving an offer or inquiry than being interested in a new job. Psychologists are most likely to receive offers and mathematicians and nonmedical bioscientists are least likely to do so.

18. Plans to remain in one's present institution until retirement are directly related to academic rank. For example, about three-fourths of the professors, compared with one-fourth of the assistant professors, had such plans.

19. Nearly all faculty members (nine in ten) plan to remain in college teaching. The only field much lower than the rest in this regard is health.

CHAPTER I

CHARACTERISTICS OF FACULTY IN SELECTED SCIENCE FIELDS

The purpose of this chapter is to describe certain characteristics of faculty members in scientific and professional health fields particularly important to the National Institutes of Health and others concerned with manpower in medical and health-related fields.[1] This chapter deals with the faculties' institutional affiliation, academic rank, professional experience, sex, and age.[2]

The sample used in this study includes 13,000 faculty members, of whom 5,600, or 43 per cent, are teaching courses of special interest to the National Institutes of Health, its training committees, and others concerned with the development of manpower to meet the nation's needs for health research and teaching. These fields are referred to throughout the report as the "selected science fields."

Table 1.1 shows that there are more faculty members in the physical sciences and biosciences than in any of the other selected science fields. They account for 20 and 18 per cent of the total, respectively.[3] About one-eighth of the faculty is in each of the following three fields: other biosciences, mathematics, and professional health fields. The smallest fields, each amounting to about 7 per cent, are the basic medical sciences and psychology.

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[1] For a list of these fields, see the Introduction.

[2] Data were not available on advanced degree attainment.

[3] More than 1,600, or 30 per cent, of the faculty were reported in the social sciences. However, it is estimated that less than one-fifth of that number were teaching sociology and anthropology, which are the social science fields of primary interest to NIH.

TABLE 1.1

PER CENT IN EACH TEACHING FIELD, U.S. TEACHING FACULTY[a]

Teaching Field	N	Per Cent	Per Cent of Selected Science Fields
Biosciences	1,022	7.9	18.4
Basic medical sciences	397	3.1	7.1
Other biosciences	625	4.8	11.3
Health	699	5.4	12.6
Psychology	362	2.8	6.5
Social sciences[b]	1,640	12.6	29.5
Mathematics	721	5.5	13.0
Physical sciences	1,114	8.6	20.0
All selected science fields	5,558	42.7	100.0
Engineering	896	6.9	
Education	1,703	13.1	
Humanities	3,307	25.4	
Agriculture	240	1.8	
All other	1,308	10.1	
Total	13,012	100.1	

[a]Figures are based on responses to the question: "What is your principal teaching field in your present position?"

[b]Sociologists and anthropologists together make up about one-fifth of all social scientists. The Office of Education's inflated breakdown for detailed fields yields an estimate of about 310 sociologists and anthropologists--roughly 240 of the former and 70 of the latter.

Table 1.2 gives the kinds of institutions employing faculty in the selected science fields. On the whole, the distribution for each field parallels that for all. Major exceptions, however, are the basic medical sciences and health, both having a marked concentration in the universities--78 per cent of the former and 88 per cent of the latter. All other

fields, including the other biosciences, cluster around the mean (55 per cent in universities), the largest remaining deviation being mathematics, with 42 per cent. Naturally enough, teachers in mathematics and the physical sciences are more likely than are other faculty members to be found in technological schools. Mathematicians are least likely to work in universities and, among teachers, most likely to be in liberal arts colleges. Owing to their concentration in universities, basic medical scientists and faculty in health are least likely to work in liberal arts or teachers colleges. On the whole, a little over one-half of the faculty members are in universities, one-third in liberal arts colleges, and one-sixth in technological schools or teachers colleges.

TABLE 1.2

TYPE OF INSTITUTION, BY TEACHING FIELD

Teaching Field	University (Per Cent)	Technological School (Per Cent)	Liberal Arts College (Per Cent)	Teachers College (Per Cent)	Total (Per Cent)	N
All selected science fields	55	5	30	10	100	5,558
Biosciences	62	1	27	10	100	1,022
Basic medical sciences	78	2	17	3	100	397
Other biosciences.	51	1	33	14	99[a]	625
Health	88	0	11	1	100	699
Psychology	50	2	38	10	100	362
Social sciences . .	48	4	36	12	100	1,640
Mathematics	42	9	35	14	100	721
Physical sciences .	47	11	33	9	100	1,114

[a]Less than 100 per cent because of rounding.

Another important characteristic of a faculty member--especially to him--is his academic rank. Does an individual's teaching field affect his chances of holding a higher rank? Certain fields do seem more favored

than others (Table 1.3). Both bioscience groups and the physical sciences were more likely to contain professors than other groups. Over one-third of the teachers in each of these fields had attained that rank (35-37 per cent, compared with 30 per cent for all selected fields). Health and mathematics, on the other hand, were the two fields in which holding a professorship was relatively uncommon. Only 20 per cent of the first and 23 per cent of the second had attained that rank.

TABLE 1.3

PER CENT IN EACH TEACHING FIELD, BY FACULTY RANK

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	Other	Total	N
All selected science fields	30	24	29	14	3	100	5,558
Biosciences	36	26	28	8	2	100	1,022
Basic medical sciences	35	30	28	5	2	100	397
Other biosciences	37	23	28	9	2	99[a]	625
Health	20	19	33	25	3	100	699
Psychology	29	29	31	8	3	100	362
Social sciences	29	25	30	13	3	100	1,640
Mathematics	23	20	31	22	4	100	721
Physical sciences	37	24	27	9	3	100	1,114

[a]Less than 100 per cent because of rounding.

Faculty members in these two fields were also least likely to be associate professors (19 and 20 per cent, compared with a mean of 24). Persons in psychology and the basic medical sciences were most likely to be associate professors--29 and 30 per cent of the members of these fields held this rank. Assistant professorships, on the other hand, were rather evenly distributed. Thus those fields with relatively few professorships had many instructors, and vice versa. About one-fourth of the mathematics and health faculty held instructorships (22 and 25 per cent) compared with

8 per cent of the bioscientists and psychologists and 9 per cent of the physical scientists.

The status structure of academia is quite different from that of the society at large or even that of a corporation. Instead of being a pyramid with a broad base and a narrow peak, it is more like the cross-section of a wall, except that the underpinnings (the instructors) are a little shaky. These data are given in Table 1.4 and are shown graphically in Chart 1.1. Except for a slight surplus of professors in universities, the distribution does not vary much by type of institution.

TABLE 1.4

PER CENT IN EACH ACADEMIC RANK, BY TYPE OF INSTITUTION

Academic Rank	University	Other	All Institutions
Professor	34	27	31
Associate professor . .	24	25	25
Assistant professor . .	29	32	30
Instructor	13	16	14
Total	100	100	100
N	3,004	2,393	5,397[a]

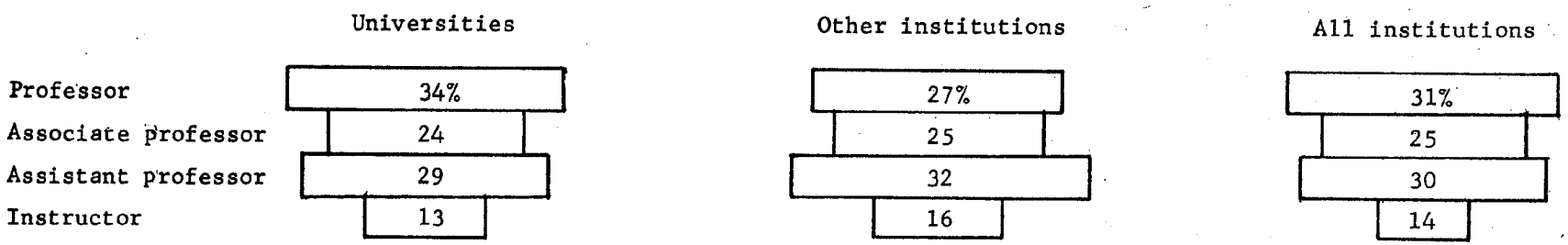
[a]Does not include 161 faculty members in other ranks or having no rank.

It varies much more widely by field, as Table 1.5 and Chart 1.2 show. Here only the two extreme fields in universities are shown. Psychology has about 10 per cent more professors and associate professors than health and about 20 per cent fewer instructors. Put another way, about one-third of the psychologists are in each of the top three ranks, with virtually none in the bottom rank. On the other hand, about one-fifth of the health faculty are professors, associate professors, or instructors, while one-third are assistant professors.

The paucity of professors in the health fields suggests one correlate of academic rank--sex. Furthermore, the relative prevalence of men

CHART 1.1

ACADEMIC RANK BY TYPE OF INSTITUTION



in various fields has important manpower implications. If women could be induced to enter some of the fields they now avoid, manpower shortages might be alleviated.[4]

TABLE 1.5

PER CENT IN EACH ACADEMIC RANK, UNIVERSITY FACULTY IN PSYCHOLOGY AND HEALTH

Academic Rank	Psychology	Health
Professor	32	22
Associate professor .	32	21
Assistant professor .	33	33
Instructor	3	24
Total	100	100
N	179	601

Confirming common observation, Table 1.6 shows that college teaching is a predominantly masculine occupation, particularly in the "hard" sciences. Of the faculty members in selected science fields, 87 per cent are men, compared with 82 per cent for the entire OE sample. The health fields are the only ones with a sizable proportion of women: slightly over one-third of the faculty in these fields.[5] The relatively high proportion of women in the health fields may help account for the preponderance of instructors in those fields. Apart from health, the percentage female ranges from a low of 5 per cent in the physical sciences to a high of 14 per cent in mathematics. The basic medical sciences are somewhat

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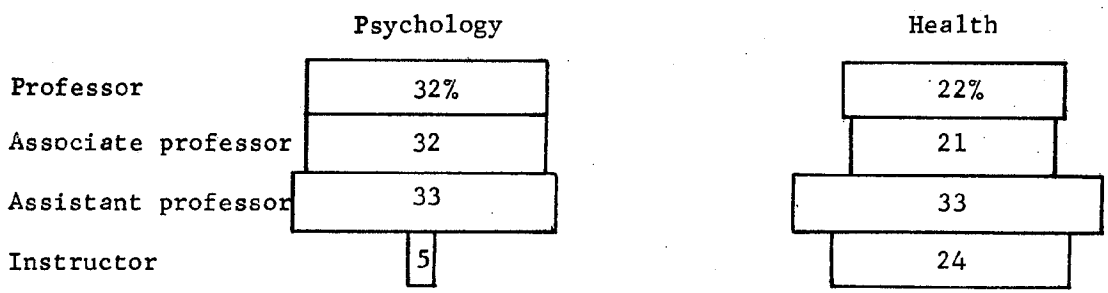
[4] If institutions of higher education would hire the women thus made available. Analysis of the characteristics of women entering predominantly male fields is now under way at NORC under the direction of Dr. Alice S. Rossi.

[5] Over one-fourth of the faculty in the health fields are in nursing, a field which is nearly 100 per cent female. With the nurses removed, the proportion of women in health is roughly 10-12 per cent, in keeping with the figures for the other fields. This figure is based on inflated tables from the Office of Education.

CHART 1.2

ACADEMIC RANK AMONG UNIVERSITY FACULTY IN PSYCHOLOGY AND HEALTH



more masculine than the mean, with 8 per cent women; the other biosciences approach the mean quite closely, with 12 per cent women.

TABLE 1.6

PER CENT IN EACH TEACHING FIELD, BY SEX

Teaching Field	Men	Women	Total	N
All selected science fields	87	13	100	5,558
Biosciences	89	11	100	1,022
Basic medical sciences .	92	8	100	397
Other biosciences	88	12	100	625
Health	65	35	100	699
Psychology	87	13	100	362
Social sciences	90	10	100	1,640
Mathematics	86	14	100	721
Physical sciences	95	5	100	1,114

Age is another factor of particular manpower significance, and, of course, it is related to academic rank. A field in which many teachers are approaching retirement faces undersupply in the near future, just as one with few younger people does in the long run. Actually, as Table 1.7 shows, most selected science fields differ very little from each other in their age distributions. Exceptions are the other biosciences, which have relatively few younger men (23 per cent) compared with the mean of 28 per cent. The basic medical sciences seem to be in rather good shape as far as age is concerned, with 2 per cent fewer of the youngest men than the mean, a 5 per cent surplus of personnel in the thirty-six to forty-five age group, and a 3 per cent deficit in the oldest group. The mathematicians are the youngest field, 35 per cent being thirty-five or younger. The excess of individuals in the youngest category is more than made up by a deficit in the next age group (thirty-six to forty-five). The mathematicians were fortunate in that they had compensated for an apparent undersupply of younger men which had existed ten years earlier.

Interestingly enough, there is no readily discernible relation between the age and rank distributions of the selected science fields, as

can be seen by a comparison of Tables 1.2 and 1.7. One would expect fields with a preponderance of older individuals to have a high proportion of senior faculty, but, if anything, the opposite is the case. (This is no reason for concluding that age and rank are unrelated within fields, however).

TABLE 1.7

PER CENT IN EACH TEACHING FIELD, BY AGE

Teaching Field	35 and Under	36-45	46-55	56 and Over	Total	N
All selected science fields	28	36	21	15	100	5,558
Biosciences	24	38	23	15	100	1,022
Basic medical sciences	26	41	21	12	100	397
Other biosciences.	23	36	24	17	100	625
Health	27	44	20	9	100	699
Psychology	25	43	18	14	100	362
Social sciences . .	28	35	20	17	100	1,640
Mathematics	35	26	21	18	100	721
Physical sciences .	30	34	20	16	100	1,114

Table 1.8 gives data on a subject closely related to age--professional experience.[6] The grouping of responses in Table 1.8 was chosen because it divided members of the selected fields into three equal categories. Faculty in the least experienced category, with less than ten years' experience, make up two quite distinct groups: (a) both bioscience groupings, the health fields, and the physical sciences--all with relatively few inexperienced members; and (b) psychology, mathematics, and the social sciences, with more of the less experienced people. At the other end of

[6]The data were taken from responses to the question: "How many years of experience prior to this year have you had doing each of the following? Round to the nearest year. If none, put '0.' a. Total years of professional experience."

the scale, the other biosciences, mathematics, and the physical sciences have the largest number of experienced members, while health, psychology, and the social sciences have the smallest. Differences between the fields are not great, and it would be hard to say that any of the fields is particularly well or badly off in the amount of professional experience accrued by its members.

TABLE 1.8

PER CENT IN EACH TEACHING FIELD, BY PROFESSIONAL EXPERIENCE

Teaching Field	9 Years or Less	10-19 Years	20 Years or More	Total	N
All selected science fields	34	33	33	100	5,558
Biosciences	31	33	36	100	1,022
Basic medical sciences	31	36	33	100	397
Other biosciences . .	31	31	38	100	625
Health	31	41	28	100	699
Psychology	35	36	29	100	362
Social sciences	36	33	31	100	1,640
Mathematics	37	28	35	100	721
Physical sciences . . .	32	30	38	100	1,114

The purpose of this chapter has been to provide some factual background for the data to be presented in the next three chapters. To that end, certain characteristics of faculty members were related to teaching field, providing a short profile of faculty in each of the broad fields discussed. The following paragraphs summarize the findings for each field.

Basic medical sciences.--These fields are 7 per cent of all selected fields and 3 per cent of all teaching faculty. Members tend to be concentrated in universities and to be of moderately high academic rank. They are more likely than the faculty in most fields to be male. The basic medical sciences tend to approach the mean of all selected science fields in age distribution and amount of professional experience.

Other biosciences.--Comprising 11 per cent of the faculty in the selected science fields and 5 per cent of all faculty, this branch of the biosciences is as similar to the average as it is to the basic medical fields. It has proportionally more professors than any other field and is about average in its percentage of male faculty members. With more members aged forty-six or older than any other field, it also leads in the proportion having twenty or more years of professional experience.

Health professions.--These fields make up 13 per cent of all selected science fields and 5 per cent of the total. Members of health fields are most likely of all to be found in universities and consequently are least likely to work in liberal arts or teachers colleges. They have the fewest senior faculty members and the most women (35 per cent). The health fields have the highest percentage of young faculty and the lowest percentage with twenty or more years of professional experience.

Psychology.--Psychology comprises 7 per cent of the science fields and 3 per cent of all. Psychologists are more likely than others to be found in liberal arts colleges, but they are not the least likely to be in universities. Except for a scarcity of instructors, they approximate the mean in the distributions of academic rank and of sex. Psychologists are slightly younger than the mean and have the second fewest members with at least twenty years of experience.

Social sciences.--Members of all social science fields constitute 30 per cent of the science total and 13 per cent of all faculty. There are slightly more social scientists than average in liberal arts colleges and slightly fewer in universities. The distribution of academic rank parallels that for the total. Social scientists are somewhat more likely than average to be male. About average as far as age is concerned, these fields have somewhat fewer members with twenty or more years' experience.

Mathematics.--This field makes up 13 per cent of all selected science fields and 6 per cent of all. Mathematics is the field with the smallest percentage of faculty in universities and the next largest in technical colleges. It has the second lowest percentage of senior faculty members. Mathematics has about the same percentage male as the mean, and a relative concentration of younger faculty; but the distribution of professional experience is similar to that of all selected science fields.

Physical sciences.--These fields comprise 20 per cent of all the science fields and 9 per cent of the total. As one might expect, physical scientists are more likely to be in technological colleges than are members of any other field. There are relatively more professors and fewer instructors. Physical scientists are more likely to be male than any of the other selected fields. While they are about average in age, they tend to be slightly more experienced than the average.

With this factual information in mind, we are now in a position to turn to the more detailed analyses in the next three chapters. Chapter II will be concerned with the activities of faculty in the various scientific and health fields, with particular emphasis on teaching and research. Chapter III will deal with income from institutional and outside sources, and Chapter IV will discuss several aspects of professional mobility.

CHAPTER II

PROFESSIONAL ACTIVITIES

The relation of teaching and research has vexed American higher education nearly from the day that the first university opened its doors. Are these two basic activities conflicting or complementary? Does doing research contribute to a person's effectiveness as a teacher? Or is research a parasitic activity that draws a man away from his major function? These questions still persist despite their long history.[1]

Underlying these questions are theories--or at least opinions--about the proper function of higher educational institutions, universities in particular. Are universities primarily creators of new knowledge or storehouses and transmitters of old? Education leading to the Ph.D. reinforces the first alternative, as does the academic reward system.[2] The slogan for success in academia is publish or perish, not teach or perish.

This controversy is a perennial one, with deep roots in the past, and recent developments have perhaps made it of particular relevance. Before World War II the road to advancement was paved by publications, just as today, but the conditions have changed. At that time it was necessary to make an academic career by research but difficult to make a career of research. The growth and federal support of big science[3] have made it far easier to do research, if not always to publish one's results.

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[1] For a concise history of this issue, see Berelson (1960, pp. 6-42).

[2] "If there has been one dominant call to reform made to the graduate schools from the start, it has been to give more explicit attention to the preparation of college teachers. If there has been one dominant objective at the graduate level, it has been research and training for research" (Berelson, 1960, p. 40).

[3] See especially Price (1954), Kidd (1959), Orlans (1962), Price (1963), and U.S. House Committee on Government Operations (1965).

The Office of Education data cannot answer the major questions posed by this controversy. In fact, it seems clear that nothing can. Since it seems impossible to reach consensus on these issues, mere data are unlikely to help.

Still, the data do provide factual answers to certain questions pertaining to the place of research in the academic world. How much of their professional time do faculty members spend on research? Is it a perquisite of academic rank? How widespread is support for research, particularly from the federal government? How heavy are teaching loads and how are they distributed? In what fields do faculty members carry on the most research, and in which do they do the least?

Before we actually turn to these questions, however, we should briefly describe the strategy of analysis to be followed throughout the rest of this report. Since the tables for the analysis were run off at NIH rather than at NORC, they follow a rather standard format. For all the dependent variables to be discussed in this report, there are three standard items of information--academic rank, the type of institution worked in (university or "other"),[4] and teaching field (which for this report will be confined to the fields enumerated in the Introduction). Each of these three variables is cross-run simultaneously against the questions which will be examined in this report. To separate some general guidelines from the welter of findings involving seven fields, four ranks, and two kinds of institutions, we shall approach each of the independent variables a step at a time. First, the relation between type of institution, faculty rank, and the variable under consideration will be examined, followed by the relation between teaching field and the dependent variable. Finally, we shall turn to the faculty members in universities and examine the full range provided by the three variables--rank, type of institution, and teaching field taken together. The reason we must confine our attention to universities has already been given in Chapter I: there are simply too few basic medical scientists in "other" institutions. Since this is one of the fields of primary interest, we shall examine data on teaching field and academic rank for universities only.

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[4] "Other" includes liberal arts colleges, teachers colleges, and technological colleges.

The Distribution of Professional Activities

We shall look first at a question dealing with the percentage of time spent in various professional activities: teaching, research, and "other." Examining this question will give us a general picture of these activities before we turn to the specifics. Table 2.1 shows the mean percentage of time which the four ranks of faculty members devoted to teaching (including "student conferences") in the two categories of institutions. In universities, faculty members on the average give about one-half of their time (49 per cent) to teaching, whereas in other kinds of institutions teaching occupies about two-thirds of their time (66 per cent). As one might expect, the amount of teaching is inversely related to rank. Professors spend less time teaching than associate professors, who in turn spend less than assistant professors, who do less teaching than instructors.

TABLE 2.1

MEAN PERCENTAGE OF TIME SPENT IN TEACHING, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	44	49	52	58	49
Other	62	65	68	72	66
All institutions .	51	56	60	65	57

The N's for Tables 2.1-2.3 are as follows:

University . . .	1,016	734	868	386	3,042
Other	655	585	771	382	2,516
Total . . .	1,671	1,319	1,639	768	5,558[a]

[a]Includes 161 faculty members who had other ranks or no rank.

As we have just seen, faculty members are likely to do more teaching in institutions other than universities. The average of 66 per cent versus 49 per cent for all ranks gives a difference of 17 per cent; that is, faculty members in universities spend 17 per cent less time on teaching than do those in other institutions. This difference is roughly constant across all four ranks. The differences are 15 per cent for professors, 16 per cent for associate professors and for assistant professors, and 14 per cent for instructors.

Given these quite expectable findings concerning the amount of time spent on teaching, the data on organized research activity (Table 2.2) seem rather surprising.[5] Whereas a pronounced relationship between rank and teaching activity was found, the relationship between rank and research participation is almost negligible. Over all, faculty members spend an average of 16 per cent of their time in research, a figure which varies rather slightly by rank. For professors the percentage is 17, for associate professors 18, and for assistant professors 16; it decreases slightly to 10 per cent for instructors.

TABLE 2.2

MEAN PERCENTAGE OF TIME SPENT IN ORGANIZED RESEARCH, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	22	26	23	16	23
Other	10	9	8	4	7
All institutions .	17	18	16	10	16

[5] Responses included in the research category are "organized research (separately budgeted)" and "departmental research (not separately budgeted)." Not included are "research for an advanced degree" and "other research (count research that is not separately budgeted)." When these categories are a significant part of the "other" activities we shall take note of this fact; in general they are negligible. Most of the variance in the "organized research" category comes from the separately budgeted part.

On the average, faculty members in universities spend 28 per cent of their time on research, compared with only 7 per cent in the other institutions. Even in universities the relationship between rank and research participation is slight: professors spend 22 per cent of their time on research, associate professors 26 per cent, assistant professors 23 per cent, and instructors 16 per cent (see Chart 2.1). In universities, 6 per cent of the instructors are doing research for an advanced degree. Their actual research activity is consequently on a par with that of higher ranking faculty.

As far as the proportion of time spent is concerned, "other" activities[6] take up as much time in universities as does research (Table 2.3). The average percentage that all faculty members devote to other activities is 27 per cent--28 in universities and 26 in other institutions. Since the percentages are equally close within any rank, the totals adequately summarize the data. Professors spend 32 per cent of their time on other activities, associates 26 per cent, assistants 24 per cent, and instructors 26 per cent.

The most frequent of the other activities is administration. Professors are more likely than other teachers to spend a large amount of time on administration; the differences among the other three ranks are not great.[7] Since professors spend relatively large amounts of time on other activities, while instructors spend relatively little time on organized research, there is a rather regular progression by rank in the data on teaching in Table 2.1. Rank may have its privileges, but research does not seem to be one of them. Instead, administrative duties loom large in the later stages of academic careers.

One perspective on these findings is given by recalling that the Office of Education sample is of college <u>teachers</u>. Yet in universities

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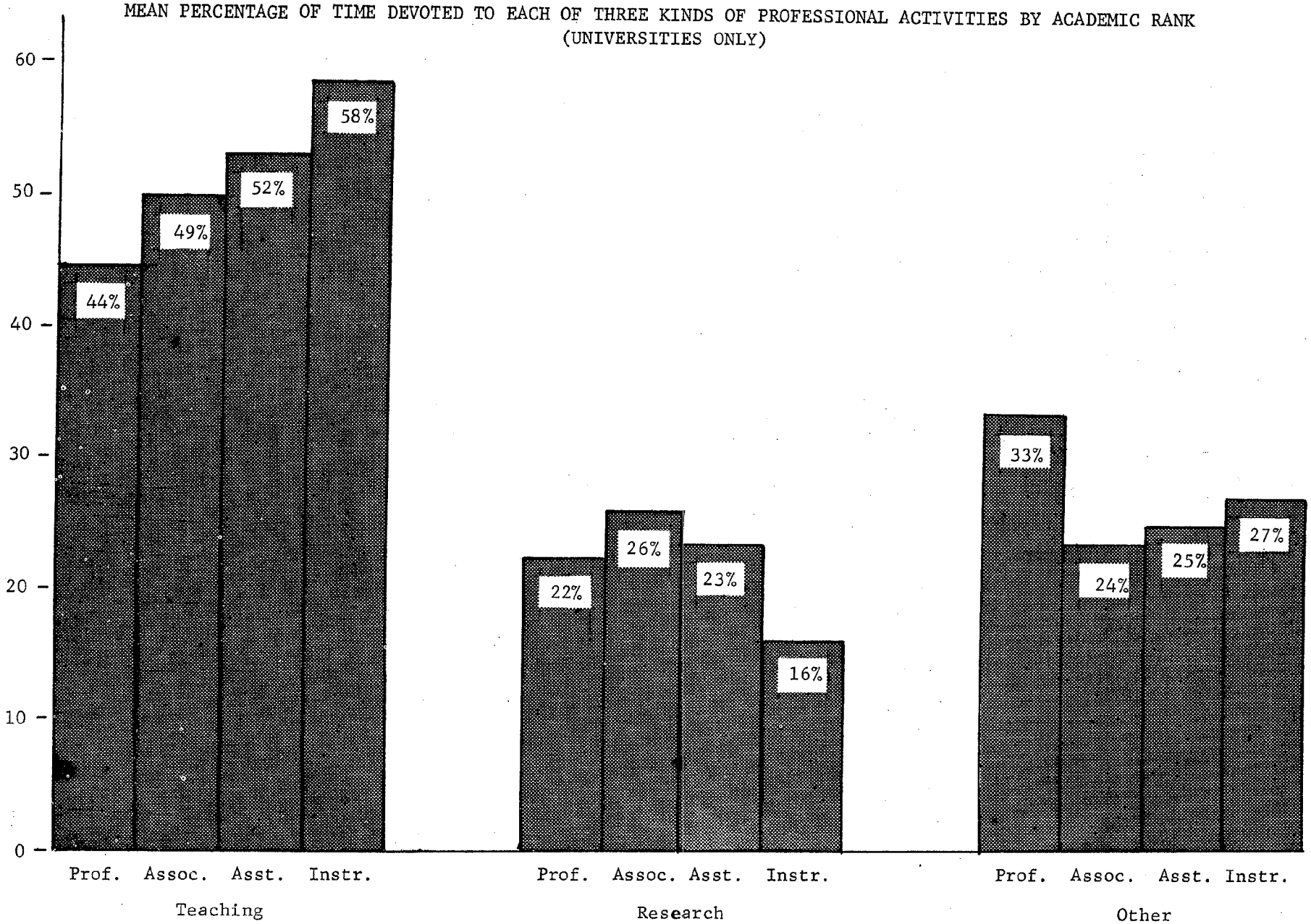
[6]"Other" activities include the following: "administration," "public services"--connected and not connected with "your institutional activities"--"outside consulting for pay," "research for an advanced degree," "other research," "background reading in your field not counted above," and other activities of an institutional and noninstitutional nature.

[7]These findings are in good agreement with those of Harmon (1965, pp. 15-22), which show that administration takes a larger share of a Ph.D.'s time as he gets older.

CHART 2.1

MEAN PERCENTAGE OF TIME DEVOTED TO EACH OF THREE KINDS OF PROFESSIONAL ACTIVITIES BY ACADEMIC RANK
(UNIVERSITIES ONLY)



only one-half of the faculty's time is spent in teaching, compared with two-thirds in other institutions. Even in the latter schools one-third of the teachers' time goes to other activities. Ignoring the operation of the whole institution, departments and committees have to be staffed and promotions decided, and it is hardly surprising that the older men are entrusted with administration.

TABLE 2.3

MEAN PERCENTAGE OF TIME SPENT IN OTHER ACTIVITIES, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	33	24	25	27	28
Other	28	26	24	24	26
All institutions .	32	26	24	26	27

We now turn to the relation of professional activities to teaching field (Table 2.4). Looking first at teaching, we see that mathematicians spend more of their time teaching (67 per cent) than members of any other field. The mathematicians are followed by psychologists, social scientists, physical scientists, and other bioscientists, all with percentages slightly under 60. Health is next with 48 per cent. Basic medical scientists spend less time teaching than members of any other field--43 per cent.

Conversely, basic medical scientists spend more time in research than any other faculty members by a considerable margin, with over one-third (37 per cent) of their time devoted to research. Other bioscientists are next with 21 per cent. Similar research commitments are evidenced by members of the health professions and the physical scientists with 20 per cent or just under, whereas psychologists, social scientists, and mathematicians devote an even smaller fraction of their time to research.

On the whole, the attention given to other activities does not vary greatly from field to field, although the social scientists and health

professionals devote more time to these activities than faculty in other fields. Mathematicians, physical scientists, and bioscientists (both kinds) spend between one-fourth and one-fifth of their time on other activities, and the basic medical scientists give the least time of all.

TABLE 2.4

MEAN PERCENTAGE OF TIME SPENT IN VARIOUS PROFESSIONAL ACTIVITIES, BY TEACHING FIELD

Teaching Field	Teaching and Student Conferences	Organized Research (Including Departmental)	Other	Total Per Cent	N
All selected science fields	57	16	27	100	5,558
Biosciences	51	27	21	99	1,012
Basic medical sciences	43	37	20	100	397
Other biosciences	57	21	22	100	625
Health	48	20	32	100	699
Psychology	58	14	28	100	362
Social sciences	59	8	32	99	1,640
Mathematics	67	9	24	100	721
Physical sciences	58	18	24	100	1,114

Table 2.5, giving the mean percentage of time spent in organized research by teaching field and rank within universities, shows that the basic medical scientists hold their research lead in every rank for which we have enough data to permit reliable conclusions. The professors, associate professors, and assistant professors in these fields are likely to spend more time on research than people of the same rank in any of the other fields. Members of the other biosciences follow behind, with physical scientists coming next quite consistently. They are also consistent in that, regardless of rank, they spend about one-fourth of their time on research. Groups which give the least time to organized research are the social sciences and mathematics. Instructors in the former spend only

6 per cent of their time on research, the lowest figure in the table. Findings for all ranks are summarized in Chart 2.2.

TABLE 2.5

MEAN PERCENTAGE OF TIME SPENT IN ORGANIZED RESEARCH, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields . .	22	26	23	16	23
Biosciences . . .	32	39	37	25	36
Basic medical sciences . .	35	42	48	-[a]	41
Other biosciences	30	35	35	16	32
Health	18	24	21	18	21
Psychology . . .	20	19	24	-	22
Social sciences .	16	13	14	6	14
Mathematics . . .	19	17	18	13	17
Physical sciences	24	26	27	24	26

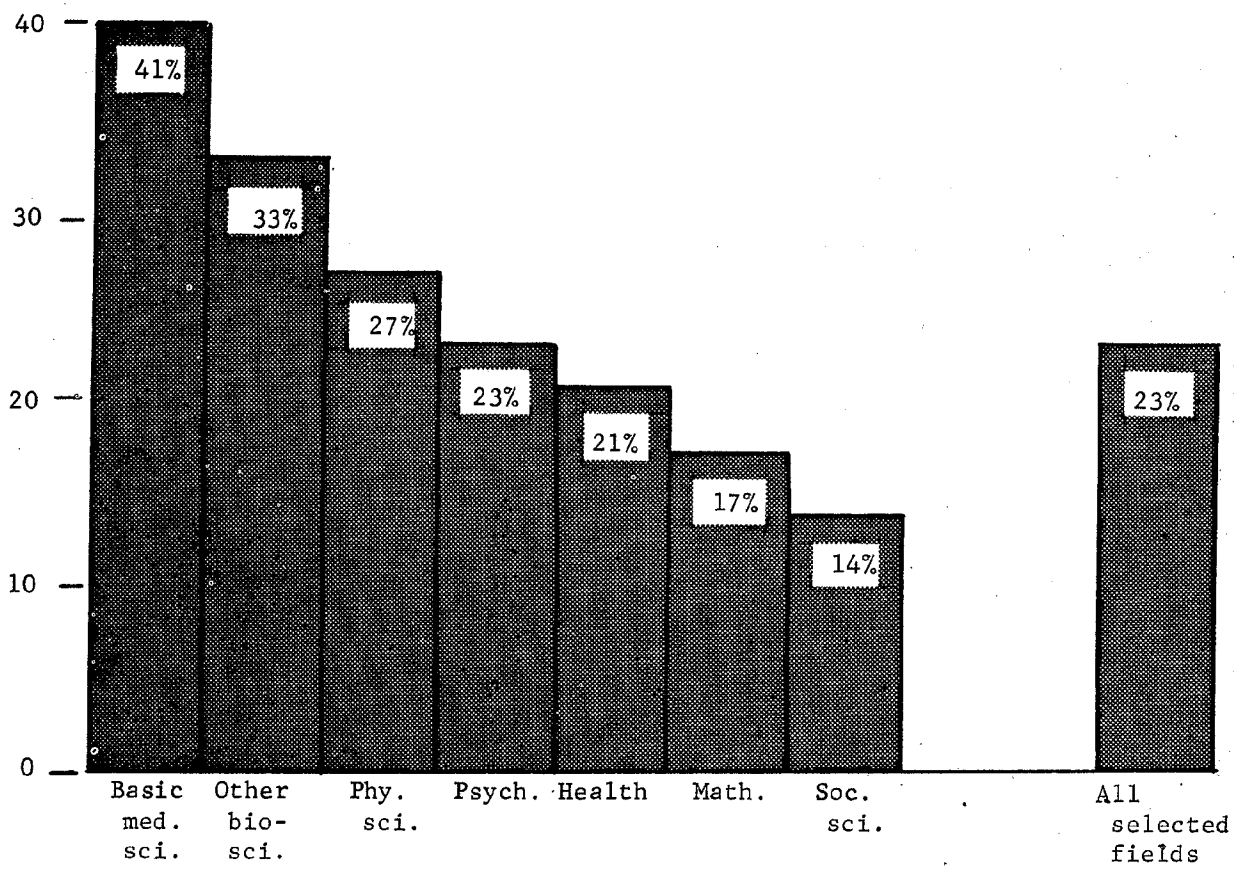
[a]Too few cases for reliable percentaging.

The N's for Tables 2.5-2.8 are as follows:

All selected science fields . .	1,016	734	868	386	3,042
Biosciences . . .	253	173	159	39	630
Basic medical sciences . .	118	90	83	16	310
Other biosciences	135	83	76	23	320
Health	132	124	197	148	616
Psychology . . .	58	57	59	5	181
Social sciences .	275	192	225	86	788
Mathematics . . .	77	59	97	69	303
Physical sciences	221	129	131	39	524

CHART 2.2

MEAN PERCENTAGE OF TIME DEVOTED TO RESEARCH BY TEACHING FIELD
(UNIVERSITIES ONLY)



Turning now to teaching, we see that in every rank basic medical scientists spend less time teaching than members of any other field (Table 2.6). Generally they are followed by faculty members in the health fields or the other biosciences. Mathematicians devote the most time to teaching, among the professors, associate professors, and assistant professors. But among instructors, mathematicians, though above average, teach less than psychologists and about as much as social scientists and other bioscientists. At no rank do basic medical scientists spend as much as one-half of their time teaching, in contrast to professors of mathematics, 51 per cent of whose time is given to teaching.

TABLE 2.6

MEAN PERCENTAGE OF TIME SPENT IN TEACHING, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields.	44	49	52	58	49
Biosciences . . .	39	45	44	53	43
Basic medical sciences . .	37	43	41	-[a]	40
Other biosciences . .	41	48	48	62	46
Health	42	42	49	54	46
Psychology . . .	45	55	53	-	51
Social sciences .	47	52	57	63	53
Mathematics . . .	51	61	63	61	59
Physical sciences	46	50	53	55	50

[a]Too few cases for reliable percentaging.

These findings do not entirely support the conventional wisdom regarding the role of research as a pernicious destroyer of the faculty-student relationship. The idea is widely expressed that senior faculty members see little of students because of their heavy research commitments. As we shall see later, it is indeed true that professors are relatively

unlikely to teach underclassmen, but this is clearly not due to heightened research commitments. Chart 2.3 summarizes the professional activities of university faculty in all selected fields and in the basic medical sciences and the social sciences--the fields with highest and lowest research rates. Research occupies hardly more of a person's time at the end of his career than at the beginning. Other activities do. In general these are about half administrative and half a scattered miscellany. In the fields where research plays a major role, the miscellaneous activities decline in importance along with teaching, but at an even greater rate, as Table 2.8 shows.

TABLE 2.7

MEAN PERCENTAGE OF TIME SPENT IN OTHER ACTIVITIES, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields . .	33	24	25	21	28
Biosciences	29	16	18	18	21
Basic medical sciences	28	15	11	-[a]	19
Other biosciences.	29	17	17	28	22
Health	40	34	30	22	33
Psychology	35	26	24	-	28
Social sciences . .	37	35	30	25	34
Mathematics	29	22	19	21	24
Physical sciences .	30	23	19	27	25

[a]Too few cases for reliable percentaging.

Though the differences are about equal, the decline in other activities is greater because it starts from a smaller proportion of the whole. Apparently administration becomes a more and more pressing responsibility with increasing rank. Teaching and organized research find their place in this triad, but, if organized research assumes major importance, the miscellaneous activities fall by the wayside.

CHART 2.3

ACTIVITY PROFILES FOR UNIVERSITY FACULTY: TEACHING, RESEARCH, AND OTHER DUTIES AS PROPORTIONS OF TOTAL ACTIVITIES, BY ACADEMIC RANK

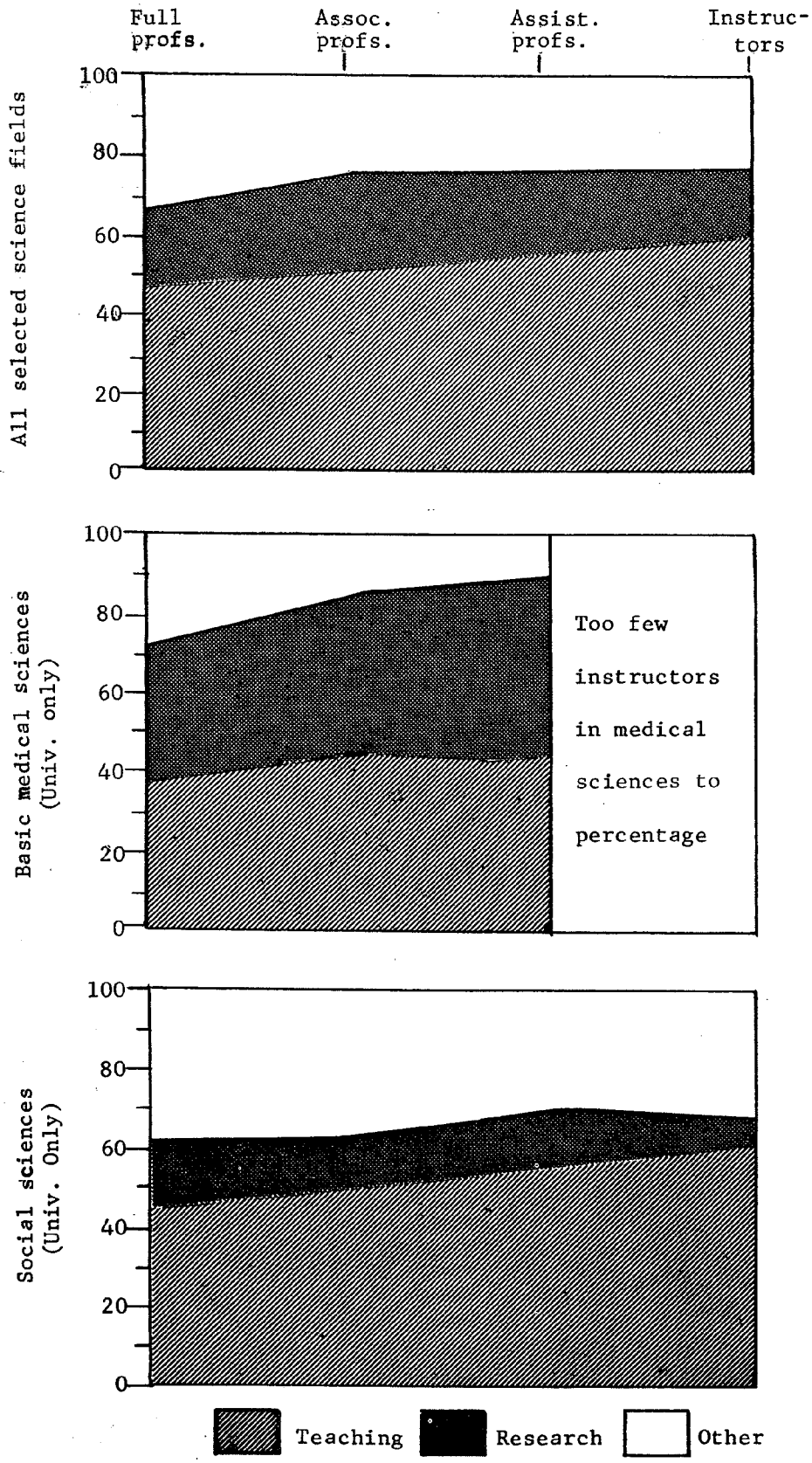


TABLE 2.8

PERCENTAGE DIFFERENCE BETWEEN SOCIAL SCIENCE AND BASIC MEDICAL SCIENCES IN TIME SPENT IN TEACHING AND OTHER ACTIVITIES, BY ACADEMIC RANK (UNIVERSITIES ONLY)

Time Spent In:	Professor	Associate Professor	Assistant Professor	Instructor
Teaching	-10	- 9	-16	-[a]
Other	- 9	-20	-19	-

[a]Too few cases for reliable percentaging.

Teaching

Teaching Load

In light of the relationship between time spent on teaching and academic rank, it is by no means surprising to find that teaching load is also correlated with rank. As Table 2.9 shows, professors are least likely to have teaching loads of seven hours or more (58 per cent),[8] followed by associate professors (67 per cent), assistant professors (70 per cent), and instructors (74 per cent).

TABLE 2.9

PER CENT TEACHING SEVEN OR MORE HOURS PER WEEK, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks[a]
University . . .	44 (1,012)	52 (733)	52 (864)	59 (385)	50 (3,032)
Other	81 (655)	86 (584)	91 (769)	90 (380)	86 (2,510)
All institutions .	58 (1,667)	67 (1,317)	70 (1,633)	74 (765)	66 (5,542)[b]

[a]Faculty with no rank or "other" rank not excluded from total.

[b]Sixteen respondents did not work in a credit system.

[8]This is the cutting point at the median for faculty in universities.

Teaching loads are dramatically lower in universities than in other institutions, as Table 2.9 shows. Among the faculty at other institutions, 86 per cent have teaching loads of seven hours or more, compared with only 50 per cent at universities. This difference of about thirty-five percentage points is roughly constant within each rank. The figures for professors are 81 to 44 per cent, for associates 86 to 52, for assistants 91 to 52, and for instructors 90 to 59. In fact, Table 2.9 shows that instructors in universities, 59 per cent of whom have teaching loads of seven or more hours weekly, are far less likely to have such high teaching loads than are professors at other institutions, 81 per cent of whom teach seven or more hours every week. The average faculty member in a university teaches about two courses a term, compared with the three or even four taught by his counterpart elsewhere in academia.

As we see in Table 2.10, basic medical scientists in universities have the lowest teaching loads of any field--only 36 per cent of them teach seven hours or more. They are followed rather closely by faculty in health (40 per cent). Then come faculty members in psychology (44 per cent) and the other biosciences and physical sciences (47 per cent each). The highest teaching loads among the selected fields are in the social sciences and mathematics. The latter, at 58 per cent, is considerably above the fields just mentioned, and the social sciences (65 per cent) are even higher still. These two fields are the only ones with teaching loads above the mean of 50 per cent.

On the whole the rough groupings established earlier hold within ranks (Table 2.11). Basic medical scientists consistently have the lowest teaching loads and social scientists the highest ones. Also at the high end are mathematicians, as well as associate and assistant professors of physical science. At no rank do as many as 50 per cent of the faculty members in the basic medical sciences have teaching loads of seven or more hours.

Despite the general tendency for academic rank to be inversely related to teaching load, the relationship disappears among the fields with relatively low loads. The relation is slight among basic medical scientists and faculty in health. It is spotty among other bioscientists and psychologists.

TABLE 2.10

PER CENT TEACHING SEVEN OR MORE HOURS PER WEEK, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	University	Other	All Institutions
All selected science fields	50 (3,032)	86 (2,510)	66 (5,542)
Biosciences	42 (629)	85 (390)	58 (1,019)
Basic medical sciences	36 (310)	67 (85)	42 (395)
Other biosciences	47 (319)	90 (305)	68 (624)
Health	40 (610)	54 (82)	42 (692)
Psychology	44 (181)	76 (181)	60 (362)
Social sciences	65 (786)	90 (850)	78 (1,636)
Mathematics	58 (302)	92 (417)	78 (719)
Physical sciences	47 (524)	84 (590)	66 (1,114)

TABLE 2.11

PER CENT TEACHING SEVEN OR MORE HOURS PER WEEK, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	44 (1,012)	52 (733)	52 (864)	59 (385)	50 (3,032)
Biosciences	39 (252)	46 (173)	43 (159)	36 (39)	42 (629)
Basic medical sciences	31 (118)	44 (90)	31 (83)	-[a] (16)	36 (310)
Other biosciences	46 (134)	47 (83)	55 (76)	35 (23)	47 (319)
Health	38 (129)	42 (124)	42 (195)	42 (147)	40 (610)
Psychology	33 (58)	56 (57)	46 (59)	- (5)	44 (181)
Social sciences	57 (275)	66 (191)	67 (224)	86 (86)	65 (786)
Mathematics	46 (77)	54 (59)	60 (96)	70 (69)	58 (302)
Physical sciences	38 (221)	47 (129)	53 (131)	69 (39)	47 (524)

[a] Too few cases for reliable percentaging.

In general, then, the findings for teaching load are similar to those for the amount of time spent in teaching. This is hardly surprising; faculty members with heavy teaching loads will spend a good share of their time teaching.

Teaching Level

Teaching level--whether one teaches underclassmen, upperclassmen, or graduate students--is another matter, however. As we shall see, conventional wisdom is borne out in this regard. Senior faculty members see less of freshmen and sophomores than do their lower ranking colleagues.

As Table 2.12 shows, instructors in both types of institutions are far more likely to teach underclassmen than are faculty of higher rank. Since other institutions have few graduate programs, their faculty is much more likely to teach underclassmen than is the faculty at universities. The figures here are 56 per cent in other institutions and 27 per cent in universities.

TABLE 2.12

PER CENT TEACHING FRESHMEN AND SOPHOMORES, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	20	22	30	49	27
Other	44	48	63	72	56
All institutions .	30	34	46	60	40

The N's for Tables 2.12-2.14 are as follows:

University . . .	1,009	733	865	384	3,029
Other	655	584	771	381	2,513
Total . . .	1,664	1,317	1,636	765	5,542[a]

[a]Sixteen respondents taught in no specified division.

Not teaching underclassmen seems to be a perquisite of the senior faculty--full professors have about the same underclassmen contacts as associate professors. About 20 per cent of each group teaches underclassmen in universities; around 45 per cent does so in other institutions. In the universities, however, 30 per cent of the assistant professors and 49 per cent of the instructors teach underclassmen. In other institutions, 63 per cent of the assistant professors and 72 per cent of the instructors teach underclassmen.

Table 2.13 shows the percentage teaching upperclassmen. In other institutions this figure is nearly the complement of the percentage teaching underclassmen, since the teaching of graduates is quite rare at any rank. In universities, however, this is not the case. Hence, despite the great disparity in the teaching of underclassmen and graduates, the teaching of upperclassmen takes place at about the same rate in universities as in other institutions. In universities, 32 per cent of the faculty members teach upperclassmen; 39 per cent of faculty in other institutions do so. In the junior ranks the two types of institutions are in complete parity: 27 per cent of the instructors in each teach upperclassmen, as do 33 per cent of the assistant professors. In universities these figures increase little if at all in the senior ranks: 36 per cent of the associate professors teach juniors and seniors, as do 31 per cent of the professors--figures not very different from those for instructors.

TABLE 2.13

PER CENT TEACHING JUNIORS AND SENIORS, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	31	36	33	27	32
Other	48	44	33	27	39
All institutions .	38	39	33	27	35

However, while not teaching underclassmen and teaching graduate students are perquisites of the senior faculty in universities, teaching upperclassmen has this function in other institutions. Professors are not much different from associate professors, with 48 per cent of the former and 44 per cent of the latter teaching upperclassmen.

Table 2.14 shows the percentage teaching graduate students. The first thing to notice, of course, is that practically no one in other institutions teaches graduates.[9] The highest figure is 8 per cent for professors and associate professors. In universities the teaching of graduates is, as one would expect, directly related to academic rank--the higher the rank, the more likely a faculty member is to teach graduate students. Thus, 49 per cent of the professors do so, compared with 42 per cent of the associates, 37 per cent of the assistants, and only 24 per cent of the instructors.

TABLE 2.14

PER CENT TEACHING GRADUATES, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	49	42	37	24	41
Other	8	8	4	1	5
All institutions .	32	27	21	13	25

The "All Ranks" column of Table 2.15 shows the results by teaching field. The basic medical scientists are most likely to teach graduate students, 68 per cent doing so. These fields are followed by health at 56 per cent, psychology at 51 per cent, and the other biosciences at 42 per cent. Trailing rather far behind are the social sciences, mathematics, and the physical sciences, all at 28 per cent. The low level of teaching graduates in the physical sciences seems at first glance rather surprising. Yet if one remembers the proverbially huge

[9] Naturally enough, graduate enrollments in these institutions are quite small.

TABLE 2.15

PER CENT TEACHING GRADUATES, BY TEACHING FIELD AND FACULTY RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields.	49	42	37	24	41
Biosciences . . .	61	57	48	36	55
Basic medical sciences . .	73	68	64	-[a]	68
Other bio-sciences . .	50	45	31	22	42
Health	64	64	53	46	56
Psychology . . .	48	53	52	-	51
Social sciences .	38	25	26	6	28
Mathematics . . .	53	25	26	6	28
Physical sciences	38	30	18	0	28

[a]Too few cases for reliable percentaging.

The N's for Tables 2.15 and 2.16 are as follows:

All selected science fields.	1,009	733	865	384	3,029
Biosciences . . .	249	173	158	39	625
Basic medical sciences . .	115	90	83	16	307
Other bio-sciences . .	134	83	75	23	318
Health	132	123	195	146	616
Psychology . . .	58	57	59	5	181
Social sciences .	272	192	225	86	785
Mathematics . . .	77	59	97	69	303
Physical sciences	221	129	131	39	524

introductory chemistry courses, perhaps this finding is not such a surprise after all. The bottom line of Table 2.16 shows that physical scientists are more likely than faculty members in any other field to teach underclassmen, a fact which is true for every rank but particularly so for instructors, 97 per cent of whom teach underclassmen. On the other hand, it should come as no surprise that the basic medical scientists are unlikely to teach underclassmen: 9 per cent of the total, 9 per cent of the professors, 5 per cent of the associates, and 11 per cent of the assistants do so. In general, the differences among the fields are maintained within each rank.

TABLE 2.16

PER CENT TEACHING FRESHMEN AND SOPHOMORES, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields.	20	22	30	49	27
Biosciences . . .	18	14	30	41	22
Basic medical sciences . .	9	5	11	-[a]	9
Other bio-sciences . .	26	24	52	52	34
Health	9	8	10	16	11
Psychology . . .	23	14	29	-	22
Social sciences .	16	29	32	71	30
Mathematics . . .	21	27	40	69	40
Physical sciences	34	37	54	97	44

[a]Too few cases for reliable percentaging.

Table 2.17 shows that the high proportion of graduate students in the physical sciences (at least as measured by degrees received) is matched only by the basic medical sciences. Yet physical science faculty members are relatively unlikely to teach graduate students, while those in the basic medical sciences are most likely to do so. This may be owing to the

size of the component fields in each of these two broad categories. The physical sciences are composed of two large fields (physics and chemistry) and a few small ones (the earth and air sciences and astronomy). In physics and chemistry, at any rate, even graduate classes can be large and therefore require relatively few faculty members. In the basic medical sciences, which are composed of several very small specialized fields, the classes will be much smaller, but each will still require a faculty member.

TABLE 2.17

PER CENT OF DEGREES CONFERRED IN 1962-63, BY FIELD OF STUDY AND LEVEL OF DEGREE

Field of Study	Total	Bachelor's (Four Years)	First Professional (Five Years or More)	Master's	Doctorate
All selected science fields.	100 (185,981)	75	9	12	4
Biosciences . . .	99 (23,594)	81	-[a]	12	6
Basic medical sciences . .	101 (5,491)	74	0	15	12
Other biosciences . .	100 (18,103)	84	-	12	4
Health	100 (28,095)	42	50	7	1
Psychology . . .	100 (13,824)	80	0	14	6
Social sciences .	100 (77,746)	84	3	11	2
Mathematics . . .	100 (19,934)	81	-	17	2
Physical sciences	99 (22,788)	71	0	18	10

[a]Less than .5 per cent.

Summer Teaching

The last item of information on teaching relates to the summer activities of faculty members. Table 2.18 shows the percentage of faculty

who taught during the summer of 1962. Several of the findings in this table contrast with previous findings regarding the relation both of institutional types to teaching activities and of academic rank to teaching. In the first place, there is very little difference between the extent of summer teaching in universities and in other institutions. The figures for all ranks are 41 per cent in universities and 45 per cent in other institutions. Also, the correlation between rank and teaching is, if anything, reversed. In all institutions 45 per cent of the professors taught during the summer, as did 47 per cent of the associates, 41 per cent of the assistants, and 36 per cent of the instructors--a moderate reversal of relationship. In universities, the relationship between rank and summer teaching is practically nil: 40 per cent of the professors, 46 per cent of the associate professors, 41 per cent of the assistants, and 39 per cent of the instructors taught during the summer. However, in other institutions the likelihood of summer teaching declines with each downward step in academic rank: the percentages are 54, 49, 40 and 34. As we shall see in Chapter III, institutional salaries for the regular academic year are considerably lower in other institutions than in universities. From this it is easy to see why faculty in other institutions may want to augment their incomes and therefore ask to teach during the summer, and why higher-ranking faculty may be given precedence. And, of course, instructors are most likely to be working on their dissertations.

TABLE 2.18

PER CENT TEACHING DURING THE SUMMER, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	40 (1,016)	46 (734)	41 (868)	39 (386)	41 (3,042)
Other	54 (655)	49 (585)	40 (771)	34 (382)	45 (2,516)
All institutions .	45 (1,671)	47 (1,319)	41 (1,639)	36 (768)	43 (5,558)

In universities, the relation between teaching field and summer teaching also shows some discrepancies from findings regarding teaching during the academic year (see "All Ranks" column of Table 2.19). The basic medical scientists are still less likely to teach than faculty members in any other field, but in the summer they are followed by the physical scientists,[10] high in regular-year teaching, and by the other bioscientists. In the middle group of summer teachers are the psychologists and the social scientists. Most active in summer teaching are faculty in the health fields, who tended during the regular year to have rather light teaching loads. Among professors much the same relationship obtains, although the professors in the basic medical sciences are somewhat more likely to teach in the summer than are their lower-ranking colleagues. Health faculty are consistently likely to be summer teachers, while faculty in the physical sciences are rather consistent in not taking summer teaching assignments. Social scientists and mathematicians, who tend to have heavy teaching loads during the regular academic year, participate in summer teaching at a level approximating the mean for their rank.

Research Activities

Separately Budgeted Research

To set the stage for a discussion of research activities, we refer the reader to Table 2.2, which shows the percentage of time spent by faculty members in organized research. As we saw earlier, there is very little relation between academic rank and the amount of time faculty members spend on research.

Table 2.20 gives the relationship between doing outside (separately budgeted) research, rank, and type of institution. As one would expect, university faculty members are far more likely to do separately budgeted research than are those in other institutions. Over one-half of the former (55 per cent), compared with one-fifth of the latter, participate in such outside research. But more importantly, there is a strong relationship between academic rank and performing separately budgeted research, particularly in universities, where 63 per cent of the professors, 61 per cent

[10] Perhaps this reflects jaunts to such institutions as Brookhaven, Lawrence, or Argonne.

TABLE 2.19

PER CENT TEACHING DURING THE SUMMER, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	40 (1,016)	46 (734)	41 (868)	39 (386)	41 (3,042)
Biosciences	35 (253)	26 (173)	33 (159)	28 (39)	32 (630)
Basic medical sciences	39 (118)	28 (90)	22 (83)	-[a] (16)	30 (310)
Other biosciences	32 (135)	25 (83)	45 (76)	35 (23)	33 (320)
Health	60 (132)	64 (124)	53 (197)	45 (148)	55 (616)
Psychology	38 (58)	61 (57)	32 (59)	- (5)	44 (181)
Social sciences	41 (275)	48 (192)	44 (225)	26 (86)	42 (788)
Mathematics	40 (77)	54 (59)	47 (97)	49 (69)	48 (303)
Physical sciences	31 (221)	41 (129)	25 (131)	38 (39)	32 (524)

[a]Too few cases for reliable percentaging.

TABLE 2.20

PER CENT DOING SEPARATELY BUDGETED RESEARCH, BY TYPE OF INSTITUTION[a] AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University	63 (1,016)	61 (734)	50 (868)	31 (386)	55 (3,042)
Other	25 (655)	26 (585)	20 (771)	7 (382)	20 (2,516)
All institutions	48 (1,671)	46 (1,319)	36 (1,639)	19 (768)	39 (5,558)

[a]The questions: "Are you now engaged in (or principal investigator for) separately budgeted research funded in whole or in part from:

(1) Federal agencies such as National Institutes of Health, National Science Foundation, or Office of Education?

(2) Non-federal agencies or companies, such as universities, private companies or state or local agencies?

of the associate professors, 50 per cent of the assistant professors, and 31 per cent of the instructors received outside research support. The relationship is much weaker in other institutions, where instructors were a bit less likely to do separately budgeted research than faculty in other ranks.

Tables 2.2 and 2.20 taken together indicate that, whereas faculty members at each rank tend to spend about the same proportion of time doing research, the likelihood that they will receive outside support for this research increases with each step upward in academic rank. Perhaps faculty members of higher rank are better known to the granting agencies and therefore have better chances of getting awards. Furthermore, it is possible that university administrations look with little favor on instructors asking to be released from their teaching obligations, while professors may be in a good enough bargaining position to expect such a release.

Table 2.21 shows the particularly favored position of the basic medical sciences in the receipt of outside support for research: 80 per cent of the faculty in these fields were doing some kind of separately budgeted research. They are the only group receiving nearly that much support, being followed by health at 52 per cent, the other biosciences at 51 per cent, the physical sciences at 49 per cent, and psychology at 45 per cent. These fields, clustering at roughly 50 per cent, are in the middle. A lower group--as far below the middle as that group is below the upper--is composed of the social scientists and the mathematicians: 21 per cent of the former and 18 per cent of the latter receive outside research support.

As Table 2.22 shows, this same rough grouping of fields is maintained in the universities, although at a slightly higher level. Thus 89 per cent --nine out of ten--of the university-affiliated basic medical scientists receive outside support. The next group includes the other biosciences at 70 per cent, the physical sciences at 68 per cent, psychology at 63 per cent, and health at 56 per cent. Trailing far behind again are the social sciences and mathematics, at 32 and 30 per cent, respectively. Such wide differences among fields means that membership in these three rough groups

TABLE 2.21

PER CENT DOING SEPARATELY BUDGETED RESEARCH IN ALL INSTITUTIONS, BY TEACHING FIELD

Teaching Field	Doing Separately Budgeted Research	Not Doing Separately Budgeted Research	Total	N
All selected science fields	39	61	100	5,558
Biosciences	62	38	100	1,022
Basic medical sciences .	80	20	100	397
Other biosciences . . .	51	49	100	625
Health	52	48	100	699
Psychology	45	55	100	362
Social sciences	21	79	100	1,640
Mathematics	18	82	100	721
Physical sciences	49	51	100	1,114

TABLE 2.22

PER CENT DOING SEPARATELY BUDGETED RESEARCH, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields.	63	61	50	31	55
Biosciences . . .	82	85	77	46	80
Basic medical sciences . .	88	93	89	75	89
Other bio-sciences . .	77	76	64	26	70
Health	69	68	52	41	56
Psychology . . .	69	65	58	20	63
Social sciences .	38	37	30	14	32
Mathematics . . .	42	34	30	16	30
Physical sciences	75	70	63	46	68

is pretty constant, even when academic rank is controlled. Differences between academic ranks are on the whole maintained, with one exception: outside research support in the basic medical sciences is not related to rank. In the other fields, the relationship is rather strong, being strongest in the other biosciences, where about three-fourths of the senior faculty members and two-thirds of the assistant professors and only one-fourth of the instructors receive outside research support. Professors in the other biosciences are on a level approaching that of professors in the basic medical sciences, whereas instructors in the other biosciences are closer to instructors in the social sciences and mathematics. Otherwise, the ordering of the groups into high, medium, and low is consistent within each rank: the social scientists and mathematicians are extremely low; the basic medical sciences are very high; and health, psychology, and the physical sciences fall in the middle.

Federal Research Support

The Office of Education questions distinguished between two outside sources of support for research: the federal government and all others. Instead of looking at the availability of federal support to all faculty members, we have eliminated those who received no support and shall discuss the percentage of outside support which comes from the federal government. The denominator for this percentage is the number of people who received any kind of outside support, and the numerator is the number getting support from the federal government.

It is not entirely clear how good a guide Table 2.20 will be for Table 2.23. Receipt of any kind of outside research support is related to academic rank. But Table 2.23 shows that federal support is not strongly related to rank. In other words, the government takes rank into account to the same extent as do other granting agencies. In universities the percentages are 77, 74, 74, and 68, in descending order of academic rank, the difference between the two extremes being nine percentage points. In other institutions, the figures are 59, 60, 52, and 50--again a nine-point difference. University faculty members are somewhat more likely to receive federal funds if they get outside support: 75 per cent of teachers in universities, as opposed to 57 per cent of those at other institutions,

get research money from the federal government. This difference is quite consistent within each of the four academic ranks.

TABLE 2.23

PER CENT OF THOSE DOING SEPARATELY BUDGETED RESEARCH WHO RECEIVE FEDERAL SUPPORT, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	77 (847)	74 (596)	74 (561)	68 (139)	75 (2,171)
Other	59 (197)	60 (191)	52 (206)	50 (34)	57 (642)
All institutions .	74 (1,044)	71 (787)	69 (767)	64 (173)	71 (2,813)

It is, of course, well known that the federal government is an important source of research funds, expecially for scientific fields. Thus, among all institutions of higher education, something over seven in ten faculty members in the fields selected for coverage in this report received their outside support from the federal government. This finding is only slightly tied to academic rank; roughly three-fourths of the professors and associate or assistant professors, and slightly less than two-thirds of the instructors, received support from the federal government.

Table 2.24 gives data on the receipt of federal support by teaching field and type of institution. In universities, the basic medical sciences receive the largest proportional support from the government--88 per cent. Mathematicians are next at 84 per cent. All but one of the remaining fields cluster around 75 per cent, with the physical sciences at 78, health at 75, psychology at 70, and other biosciences at 73. The only field to receive substantially less than three-fourths of its outside support from the government is the social sciences: only 42 per cent comes from this source. Among nonuniversity faculty, the basic medical scientists at 72 per cent and mathematicians at 68 are most likely to receive federal support. However, they are closely followed by physical

scientists at 66, psychologists at 62, and other bioscientists at 61. Trailing far behind again are the social scientists, only 13 per cent of whom receive federal research money.

TABLE 2.24

PER CENT OF THOSE DOING SEPARATELY BUDGETED RESEARCH WHO RECEIVE FEDERAL SUPPORT, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	University	Other	All Institutions
All selected science fields	75 (2,171)	57 (642)	71 (2,813)
Biosciences	82 (502)	64 (134)	78 (636)
Basic medical sciences	88 (277)	72 (40)	86 (317)
Other biosciences	73 (225)	61 (94)	69 (319)
Health	75 (348)	-[a] (14)	75 (362)
Psychology	70 (114)	62 (48)	68 (162)
Social sciences	42 (225)	13 (95)	34 (350)
Mathematics	84 (92)	68 (34)	79 (126)
Physical sciences	78 (358)	66 (183)	74 (541)

[a]Too few cases for reliable percentaging.

The difference in support between the two types of institutions (eighteen percentage points) is rather closely approximated in all the selected fields but one. The social scientists showed the greatest difference, despite having the lowest level of support: 42 per cent of the university social scientists received research support from the federal government, compared with 13 per cent in other institutions. This pattern can be interpreted, perhaps, as the beginning of more extensive federal support. Following the assumption that research money goes first to

universities and later to other kinds of institutions, federal support for the social sciences may be on the verge of picking up.[11]

As Table 2.25 shows, the pattern of support by field differs somewhat from rank to rank, though it tends to adhere to the general pattern established for all ranks. In the basic medical sciences 89 per cent of the professors received federal support, as did 85 per cent in psychology, 81 in physical science, 82 in health, and 75 in the other biosciences. The social sciences are much lower--40 per cent. Among the associate professors, basic medical scientists are highest with 87 per cent, followed by health at 81, the physical scientists at 79, mathematicians at 75, and other bioscientists at 71. There are now two rather low fields--both in the behavioral sciences: psychology at 57 per cent and social science at 42. Among assistant professors, basic medical scientists and mathematicians are high at 89 and 86 per cent, respectively; the physical scientists, health teachers, other bioscientists, and psychologists are in the middle--clustering around 70 per cent. Social scientists again are the lowest with 46 per cent.

All in all, then, the basic medical scientists not only got a large degree of research support from outside sources, but most of that support came from the federal government. The field relying next most heavily on the government was mathematics, which, on the other hand, received a rather small amount of outside support. But on the whole, whatever the level of support prevailing in a field, the largest share of it came from the federal government. The only exception was the social sciences, in which only 42 per cent of the faculty received federal funds.

Though data are not given on the specific governmental agencies responsible for providing research funds, it is quite clear that NIH has provided amply for the field closest to its mission--the basic medical sciences. Among these fields, the categorical institutes seem to have

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[11] Furthermore, the social sciences include fields such as political science and economics, whose research is not tied as closely to an agency mission as that of the basic medical sciences, psychology, or sociology is to that of NIH.

missed few potential recipients, especially when one remembers that these results pertain to a single academic year only.

TABLE 2.25

PER CENT OF THOSE DOING SEPARATELY BUDGETED RESEARCH WHO RECEIVE FEDERAL SUPPORT, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields.	77 (847)	74 (596)	74 (561)	68 (139)	75 (2,171)
Biosciences . . .	82 (208)	80 (147)	82 (123)	-[a] (18)	82 (502)
Basic medical sciences . .	89 (104)	87 (84)	89 (74)	- (12)	88 (277)
Other bio-sciences . .	75 (104)	71 (63)	71 (49)	- (6)	73 (225)
Health	82 (91)	81 (84)	74 (103)	57 (61)	75 (348)
Psychology . . .	85 (40)	57 (37)	68 (34)	- (1)	70 (114)
Social sciences .	40 (103)	42 (71)	46 (67)	- (12)	42 (255)
Mathematics . . .	88 (32)	75 (20)	86 (29)	- (11)	84 (92)
Physical sciences	81 (165)	79 (90)	74 (82)	- (18)	78 (358)

[a]Too few cases for reliable percentaging.

Professional Research Staff

Even though all the faculty members participating in the study were teachers, some were primarily concerned with teaching, others with research, and still others with administration. We therefore present Table 2.26 to give some idea of the proportion of faculty members whose primary commitment was to research. A question was asked regarding the person's primary assignment, and one of the response categories was "professional staff for organized research." Table 2.26 shows that there is no relation between rank and being on a professional research staff,

though there are far more faculty members with this assignment in universities than in other kinds of institutions.

TABLE 2.26

PER CENT ON "PROFESSIONAL STAFF FOR ORGANIZED RESEARCH," BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University . . .	10 (1,016)	13 (734)	13 (868)	10 (386)	11 (3,042)
Other	1 (655)	2 (585)	2 (771)	1 (382)	1 (2,516)
All institutions .	6 (1,671)	8 (1,319)	7 (1,639)	5 (768)	7 (5,558)

Only faculty in the biosciences are at all likely to be on their university's professional research staff. Table 2.27 shows that 24 per cent of the basic medical scientists and 21 per cent of the other bioscientists are on research staffs. The health fields are next with 12 per cent, then the physical sciences with 9, psychology and the social sciences with 6 each, and mathematics with 5. There is very little difference among the fields other than the biosciences and health.

The data for field and rank change this picture very little, as Table 2.28 shows. The bioscientists were consistently high in every rank. Mathematicians, psychologists, and social scientists were consistently below the mean in all ranks.

Summary

Rather surprisingly, academic rank was not related to the proportion of time spent doing research, though it was related to the extent of outside research support.

On the other hand, instructors were most likely to spend a substantial proportion of their time on teaching, and professors were least

TABLE 2.27

PER CENT ON "PROFESSIONAL STAFF FOR ORGANIZED RESEARCH," BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	University	Other	All Institutions
All selected science fields	11 (3,042)	1 (2,516)	7 (5,558)
Biosciences	22 (630)	3 (392)	15 (1,022)
Basic medical sciences	24 (310)	10 (87)	21 (397)
Other biosciences	21 (320)	1 (305)	11 (625)
Health	12 (616)	6 (83)	11 (699)
Psychology	6 (181)	45 (181)	3 (362)
Social sciences	6 (788)	0 (852)	3 (1,640)
Mathematics	5 (303)	0 (418)	2 (721)
Physical sciences	9 (524)	2 (590)	6 (1,114)

TABLE 2.28

PER CENT ON "PROFESSIONAL STAFF FOR ORGANIZED RESEARCH," BY TEACHING FIELD AND ACADEMIC RANK

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	10 (1,016)	13 (734)	13 (868)	10 (386)	11 (3,042)
Biosciences	18 (253)	29 (173)	24 (159)	15 (39)	22 (630)
Basic medical sciences	19 (118)	28 (90)	29 (83)	-[a] (16)	24 (310)
Other biosciences	18 (135)	30 (83)	18 (76)	4 (23)	21 (320)
Health	6 (132)	15 (124)	9 (197)	15 (148)	12 (616)
Psychology	3 (58)	5 (57)	7 (59)	- (5)	6 (181)
Social sciences	8 (275)	5 (192)	7 (225)	2 (86)	6 (788)
Mathematics	2 (77)	3 (59)	9 (97)	3 (69)	5 (303)
Physical sciences	7 (221)	10 (129)	11 (131)	8 (39)	9 (524)

[a]Too few cases for reliable percentaging.

likely to do so. Teaching loads were highly related to rank, with instructors having relatively heavy ones and professors light ones. Teaching loads were even more closely related to type of institution: faculty members in universities had far lighter loads than did those in other institutions. Instructors were most likely to teach underclassmen and professors most likely to teach graduates or upperclassmen, depending on the type of institution.

Activities other than teaching or research, especially administration, loom largest in the activities of professors. The relation between rank and time spent teaching (but not time spent on research) is attributable to the administrative activities of the professors.

Basic medical scientists spent the least amount of time on teaching and had the lightest loads, the heaviest research commitments, and the greatest amount of outside research support, especially from the federal government. Social scientists were generally lowest on the research categories and highest, along with mathematicians, on teaching.

Only bioscientists (both kinds) were at all likely to have positions in which their basic commitment was to research (research staff appointments). Between one-fifth and one-fourth of them had such appointments in universities.

CHAPTER III

INCOME

The earnings of college faculty members have been a source of concern for a long period of time. Faculty members have been traditionally underpaid, and their lifetime earnings have paid a notoriously poor return on their educational investment.

There is evidence that in recent years the situation has been changing to a limited extent. Faculty salaries have shown a steady rise from one year to the next, but the gross income sometimes reported overstates this gain because it does not allow for decreases in the buying power of the dollar and the relation of faculty salaries to those of other professionals. The American Association of University Professors has shown that even though the college teacher's income has increased relative to that of the entire population, it is lagging behind the incomes of persons in the other professions (Baumol and Heim, 1965).

Since the Office of Education data are cross-sectional, they do not pertain directly to the kind of trend report published by the AAUP or the National Educational Association. But it is still possible to compare nine- and ten-month salaries reported to the NEA with those reported to the OE. For all institutions, the figures are remarkably close. The NEA reports a median faculty salary of $7,500 in all institutions; the faculty members themselves report $7,600. Within ranks the figures are equally close--the NEA reports $10,300 for professors, $8,200 for associates, $6,900 for assistants, and $5,600 for instructors, while the OE reports $10,200, $8,300, $6,900, and $5,600.[1] The differences undoubtedly result from rounding or from different methods of computing the mediáns.

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[1] The NEA data are taken from Maul (1964). The OE data refer to all faculty members, not just those in the fields selected for our study.

The income data gathered by the OE study deal primarily with 1961-62--the last complete academic year at the time the questionnaire was administered. Three different aspects of income were included: the respondent's base salary, his total income, and any sources of outside finances which contribute to his total income. The 1961-62 income data were used because the faculty members had not completed the 1962-63 academic year at the time of the survey and could not be expected to know the extent of their outside earnings until the end of the year.

Base Salary

Table 3.1 gives data on base salary stratified according to two of the usual variables (type of institution and academic rank) plus a third, the period over which the individual's contract runs: the academic year of nine to ten months or the calendar year of eleven to twelve. Controlling for this factor is obviously necessary, since some fields have more calendar-year faculty than other fields, and the higher salaries of the calendar-year faculty might well distort some of the findings.

The income data will be summarized by medians, which seem the most appropriate measure because they are relatively insensitive to the kind of skewed distributions which occur in incomes, even those of such a relatively homogeneous group as college faculty members. But medians do have some disadvantages. They do not have the convenient algebraic properties of means; thus there is no way of arriving at a weighted median from the medians of subgroups. Differences between medians, though indicative of gross differences between fields, do not cumulate as do differences between means. If we wanted the mean difference between total income and base salary, we could simply subtract the appropriate means and come up with a figure for the remainder which would agree with an independently computed mean for outside income. No such check is possible for differences between medians. These disadvantages are outweighed, however, by the median's insensitivity to rare but large extremes.[2]

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[2]The medians were calculated by computer from frequency distributions grouped in $1,000 intervals. In this report, calculations were carried out the nearest $100. Since the summary measures are carried out to one more significant digit than the data on which they were based, they can be considered only close approximations.

TABLE 3.1

MEDIAN BASE SALARY, BY TYPE OF INSTITUTION, CONTRACT PERIOD, AND ACADEMIC RANK: 1961-62

Contract Period and Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks[a]
9-10 months:					
University	$11,500 (432)	$ 8,800 (342)	$7,400 (382)	$5,800 (179)	$ 8,400 (1,355)
Other	9,500 (426)	7,900 (368)	6,700 (477)	5,700 (249)	7,300 (1,555)
All institutions	10,400 (858)	8,400 (710)	7,000 (859)	5,800 (428)	7,800 (2,910)
11-12 months:					
University	14,300 (444)	10,400 (317)	9,000 (385)	7,400 (161)	10,500 (1,351)
Other	10,500 (163)	8,600 (112)	7,500 (136)	6,300 (65)	8,300 (490)
All institutions	13,300 (607)	9,900 (429)	8,600 (521)	6,900 (226)	9,800 (1,841)

[a]Sum of cases in both kinds of institutions is 4,751 rather than 5,558 for the following reasons: (a) unsalaried faculty members were not included; (b) data are for 1961-62--those 1962-63 faculty members not employed by a college or university in 1961-62 are not included.

Table 3.1 shows median salaries by contract period, type of institution, and rank. It will be well to get a few of the more predictable findings out of the way before turning to the detailed discussion of this or the remaining tables. For example, base salaries are quite clearly associated with rank. In the academic-year group, professors averaged $10,400, associate professors $8,400, assistant professors $7,000, and instructors $5,800. Comparable calendar-year figures are $13,300, $9,900, $8,600, and $6,900.

Faculty members in universities received higher salaries on the average than did those in other institutions. The difference is greater with each step upward in academic rank and is greater among faculty members on calendar-year contracts than among those hired for the academic year. Academic-year faculty members make about $1,000 more if they are employed by a university, and calendar-year faculty members make about twice that increment. University professors are paid $2,000 more than professors in other institutions when hired on an academic-year basis and nearly $4,000 more when under calendar-year contracts.

That faculty members whose contracts run for a full year are paid more than those with academic-year contracts is hardly surprising; the meaning of this difference is another matter. On the whole, university faculty members are paid at about the same monthly rate, regardless of their contract status. (Tabular data are not presented here so as to avoid formalizing an essentially crude comparison.) The difference between the salary averages for the two contract periods amounts to about two months' academic-year salary. In other institutions, the salary increment resulting from a calendar-year contract is no greater than one month's pay.

Perhaps this reflects a difference in function between the two categories of calendar-year employees. It seems reasonable to assume that many of the university eleven- and twelve-month faculty members are on research staffs, whereas very few faculty members in other institutions hold such positions, as Chapter II showed. If this is the correct explanation, university researchers and teachers receive roughly equal salaries. In the other institutions, however, the calendar-year faculty seems to be

engaged in slightly less remunerative activities, perhaps administration.[3]

What are the variations along the teaching-field axis? Table 3.2 gives median salaries by teaching field, contract period, and type of institution. Among academic-year personnel, physical scientists received the highest base salaries at both types of institutions, earning $9,000 in universities and $7,800 in other institutions. They are followed by other bioscientists and psychologists in universities and by psychologists in other institutions. At the bottom of the scale in both types of institutions are faculty members in health fields. The data are somewhat different for faculty members on calendar-year contracts. Here the basic medical scientists have the highest salaries ($11,500 in universities and $9,700 in other institutions), with faculty in the health fields ranking second and physical scientists third. Bringing up the rear in the universities are mathematicians and social scientists. In other institutions, social scientists and other bioscientists are paid the least.

Table 3.3 gives median salaries for university faculty members by contract period, teaching field, and academic rank. The numerical data, which will not be discussed in great detail, are summarized in Table 3.4, which lists the fields with highest and lowest base salaries in each rank. The highest salaried field among university professors on academic-year contract is psychology, and the lowest is other biosciences. Among associate professors, the highest ranking field is health, and the lowest is mathematics. Among assistant professors, psychology ranks highest and health lowest. Since there are too few instructors to allow for reliable percentages, this column is absent from the table.

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[3]These findings appear at first sight to conflict with those of Harmon (1965). However, several variables are confounded in Harmon's data--in particular, type of employer and contract period. Harmon found that administrators were the highest-paid group in his sample of Ph.D. holders. This may have been because administrators were more likely to work for industry, to be on calendar-year contracts, or both. It is unfortunate that tabulations for this study did not include the relationship between activities and income.

TABLE 3.2

MEDIAN BASE SALARY, BY TEACHING FIELD, CONTRACT PERIOD, AND TYPE OF INSTITUTION: 1961-62

Teaching Field	9-10 Month Contract Period			11-12 Month Contract Period		
	University	Other	All Institutions	University	Other	All Institutions
All selected science fields	$8,400 (1,335)	$ 7,300 (1,555)	$ 7,800 (2,910)	$10,500 (1,351)	$ 8,300 (490)	$ 9,800 (1,841)
Biosciences	8,700 (187)	7,400 (242)	7,800 (429)	10,800 (407)	8,100 (75)	10,500 (482)
Basic medical sciences	8,600 (54)	7,400 (46)	7,900 (100)	11,500 (240)	9,700 (27)	11,300 (267)
Other biosciences	8,700 (133)	7,500 (196)	7,800 (329)	10,200 (167)	7,700 (48)	9,800 (215)
Health	7,400 (98)	6,600 (37)	7,000 (135)	10,700 (433)	8,900 (26)	10,600 (459)
Psychology	8,700 (96)	7,600 (105)	8,100 (201)	10,400 (73)	8,100 (46)	9,300 (119)
Social sciences	8,400 (487)	7,100 (543)	7,700 (1,030)	9,600 (201)	7,800 (146)	8,700 (347)
Mathematics	8,000 (192)	7,000 (264)	7,400 (456)	9,700 (66)	8,500 (63)	9,200 (129)
Physical sciences	9,000 (295)	7,800 (364)	8,200 (659)	10,500 (171)	8,800 (134)	9,900 (305)

TABLE 3.3

MEDIAN BASE SALARY, BY CONTRACT PERIOD, TEACHING FIELD, AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Contract Period and Teaching Field	Professor	Associate Professor	Assistant Professor	All Ranks[a]
9-10 months:				
All selected science fields	$11,500 (432)	$ 8,800 (342)	$ 7,400 (382)	$ 8,400 (1,355)
Biosciences	10,800 (64)	9,000 (48)	7,400 (51)	8,700 (187)
Basic medical sciences	-[b] (15)	- (15)	- (15)	8,600 (54)
Other biosciences	10,700 (49)	9,000 (33)	7,300 (36)	8,700 (133)
Health	- (11)	9,900 (22)	7,200 (37)	7,400 (98)
Psychology	12,300 (28)	8,900 (28)	7,600 (32)	8,700 (96)
Social sciences	11,300 (169)	8,800 (122)	7,300 (138)	8,400 (487)
Mathematics	11,500 (46)	8,700 (43)	7,400 (53)	8,000 (192)
Physical sciences	11,600 (114)	8,800 (79)	7,500 (71)	9,000 (295)
11-12 months:				
All selected science fields	14,300 (444)	10,400 (317)	9,000 (385)	10,500 (1,351)
Biosciences	14,400 (153)	10,100 (115)	9,000 (109)	10,800 (407)
Basic medical sciences	14,900 (87)	10,900 (66)	9,000 (68)	11,500 (240)
Other biosciences	13,600 (66)	9,500 (49)	9,000 (41)	10,200 (167)
Health	16,400 (101)	12,600 (86)	9,800 (130)	10,700 (433)
Psychology	14,800 (21)	10,300 (20)	8,600 (26)	10,400 (73)
Social sciences	12,900 (75)	9,100 (44)	8,400 (61)	9,600 (201)
Mathematics	- (18)	- (14)	- (19)	9,700 (66)
Physical sciences	14,100 (76)	10,400 (38)	9,000 (40)	10,500 (171)

[a]Includes instructors.

[b]Too few cases for reliable percentaging.

The calendar-year faculty members, on the other hand, show a somewhat different rank-ordering: faculty in health fields get the highest salary in each rank, and second place is occupied by the basic medical scientists.[4] The lowest ranking field is social science, generally followed by other biosciences.

TABLE 3.4

TEACHING-FIELD EXTREMES IN BASE SALARY, BY CONTRACT PERIOD AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Contract Period and Extremes	Professor	Associate Professor	Assistant Professor	All Ranks[a]
9-10 months:				
Highest field .	Psychology	Health	Psychology	Physical sciences
Lowest field . .	Other biosciences	Mathematics	Health	Health
Range	$1,600	$1,200	$ 400	$1,600
11-12 months:				
Highest field .	Health	Health	Health	Basic medical sciences
Lowest field . .	Social sciences	Social sciences	Social sciences	Social sciences
Range	$3,500	$3,500	$1,400	$1,900

[a]Includes instructors.

The relationship among these figures is further summarized in Table 3.5, the cells of which contain rank-order correlation coefficients (Spearman's rho). Within each grouping, defined by contract period and academic rank, the fields were ranked according to their median base salary, from

[4]That the basic medical scientists are highest over all academic ranks, but health is highest within ranks, is explained by the scarcity of instructors in the first field and their relative abundance in the second.

highest to lowest. Calculations on these rankings provide the rhos. This procedure tells us whether income arranges the fields in the same way among the various academic ranks. To put the question another way, do the "effects" of field hold up within the academic ranks? The value -.18 in the first row and column of Table 3.5 indicates that there is virtually no relation between the salary ranking of fields for professors and associate professors on academic-year contracts. The -.44 in the second column of the first row means that the salary rankings of associate professors tend to be opposite to those of assistant professors, whereas the +.98 indicates that the salary rankings of academic-year professors and assistant professors are nearly identical. The academic-year line of Table 3.5 is actually quite deceptive, since it seemingly indicates considerable heterogeneity. Looking again at Table 3.4, we see that the field orderings for professors and assistant professors are highly congruent, and hence the correlation of each of the two groups with associate professors is negative. A major difference between the three ranks is the location of health at the top of the heap among associate professors and at the bottom among full professors and assistant professors.

TABLE 3.5

RANK-ORDER CORRELATION (RHO)[a] OF MEDIAN BASE SALARY WITH ACADEMIC RANK, CONTROLLING FOR CONTRACT PERIOD: 1961-62

Contract Period	Professor vs. Associate	Associate vs. Assistant	Professor vs. Assistant
9-10 months . . .	-.18	-.44	+.98
11-12 months . . .	+.94	+.83	+.71

[a]Spearman's rho is a measure of rank-order correlation. We have here correlated the median base-salary rankings of teaching fields. For information on Spearman's rho, see Siegel (1956, pp. 202-13).

Among calendar-year personnel, the rank-order correlations are uniformly high. That between professors and associate professors is .94, between associates and assistants .83, and between professors and assistants .71. In general, then, there are differences between teaching fields

in the amount of base salary paid, and these differences tend to hold up when academic rank is controlled.

As Table 3.6 shows, the salary ordering of fields tends to be about the same for both types of contract. The figures actually hide the major difference, however. The -.52 for assistant professors is in some ways a good indication of the true state of affairs. The correlation is negative principally because of health, the "richest" field over the calendar year but the "poorest" over the academic year.

TABLE 3.6

RANK-ORDER CORRELATION (RHO) OF MEDIAN BASE SALARY WITH CONTRACT PERIOD, CONTROLLING FOR ACADEMIC RANK: 1961-62

Contract Period	Professor	Associate	Assistant
9-10 months vs. 11-12 months	+.80	+.48	-.52

Of perhaps the greatest concern to people interested in health manpower are two fields whose ranks differ substantially by contract period. The first of these is health, whose members draw the lowest pay on academic-year contracts and the highest pay on calendar-year contracts. The other field is the basic medical sciences. Academic-year salaries are about average in this field but are consistently second to health salaries for the calendar year.

A strong note of caution is in order about this and later discussions of field "effects." It is simply this: viewed as effects, they are negligible. On a gross level (i.e., not taking into account other variables that might alter field's impact), teaching fields account for only 1 per cent of the variance in academic-year base salary. By

comparison the gross effect of rank accounts for 46 per cent.[5] Comparable figures for the calendar year are 6 per cent for field and 34 per cent for rank. We have discussed data on teaching fields for their interest to the reader of this report. He should remember that their explanatory significance is practically nil.

Total Income

Table 3.7 gives a general overview of findings on total income, just as Table 3.1 did for base salary. Comparison of the two tables shows that, on the average, few faculty members earned large amounts over and above their base salaries. In general, then, the findings are very much the same for total income as for base salary. In each kind of institution and in each contract period, median total income is correlated with academic rank. Thus, instructors did not pick up enough outside income to put them on a par with assistant professors. As before, university faculty earned more money than the faculty in other institutions. On an academic-year basis, the professors earned nearly $3,000 more at universities than at other institutions. The difference is about $1,500 for associate and assistant professors and declines to only $300 for instructors. This pattern also holds for calendar-year faculty. Professors earned about $4,000 more in universities than in other institutions, associate and assistant professors about $1,500 more, and instructors about $1,000 more. In general, then, the pattern of decreasing income differentials between academic ranks holds for total income as well as for base salary.

Since academic-year faculty members have at least two months a year in which they are free to do outside work, the question naturally arises whether they can earn enough extra money to compensate for their lower

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[5] Even though medians are reported in the text, means and standard deviations were also computed. The statistic discussed in the text is the square of the correlation ratio, eta. The appropriate formula is:

$$\eta^2 = \frac{\sum_i n_i \left(\bar{Y}_i - \bar{Y} \right)^2}{\sum \left(Y - \bar{Y} \right)^2} .$$

If the ratio is one, the between-groups sum of squares accounts for all of the variance; if it is zero, it accounts for none.

TABLE 3.7

MEDIAN TOTAL INCOME, BY CONTRACT PERIOD, TYPE OF INSTITUTION, AND ACADEMIC RANK: 1961-62

Contract Period and Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
9-10 months:					
University	$13,800 (432)	$10,600 (342)	$8,700 (382)	$6,600 (179)	$10,100 (1,355)
Other	11,000 (426)	9,000 (368)	7,800 (477)	6,300 (249)	8,400 (1,555)
All institutions	12,200 (858)	9,800 (710)	8,200 (859)	6,400 (428)	9,100 (2,910)
11-12 months:					
University	15,400 (444)	11,100 (317)	9,800 (385)	7,900 (161)	11,400 (1,351)
Other	11,400 (163)	9,600 (112)	8,100 (136)	6,700 (65)	8,900 (490)
All institutions	14,400 (607)	10,700 (429)	9,300 (521)	7,500 (226)	10,700 (1,841)

salaries in comprison with calendar-year personnel. In universities, the two months' base-salary advantage of calendar-year faculty was reduced to about a one-month gain, and in other institutions the one-month advantage was also cut by about one-half. Still, outside income did not completely make up the difference.

Turning now to data on teaching fields, Table 3.8 takes contract period and type of institution into account. Looking first at the academic-year personnel in universities, we see that the physical scientists and psychologists had the highest total incomes on the average (about $11,000), with faculty in health lowest ($7,800). No other field in universities averaged less than $9,600 a year. In other institutions, the physical scientists and psychologists are again high (earning about $9,000), with health faculty again low ($7,000); the next to lowest field averaged over $8,000.

The situation is reversed for calendar-year personnel, however. In universities, the health faculty had the highest income ($12,500), followed by the basic medical sciences ($12,100). The lowest incomes went to the social scientists ($10,300). In other institutions, basic medical scientists were high ($12,000), with the social sciences again low ($8,500).

Full data on total income in universities are given in Table 3.9 and summarized in Table 3.10. Among academic-year personnel, psychologists and physical scientists consistently received the highest average salaries. Psychology was the highest field among professors and associate professors, and physical science was highest among assistant professors. Health, mathematics, the other biosciences, and social sciences were among the lowest ranking fields, with health lowest of all among associate professors and among all ranks combined. The range between the highest and lowest fields is $2,900 for professors, $1,100 for associate professors, and $1,700 for assistant professors.

With calendar-year personnel, on the other hand, health fields generally ranked highest. Another look at Table 3.9 shows us that health immediately follows psychology among professors, the only rank at which health is not highest. The health fields are followed by the basic medical sciences among associate professors and the physical sciences among assistant professors. Lowest ranking fields are the social sciences and the other biosciences, in that order. The spread is markedly influenced by the high

TABLE 3.8

MEDIAN TOTAL INCOME, BY TEACHING FIELD, CONTRACT PERIOD, AND TYPE OF INSTITUTION: 1961-62

Teaching Field	9-10 Month Contract Period						11-12 Month Contract Period					
	University		Other		All Institutions		University		Other		All Institutions	
All selected science fields .	$10,100	(1,355)	$ 8,400	(1,555)	$ 9,100	(2,910)	$11,400	(1,351)	$ 8,900	(490)	$10,700	(1,841)
Biosciences . . .	10,200	(187)	8,600	(242)	9,100	(429)	11,300	(407)	9,300	(75)	10,900	(482)
Basic medical sciences . . .	10,000	(54)	8,200	(46)	9,100	(100)	12,100	(240)	12,000	(27)	12,000	(267)
Other biosciences	10,300	(133)	8,600	(196)	9,200	(329)	10,600	(167)	8,800	(48)	10,200	(215)
Health	7,800	(98)	7,000	(37)	7,500	(135)	12,500	(433)	9,100	(26)	12,200	(459)
Psychology	11,000	(96)	9,100	(105)	9,800	(201)	11,300	(73)	8,600	(46)	10,600	(119)
Social sciences .	9,900	(487)	8,100	(543)	8,900	(1,030)	10,300	(201)	8,500	(146)	9,400	(347)
Mathematics . . .	9,600	(192)	8,400	(264)	8,800	(456)	10,800	(66)	9,100	(63)	9,900	(129)
Physical sciences.	11,100	(295)	9,200	(364)	10,000	(659)	11,800	(171)	9,700	(134)	11,100	(305)

TABLE 3.9

MEDIAN TOTAL INCOME, BY CONTRACT PERIOD, TEACHING FIELD, AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Contract Period and Teaching Field	Professor		Associate Professor		Assistant Professor		All Ranks[a]	
9-10 months:								
All selected science fields .	$13,800	(432)	$10,600	(342)	$ 8,700	(382)	$10,100	(1,355)
Biosciences . . .	13,300	(64)	10,700	(48)	8,800	(51)	10,200	(187)
Basic medical sciences . . .	-[b]	(15)	-	(15)	-	(15)	10,000	(54)
Other biosciences	12,900	(49)	10,700	(33)	8,800	(36)	10,300	(133)
Health	-	(11)	11,500	(22)	7,600	(37)	7,800	(98)
Psychology	15,800	(28)	11,600	(28)	9,200	(32)	11,000	(96)
Social sciences .	13,300	(169)	10,400	(122)	8,500	(138)	9,900	(487)
Mathematics . . .	14,100	(46)	10,400	(43)	9,000	(53)	9,600	(192)
Physical sciences.	14,700	(114)	10,900	(79)	9,300	(71)	11,100	(295)
11-12 months:								
All selected science fields .	15,400	(444)	11,100	(317)	9,800	(385)	11,400	(1,351)
Biosciences . . .	15,000	(153)	10,600	(115)	9,500	(109)	11,300	(407)
Basic medical sciences . . .	15,600	(87)	11,400	(66)	9,500	(68)	12,100	(240)
Other biosciences	14,200	(66)	9,800	(49)	9,600	(41)	10,600	(167)
Health	19,600	(101)	14,700	(86)	11,100	(130)	12,500	(433)
Psychology	20,000	(21)	11,500	(20)	9,800	(26)	11,300	(73)
Social sciences .	13,900	(75)	10,200	(44)	8,900	(61)	10,300	(201)
Mathematics . . .	14,500	(18)	-	(14)	-	(19)	10,800	(66)
Physical sciences.	15,500	(76)	10,800	(38)	10,200	(40)	11,800	(171)

[a] Includes instructors.

[b] Too few cases for reliable percentaging.

median incomes in the health fields; the ranges are $6,100 for professors, $4,900 for associate professors, and $2,200 for assistant professors.

TABLE 3.10

TEACHING-FIELD EXTREMES IN TOTAL INCOME, BY CONTRACT PERIOD AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Contract Period and Extremes	Professor	Associate Professor	Assistant Professor	All Ranks[a]
9-10 months:				
Highest field . .	Psychology	Psychology	Physical sciences	Physical sciences
Lowest field . .	Other bio-sciences	Social sciences, Mathematics	Health	Health
Range	$2,900	$1,100	$1,700	$3,300
11-12 months:				
Highest field . .	Psychology	Health	Health	Health
Lowest field . .	Social sciences	Other bio-sciences	Social sciences	Social sciences
Range	$6,100	$4,900	$2,200	$2,200

[a]Includes instructors.

As Table 3.11 shows, the relationships between total income across ranks and within contract periods tend to be consistent. For academic-year faculty, the rank-order correlation between professors and associate professors is .68, between associates and assistants .21, and between professors and assistant professors .80. The correlations are somewhat higher for the calendar-year faculty members: .89 between professors and associate professors, .60 between associate professors and assistant professors, and .71 between professors and assistant professors. Except for assistant professors, correlations between nine- and ten-month versus eleven- and twelve-month salaries are also consistent (Table 3.12).

Despite the consistency of these results, teaching field is not nearly as important in explaining total income as is academic rank. Over the academic year, field explains 2 per cent of the variance in total

income and rank 24 per cent. Over the calendar year, field explains 6 per cent and rank 28 per cent.

TABLE 3.11

RANK-ORDER CORRELATION (RHO) OF MEDIAN TOTAL INCOME WITH ACADEMIC RANK, CONTROLLING FOR CONTRACT PERIOD: 1961-62

Contract Period	Professor vs. Associate	Associate vs. Assistant	Professor vs. Assistant
9-10 months . . .	+.68	+.21	+.80
11-12 months . .	+.89	+.60	+.71

TABLE 3.12

RANK-ORDER CORRELATION (RHO) OF MEDIAN TOTAL INCOME WITH CONTRACT PERIOD, CONTROLLING FOR ACADEMIC RANK: 1961-62

Contract Period	Professor	Associate	Assistant
9-10 months vs. 11-12 months .	+.80	+.80	.00

Other Income

In this section we shall be forced to discuss other income in two ways. It makes some sense to talk about the outside income of faculty on academic-year contracts. They earn enough to make medians informative, but the median outside income for calendar-year faculty is a mere $100, with barely more than 50 per cent having any outside income at all. Data for calendar-year persons will be shown as the percentages reporting any outside income whatsoever. For what it is worth, median outside income for university faculty on calendar-year contracts is $300 for professors, $100 for associate and assistant professors, and $000 for instructors.

Table 3.13, giving median other income for academic-year faculty by type of institution and rank, shows the expected relation of outside

earnings to both variables. Professors earned more than lower-ranking faculty members. Outside income was greater in universities than elsewhere. The median for all ranks in universities is $1,600, ranging from a high of $2,200 for professors to a low of $800 for instructors.

TABLE 3.13

MEDIAN OTHER INCOME OF FACULTY ON 9-10 MONTH CONTRACTS, BY TYPE OF INSTITUTION AND ACADEMIC RANK: 1961-62

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
University .	$2,200 (432)	$1,900 (342)	$1,500 (382)	$800 (179)	$1,600 (1,355)
Other. . . .	1,400 (426)	1,200 (368)	1,100 (477)	200 (249)	1,100 (1,555)
All institutions .	1,700 (858)	1,500 (710)	1,300 (859)	500 (428)	1,300 (2,910)

The data for teaching field and type of institution (Table 3.14) show psychology highest in both institutional types ($2,300 in universities and $1,400 in other institutions), followed by the physical sciences ($2,200 and $1,300). The basic medical sciences were about average and health professionals were lowest.

The full field-rank data for universities (Table 3.15) show that psychology is a consistent leader, the physical sciences next, the basic medical sciences average, and health lowest. The psychologists and physical scientists seem affluent indeed. Over all ranks, the former earn $2,300 from other sources and the latter earn $2,200. Professors in these two fields earned $3,400 and $3,000, respectively.

On the whole, other incomes are quite consistent with base salaries, as Table 3.16 shows. Displayed here are median other incomes as a percentage of base salary. The "All Ranks" column shows that, in each field, the value of other earnings is about two-ninths that of base salary. In other words, outside income amounts to about two months' base salary.

TABLE 3.14

MEDIAN OTHER INCOME OF FACULTY ON 9-10 MONTH CONTRACTS, BY TEACHING FIELD AND TYPE OF INSTITUTION: 1961-62

Teaching Field	University	Other	All Institutions
All selected science fields	$1,600 (1,355)	$1,100 (1,555)	$1,300 (2,910)
Biosciences	1,700 (187)	1,100 (242)	1,400 (429)
Basic medical sciences	1,600 (54)	1,000 (46)	1,300 (100)
Other biosciences	1,800 (133)	1,200 (196)	1,400 (329)
Health	300 (98)	200 (37)	300 (135)
Psychology	2,300 (96)	1,400 (105)	1,700 (201)
Social sciences	1,400 (487)	800 (543)	1,100 (1,030)
Mathematics	1,700 (192)	1,200 (264)	1,400 (456)
Physical sciences	2,200 (295)	1,300 (364)	1,600 (659)

TABLE 3.15

MEDIAN OTHER INCOME OF FACULTY ON 9-10 MONTH CONTRACTS, BY TEACHING FIELD AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	All Ranks[a]
All selected science fields	$2,200 (432)	$1,900 (342)	$1,500 (382)	$1,600 (1,355)
Biosciences	2,500 (64)	2,000 (48)	1,600 (51)	1,700 (187)
Basic medical sciences	-[b] (15)	- (15)	- (15)	1,600 (54)
Other biosciences	2,400 (49)	1,900 (33)	1,600 (36)	1,800 (133)
Health	- (11)	1,500 (22)	500 (37)	300 (98)
Psychology	3,400 (28)	2,900 (28)	1,900 (32)	2,300 (96)
Social sciences	1,500 (169)	1,600 (122)	1,300 (138)	1,400 (487)
Mathematics	2,800 (46)	2,000 (43)	1,900 (53)	1,700 (192)
Physical sciences	3,000 (114)	2,400 (79)	2,000 (71)	2,200 (295)

[a]Includes instructors.

[b]Too few cases for reliable percentaging.

The only exceptions are the two most affluent fields (psychology and the physical sciences) and the least affluent (health). The highest percentage in the table is for associate professors of psychology, who make the equivalent of three months' base salary through outside endeavor. The lowest is for assistant professors in health fields, whose outside income amounts to about ten days' worth of their base salary.

TABLE 3.16

MEDIAN OTHER INCOME AS PERCENTAGE OF MEDIAN BASE SALARY FOR FACULTY ON 9-10 MONTH CONTRACTS, BY TEACHING FIELD AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	All Ranks[a]
All selected science fields .	19	22	20	19
Biosciences	23	22	22	20
Basic medical sciences . .	-[b]	-	-	19
Other biosciences	22	21	22	21
Health	-	15	7	4
Psychology	28	33	25	26
Social sciences	13	18	18	17
Mathematics	24	23	26	21
Physical sciences	26	27	27	24

[a]Includes instructors.

[b]Too few cases for reliable percentaging.

Since the data for calendar-year contracts (Tables 3.17-3.19) are somewhat more limited, we shall discuss them only briefly. Table 3.18 shows that the psychologists stand out quite dramatically from the remaining university faculty members on calendar-year contract: 85 per cent of them indicated that they had some form of outside income. The next highest fields are mathematics and social sciences, in which about two-thirds earned some outside income. The lowest fields are the two bioscience groups, in each of which less than one-half earned some money from outside sources. In other institutions the field most frequently earning

TABLE 3.17

PER CENT OF FACULTY ON 11-12 MONTH CONTRACTS WHO RECEIVE ANY OUTSIDE INCOME, BY TYPE OF INSTITUTION AND ACADEMIC RANK: 1961-62

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
Universities . .	59 (444)	53 (317)	53 (385)	40 (161)	53 (1,351)
Other	54 (163)	54 (112)	46 (136)	34 (65)	48 (490)
All institutions .	58 (607)	53 (429)	51 (521)	39 (226)	52 (1,841)

TABLE 3.18

PER CENT OF FACULTY ON 11-12 MONTH CONTRACTS WHO RECEIVE ANY OUTSIDE INCOME, BY TEACHING FIELD AND TYPE OF INSTITUTION: 1961-62

Teaching Field	Universities	Other	All Institutions
All selected science fields	53 (1,351)	48 (490)	52 (1,841)
Biosciences	45 (407)	44 (75)	45 (482)
Basic medical sciences .	48 (240)	37 (27)	46 (267)
Other biosciences	41 (167)	48 (48)	43 (215)
Health	48 (433)	15 (26)	46 (459)
Psychology	85 (73)	50 (46)	71 (119)
Social sciences	63 (201)	51 (146)	58 (347)
Mathematics	62 (66)	44 (63)	53 (129)
Physical sciences	54 (171)	56 (134)	55 (305)

some outside income is the physical sciences. The field least likely to do so is health, only 15 per cent of whose members reported outside earnings. Health faculty as a group are thus rather unlikely to earn outside incomes under both contract situations. Yet, as we have seen from earlier tables, the calendar-year health faculty members have the highest total incomes of all.

Table 3.19 shows us that among calendar-year employees the psychologists broaden the range in all ranks: 90 per cent of the professors, 85 per cent of the associate professors, and 81 per cent of the assistant professors in psychology have some outside income. The next highest field among the professors is social science at 72 per cent. The professors in other biosciences were lowest, with 42 per cent. Among the associate professors, those in health follow psychology at 57 per cent, with other biosciences again lowest (41 per cent). Assistant professors in the social sciences are next below psychology with 64 per cent, and the basic medical sciences are lowest (35 per cent).

On the whole, the relation between total income and base salary is quite high, as Table 3.20 shows. The correlation between base salary and total income is 1.00 among university professors on academic-year contracts and .83 among professors on calendar-year contracts. Figures for assistant professors are .93 for academic-year contracts and .71 for calendar-year contracts. Among the associate professors, the correlation between base salary and total income is .64 for those on academic-year contracts and .77 for those on calendar-year contracts.

Thus, in general, base salary and total income are highly congruent. Since the greatest part of any faculty member's income is derived from his base salary, this is hardly surprising.

But it is rather surprising to note that academic rank explains as little of the variance in outside income as does teaching field. Rank explains 5 per cent and field 2 per cent for the academic year, and rank and field both explain 2 per cent for the calendar year. Clearly other factors are far more important than the ones we have heretofore taken into account. One reason may be that we have simply tapped the wrong kind of variable. That professors are paid more than instructors is simply a part of the structure of

academia, but the desire to do extra work for extra money is undoubtedly a much more idiosyncratic matter.

TABLE 3.19

PER CENT OF FACULTY ON 11-12 MONTH CONTRACTS WHO RECEIVE ANY OUTSIDE INCOME, BY TEACHING FIELD AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	59 (444)	53 (317)	53 (385)	40 (161)	53 (1,351)
Biosciences	50 (153)	46 (115)	39 (109)	35 (20)	45 (407)
Basic medical sciences	57 (87)	50 (66)	35 (68)	-[a] (14)	48 (240)
Other biosciences	42 (66)	41 (49)	46 (41)	- (6)	41 (167)
Health	53 (101)	57 (86)	50 (130)	37 (102)	48 (433)
Psychology	90 (21)	85 (20)	81 (26)	- (3)	85 (73)
Social sciences	72 (75)	50 (44)	64 (61)	- (17)	63 (201)
Mathematics	- (18)	- (14)	- (19)	- (12)	62 (66)
Physical sciences	62 (76)	42 (38)	58 (40)	- (7)	54 (171)

[a]Too few cases for reliable percentaging.

TABLE 3.20

RANK-ORDER CORRELATION (RHO) OF MEDIAN TOTAL INCOME WITH MEDIAN BASE SALARY, BY CONTRACT PERIOD AND ACADEMIC RANK: 1961-62 (UNIVERSITIES ONLY)

Contract Period	Professor	Associate Professor	Assistant Professor
9-10 months	+1.00	+.64	+.93
11-12 months	+ .83	+.77	+.71

Sources of Outside Income

The OE question on sources of other income went into considerable detail, but we shall be concerned here only with a general overview of this matter. The major source of other earnings for faculty members on academic-year contracts was summer teaching,[6] as Table 3.21 shows. The table also shows how minor this activity was as a source of other income for calendar-year faculty members, although such persons in institutions other than universities were moderately likely to show earnings from this source.

TABLE 3.21

PER CENT RECEIVING ANY INCOME FROM SUMMER TEACHING, BY CONTRACT PERIOD, TYPE OF INSTITUTION, AND ACADEMIC RANK: 1961-62

Contract Period and Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
9-10 months:					
University . . .	41 (432)	52 (342)	47 (382)	46 (179)	46 (1,355)
Other	54 (426)	48 (368)	50 (477)	36 (249)	48 (1,555)
All institutions . . .	44 (858)	50 (710)	49 (859)	40 (428)	47 (2,910)
11-12 months:					
University . . .	4 (444)	8 (317)	11 (385)	10 (161)	8 (1,351)
Other	23 (163)	22 (112)	20 (136)	22 (65)	21 (490)
All institutions . . .	9 (607)	12 (429)	13 (521)	13 (226)	11 (1,841)

The data on teaching field (not displayed here) also show why the health professionals were unlikely to report large outside incomes. They

[6] This category includes "other teaching" and may contain a certain amount of moonlighting. Other categories were royalties, speeches, consultant fees, other research, other professional employment, nonprofessional employment, and retirement from another system.

did rather little summer teaching. Psychologists, on the other hand, were above average on this source, as they were on all the others. For the most part all sources except summer teaching made relatively minor contributions to a person's outside income. But, drawing more heavily than average on all sources, psychologists were able to forge well ahead of the pack. The two most important sources of outside income for psychologists were royalties and consultation. Both are correlated with rank, and university psychologists did particularly well in all ranks. The physical scientists followed the psychologists, as earlier data would indicate.

Before leaving the subject of outside sources, we should point out that the only major difference in source of other income between faculty members on academic-year and those on calendar-year contracts was in summer teaching. Naturally enough, the former did a great deal more summer teaching than the latter.

Summary

First, and obviously, income is positively associated with academic rank.

Faculty members on calendar-year contracts earn more than those on academic-year contracts.

Faculty members in universities are more highly paid than those in other kinds of institutions, and the difference increases with academic rank.

On academic-year contracts, physical scientists and psychologists earn the most money, health faculty the least. On calendar-year contracts, health professionals and basic medical scientists have the highest earnings and social scientists the lowest.

Outside earnings generally do not eradicate the disparities noted above.

The major source of outside income among academic-year faculty members is summer teaching. It was relatively minor among calendar-year faculty members. Other sources of income did not differ by type of institution.

The major source of variation in base salary and total income tapped in this report is academic rank, which explains between one-half and one-third of the variance. Type of institution explains about 7 per cent and teaching field from 1 to 6 per cent. The last two are therefore not important sources of variation in the salaries of faculty members in health-related fields.

CHAPTER IV

PROFESSIONAL MOBILITY

College faculties are a notoriously mobile lot. They seem to have little reluctance to change jobs, for, as many observers have pointed out, an increase in rank is likely to be an inducement to move. And the old institution is as likely as not to have little power to keep them. Since an important determinant of one's professional standing is the regard of others in his discipline--not in his institution--the person who chooses the path of research or scholarship has few ties to any given university.

Such relatively free mobility may make for serious problems of continuity in a department or a school. The curriculum may be disrupted, planning may be thrown off, graduate students' degree programs may be delayed, research programs may be slowed down. Yet, given the current shortage of faculty members, there are few compelling reasons for staying where one is.

This chapter will examine several aspects of professional mobility, starting with the previous positions of the 1962-63 faculty, their upward mobility within their current institution, and their plans for the future --in terms of prospects of a move next year, interest in a new job, approaches by potential employers, and the role of their current institution in their entire career.

Prior Employment

Though some information on the employment history of individual teachers is available, most of the data on professional mobility collected in this survey deal with plans for the future. We shall begin with the data on previous experiences. Table 4.1 shows the employment status of faculty members before they joined their present institution. The three

categories of previous employment are (a) employment at another college or university; (b) being a student; and (c) "other," which includes a variety of categories such as primary or secondary education, business, and so on.

TABLE 4.1

PRIOR EMPLOYMENT STATUS OF FACULTY MEMBERS, BY TEACHING FIELD

Teaching Field	Prior Employment Status			Total	
	In Higher Education	Student	Other	Per Cent	N
All selected science fields	35	33	32	100	5,558
Biosciences	37	36	27	100	1,022
Basic medical sciences .	37	36	27	100	397
Other biosciences . . .	37	36	27	100	625
Health	28	29	43	100	699
Psychology	38	34	28	100	362
Social sciences	40	34	26	100	1,640
Mathematics	33	29	38	100	721
Physical sciences	32	34	34	100	1,114

As Table 4.1 shows, about one-third of the faculty in the selected science fields are in each of the three categories. The two bioscience groups have identical distributions, with 37 per cent coming from employment in higher education, 36 per cent being students, and 27 per cent from other employers, somewhat below the mean. Health, on the other hand, had the smallest percentage coming from higher educational institutions and the largest from "other." Apparently the nurses and physicians came into their academic jobs from professional ones rather than directly from other universities and colleges. In general, psychology is quite close to the mean, though there are slightly fewer faculty members from other employers. The social sciences had the smallest number coming from other employers and

the largest from employment in higher education. Mathematics, at 38 per cent, is second to health in the percentage coming from nonacademic employers but is rather close to the mean elsewhere. Of all the fields, the physical sciences are closest to the mean, with 32 per cent coming from academic institutions, 34 per cent from other employers, and 34 per cent students. In fact, few fields deviate far from the mean. The largest deviation in any direction for the academic institution category, health, is seven percentage points below the mean. None of the fields is much more likely than average to draw on neophytes--the students--although health and mathematics are slightly less likely than others to do so.

Promotion

Once at their current institutions, what are the employment histories of the faculty members in the sample? Again data are not plentiful in this regard, but one table available to us showed the distribution of faculty members by rank, type of institution, and teaching field, plus the rank held at the time of joining their present institution. A simple conversion made the table show the percentage who were promoted. Thus if a full professor joined his institution while holding a lower rank, he must have been promoted. The same applies to associate and assistant professors. The question is as follows: "Check your rank or title for each period indicated. . . . Column c refers to your rank at this institution at the time you became a staff member at or above the instructor level." Given the wording, current instructors could not have been promoted, so they will be excluded from this discussion.

As Table 4.2 shows, faculty members in universities are somewhat more likely to have been promoted than those in other institutions, 64 per cent to 57 per cent. The difference between universities and other institutions is small for assistant professors and associate professors--four percentage points in the former and three points in the latter rank--whereas it increases to eight percentage points (74 to 66 per cent) among professors.

TABLE 4.2

PER CENT PROMOTED DURING STAY AT PRESENT INSTITUTION, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	All Ranks[a]
Universities	74 (1,016)	75 (734)	43 (868)	64 (2,618)
Other	66 (655)	72 (585)	39 (771)	57 (2,011)
All institutions	71 (1,671)	74 (1,319)	40 (1,639)	61 (4,629)

[a]Includes professors, associate professors, and assistant professors only and not instructors, "no rank," or "other rank."

There is a very definite relationship between academic rank and promotion, as Table 4.2 also shows. The differences between professors and associate professors are slight. Between two-thirds and three-fourths had been promoted to these ranks, whereas only about two-fifths of the assistant professors had been promoted. Thus an interesting feature of Table 4.2 is a "great tenure divide." The teachers in the tenured ranks --professors and associate professors--are much more often promoted than are assistant professors. These data may reflect either of two quite different situations: (1) promotion chances for instructors may be relatively poor, or (2) some faculty members may start their academic employment as assistant professors rather than as instructors. In any case, it seems clear that most upward mobility in the profession takes place intramurally rather than extramurally. A substantial minority may choose the purportedly faster route involving a job change, but most do not. It is unfortunate, however, that it was impossible to control for institutional quality. Geographical mobility rates might well have been higher in the better schools.

The difference between professors in the universities and those in other institutions is the greatest for any rank. Table 4.3 gives data on the most obvious interpretation of this difference--that there are simply more professorships in universities than in other institutions; 34 per cent of all university faculty are professors, compared with 27 per cent in other institutions. Hence, the chances of becoming a professor are greater in universities.

TABLE 4.3

PER CENT HAVING RANK OF PROFESSOR, BY TYPE OF INSTITUTION

Universities	34 (3,004)
Other	27 (2,393)
All institutions	31 (5,397)

Table 4.4 examines promotions by teaching field and type of institution. The "All institutions" column of this table shows that other bioscientists were more likely to have been promoted than were faculty members in any other field. All fields cluster quite close to the mean. The two bioscience groups are quite similar, the medical at 63 and the other at 65 per cent. In universities the bioscientists and health professionals were most likely to have been promoted (69 per cent). Least likely to be promoted are psychologists, at 56 per cent. In other institutions, however, health ranked low (42 per cent) and mathematics high (61 per cent).

Table 4.5, showing promotion within universities by field and rank, illustrates in quite graphic detail the tenure gap previously mentioned. In only one field, health, are assistant professors more likely to have been promoted from the rank of instructor than not: 68 per cent of the assistant professors had been promoted. Psychology is a field in which promotions from instructor to assistant professor are rare, 25 per cent of

the assistant professors having originally been instructors. These findings are not at all surprising in light of what we already know about the distribution of academic rank between fields. Health has the most instructors and psychology the fewest, as Table 4.6 shows. Thus a major variable in promotion to an assistant professorship is whether beginning faculty members in a field are originally hired as assistant professors or as instructors.

TABLE 4.4

PER CENT PROMOTED DURING STAY AT PRESENT INSTITUTION, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	Universities	Other	All Institutions
All selected science fields	64 (2,618)	57 (2,011)	61 (4,629)
Biosciences	69 (585)	55 (337)	64 (922)
Basic medical sciences	67 (291)	47 (79)	63 (470)
Other biosciences	70 (294)	58 (258)	65 (552)
Health	69 (453)	42 (52)	62 (505)
Psychology	56 (174)	54 (149)	55 (323)
Social sciences	61 (692)	59 (675)	60 (1,367)
Mathematics	59 (233)	61 (302)	60 (535)
Physical sciences	63 (481)	57 (496)	60 (977)

TABLE 4.5

PER CENT PROMOTED DURING STAY AT PRESENT INSTITUTION, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	All Ranks
All selected science fields	74 (1,016)	75 (734)	43 (868)	64 (2,618)
Biosciences	76 (253)	82 (173)	44 (159)	69 (585)
Basic medical sciences	71 (118)	81 (90)	47 (83)	67 (291)
Other biosciences	79 (135)	83 (83)	41 (76)	70 (294)
Health	67 (132)	73 (124)	68 (197)	69 (453)
Psychology	71 (58)	72 (57)	25 (59)	56 (174)
Social sciences	73 (275)	73 (192)	36 (225)	61 (692)
Mathematics	79 (77)	81 (59)	30 (97)	59 (233)
Physical sciences	76 (221)	70 (129)	33 (131)	63 (481)

TABLE 4.6

PER CENT HAVING RANK OF INSTRUCTOR, BY TEACHING FIELD (UNIVERSITIES ONLY)

All selected science fields	13	(3,004)
Biosciences	6	(624)
Basic medical sciences	5	(307)
Other biosciences	7	(317)
Health	25	(601)
Psychology	3	(179)
Social sciences	11	(778)
Mathematics	23	(302)
Physical sciences	8	(520)

Chart 4.1 shows the relation between the percentage of assistant professors who were promoted and the percentage of instructors in the selected science fields. On the whole, the greater the percentage of instructors, the more likely were assistant professors to have been promoted. Exceptions are both bioscience groups, which have relatively few instructors and many promotions, and mathematics, which has many instructors and few promotions.

Among associate professors, other bioscientists are most likely to be promoted at 83 per cent, followed by basic medical scientists and mathematicians at 81 per cent (Table 4.5). Least likely to be promoted are physical scientists at 70 per cent. The range of the promotion chances for associate professors is not very great across the fields. The same is true for professors: the most likely to be promoted are mathematicians and other bioscientists both at 79 per cent. The least likely to be promoted are health professionals at 67 per cent. Again the range is quite small. The most striking feature of the table, however, remains the difference between promotion to associate professor and that to assistant professor. A good part of this difference can be explained by the number of instructors in each field.

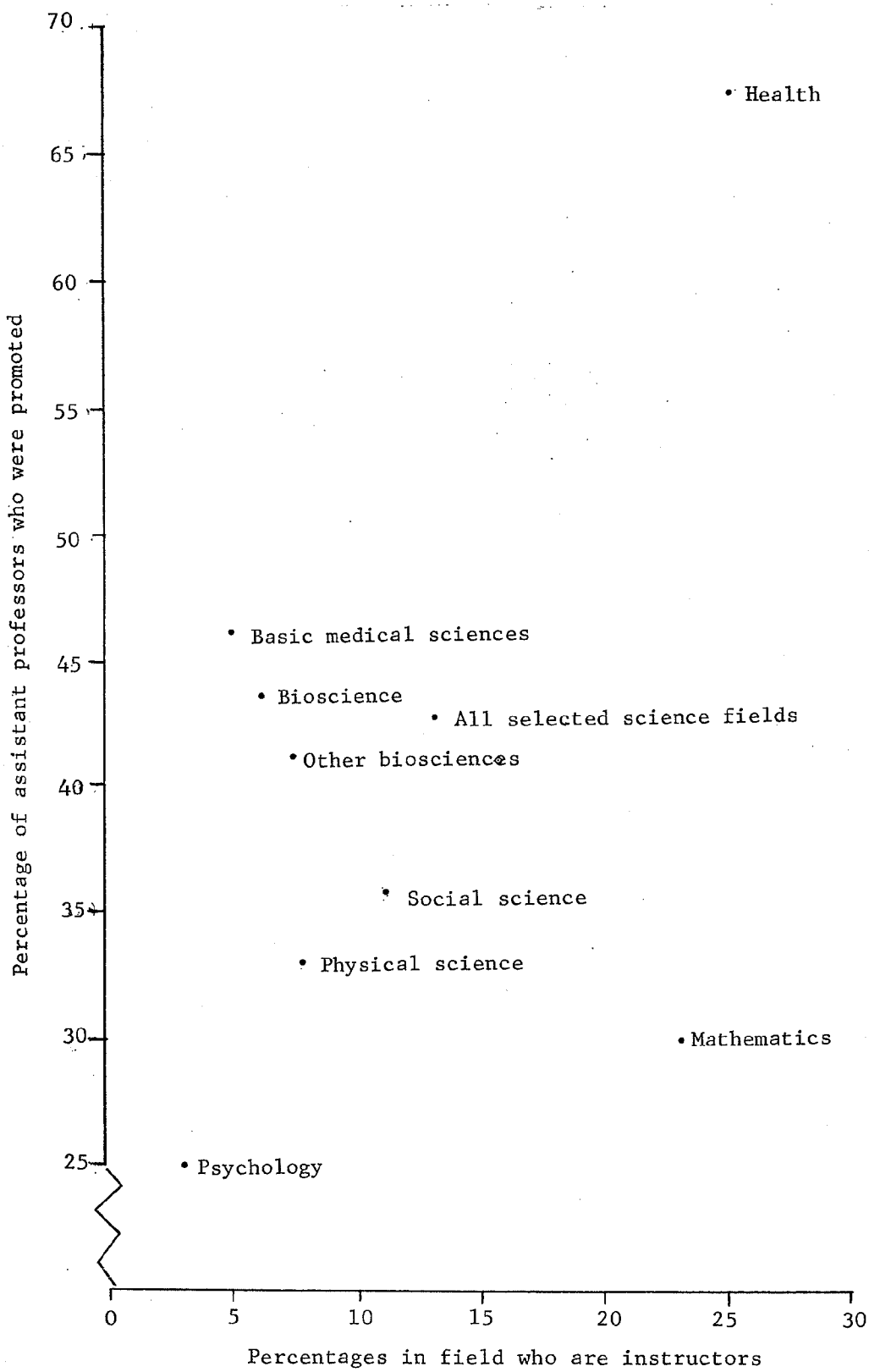
Expected Mobility

Plans for Next Year

The Office of Education questionnaire requested information on several aspects of future mobility--employment plans for the immediate future and for the long-range career, plans for career activities, etc. We shall look first at prospective changes in employment status, dealing with the immediate future. Tables 4.7-4.9 show employment plans for the next academic year. ("Next" refers to 1963-64, since data were collected in the spring of the 1963 academic year.) Table 4.7 presents us with percentage planning <u>not</u> to be at their present institution "next" year, i.e., the percentage expecting to move. At first glance, the mobility rates appear numerically rather small, 15 per cent in universities and

CHART 4.1

PERCENTAGE OF ASSISTANT PROFESSORS WHO WERE PROMOTED, BY PERCENTAGE IN FIELD WHO ARE INSTRUCTORS (UNIVERSITIES ONLY)



17 per cent in other institutions. In universities, very few senior faculty members plan to leave one in ten. Two out of ten assistant professors expected to move, while one instructor in four expected to do so. In other institutions the figures for professors, associates, and assistants are nearly the same as for those in universities, although instructors in other institutions are somewhat more likely than their counterparts in universities to anticipate leaving, 32 per cent of them compared with 24 per cent in universities.

TABLE 4.7

PER CENT PLANNING NOT TO BE AT PRESENT INSTITUTION NEXT YEAR, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks[a]
Universities . .	10 (1,016)	12 (734)	19 (868)	24 (386)	15 (3,004)
Other	9 (655)	14 (585)	19 (771)	32 (382)	17 (2,393)
All institutions . .	11 (1,671)	13 (1,319)	19 (1,639)	28 (768)	16 (5,397)

[a]Does not include faculty members with "no rank" or "other rank."

Table 4.8, showing the same data by teaching field and institution type, reveals very slight differences among fields in regard to plans for next year's employer. The mean for science and health fields is 16 per cent, with the lowest two groups being the basic medical scientists (13 per cent) and the physical scientists (11 per cent). The group most likely to plan a move is the social scientists at 20 per cent--a range of only nine percentage points. In universities, the most stable groups are again the basic medical scientists and physical scientists at 12 per cent each, while the group least likely to plan on staying is the mathematicians at 21 per cent--a range of only nine percentage points. In other institutions,

TABLE 4.8

PER CENT PLANNING NOT TO BE AT PRESENT INSTITUTION NEXT YEAR, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	University	Other	All Institutions
All selected science fields	15 (3,004)	17 (2,939)	16 (5,397)
Biosciences	13 (624)	19 (377)	15 (1,001)
Basic medical sciences	12 (307)	14 (84)	13 (391)
Other biosciences	14 (317)	20 (293)	16 (610)
Health	12 (601)	15 (80)	12 (681)
Psychology	17 (179)	18 (173)	18 (352)
Social sciences	18 (778)	21 (809)	20 (1,587)
Mathematics	21 (302)	18 (391)	19 (693)
Physical sciences	12 (520)	10 (563)	11 (1,083)

TABLE 4.9

PER CENT PLANNING NOT TO BE AT PRESENT INSTITUTION NEXT YEAR, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	10 (1,016)	12 (734)	19 (868)	24 (386)	85 (3,004)
Biosciences	11 (253)	9 (173)	16 (159)	38 (39)	13 (624)
Basic medical sciences	11 (118)	10 (90)	16 (83)	-[a] (16)	12 (307)
Other biosciences	10 (135)	8 (83)	17 (76)	51 (23)	14 (317)
Health	3 (132)	7 (124)	16 (197)	18 (148)	12 (601)
Psychology	3 (58)	25 (57)	22 (59)	- (5)	17 (179)
Social sciences	13 (275)	15 (192)	24 (225)	26 (86)	18 (778)
Mathematics	19 (77)	15 (59)	20 (97)	28 (69)	21 (302)
Physical sciences	10 (221)	11 (129)	14 (131)	18 (39)	12 (520)

[a]Too few cases for reliable percentaging.

the figures follow much the same pattern. The physical scientists are least likely to plan on leaving, 10 per cent expecting to do so, while at the other end, 21 per cent of the social scientists plan to leave.

Despite fears that a substantial research grant will make a faculty member independent of his institution and more willing to move, taking his grant with him, the opposite seems to be the case. Persons in two of the heavily supported fields--the basic medical sciences and the physical sciences--are potentially least mobile, and those in grant-poor fields are most likely to plan on leaving. It is in the fields with the heaviest teaching loads that the potentially mobile are most likely to be found.

It is not hard to see why. In the first place, faculty members do not like heavy teaching loads, all exhortations to guide and mold the young notwithstanding. In the second place, a researcher's impedimenta--his apparatus, his assistants, etc.--are not easy to move. And, of course, high-energy accelerators are notoriously hard to move and sometimes to place. True, an institution can make tempting offers of equipment and assistance, but it will do this only to the few brightest stars in the research firmament.

Another perspective on these findings is given by the following. If each person moved at the average rate, prevailing mobility rates indicate that every faculty member in the United States would change jobs once in the next six years. Since all will not make a change, it follows that some will move more frequently. Among the least mobile group--physical scientists in other institutions--complete turnover would take ten years. But it would take only four years in the most mobile group--mathematicians in universities.

Data for universities given in Table 4.9 show again the rather narrow range among the three highest ranks. Practically none (3 per cent) of the professors in health and psychology plan a job change. Mathematicians are most likely to move (19 per cent). Among associate professors, those least likely to move are health professionals (7 per cent); those

most likely to do so are psychologists (25 per cent). Among assistant professors the overall percentage planning to change jobs is somewhat higher. The field with most stability is physical science (14 per cent); the least stable is social science (24 per cent). Instructors display a somewhat wider range, with the other biosciences more likely to move than to stay (51 per cent).

Interest in Another Position

The data on plans for moving "next" year probably give a rather good indication of actual behavior, since they were gathered in the spring, when such plans should be rather well settled. Few faculty members (less than 5 per cent) were actively looking for another job at the time they answered the questionnaire.

Beyond actually moving, of course, there are other dimensions of mobility one of which is interest in another position. Our measure of interest will also take into account the faculty members who were looking. There are so few of them that a separate analysis would not be feasible, and their interest is manifest.[1]

Table 4.10 shows that more people were interested in another position than actually intended to move: 40 per cent of all faculty members indicated interest in another position. The degree of interest was not specified, however, so we cannot tell how intense or casual it might have been. In contrast to expected mobility, interest was not closely tied to academic rank: interest of professors was relatively low (32 per cent) and that of other ranks higher (falling between 42 and 45 per cent). The relation between rank and interest in other positions is markedly curvilinear in the universities, where professors were unlikely to be interested (30 per cent), associate and assistant professors more likely (43 and 46 per cent, respectively), and instructors less likely to be interested

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[1]The two questions are: (a) "Are you now actively looking for another position for the fall of 1963?" and (b) "If not actively looking, are you interested in other positions?"

(40 per cent). The same findings do not hold in other institutions. Relative to universities, the level of interest at other institutions is greater among professors, less among associates and assistants, and greater again among instructors.

TABLE 4.10

PER CENT INTERESTED IN ANOTHER POSITION,[a] BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks[b]
Universities .	30 (1,016)	43 (734)	46 (868)	40 (386)	39 (3,004)
Other	34 (655)	40 (585)	43 (771)	44 (382)	40 (2,393)
All institutions . .	32 (1,671)	42 (1,319)	45 (1,639)	42 (768)	40 (5,397)

[a]Includes those actually looking for a new job.

[b]Includes specified ranks only; does not include "no rank" or "other rank."

Table 4.11 gives data by teaching field and shows that the range of interest is not great. The field displaying most interest in a move is psychology at 45 per cent, only five percentage points above the mean. The two fields with least interest are health at 33 per cent and mathematics at 32 per cent, only eight points below the mean. In universities, the range is practically the same, from psychology (46 per cent) and basic medical sciences (44 per cent) to mathematics and health (tied for low at 34 per cent).

Controlling for academic rank within universities increases the spread among fields (Table 4.12). Among professors, the high is 37 per cent in the basic medical sciences and the low is 19 per cent in psychology, a range of eighteen percentage points. The next least interested field is health at 21 per cent. All other fields are very close to the mean.

Among associate professors, the most interested were the psychologists, 60 per cent of whom would consider another job. The psychologists were followed by the basic medical scientists, 51 per cent of whom claimed to be interested in moving. At the low end of the scale are health professionals (37 per cent) and mathematicians (25 per cent). The range of 35 per cent from 60 to 25 is considerably greater than any observed heretofore. Among assistant professors, psychologists are again the most interested in a different position. Their 63 per cent is seventeen percentage points above the mean and twenty-six points above the lowest group, health. Most of the other fields are very close to the mean, the greatest deviation being shown by social scientists, 52 per cent of whom indicated an interest in moving. Among the instructors, social scientists are the most likely to be interested in moving (49 per cent), mathematicians the least (33 per cent).

TABLE 4.11

PER CENT INTERESTED IN ANOTHER POSITION, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	Universities	Other	All Institutions
All selected science fields	39 (3,004)	40 (2,393)	40 (5,397)
Other	42 (624)	43 (377)	42 (1,001)
Basic medical sciences	44 (307)	44 (84)	44 (391)
Other biosciences	40 (317)	43 (293)	42 (610)
Health	34 (601)	26 (80)	33 (681)
Psychology	46 (179)	44 (173)	45 (352)
Social sciences	43 (778)	44 (809)	44 (1,587)
Mathematics	34 (302)	30 (391)	32 (693)
Physical sciences	36 (520)	41 (563)	39 (1,083)

TABLE 4.12

PER CENT INTERESTED IN ANOTHER POSITION, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	30 (1,016)	43 (734)	46 (868)	40 (386)	39 (3,004)
Biosciences . .	34 (253)	49 (173)	47 (159)	41 (39)	42 (624)
Basic medical sciences . .	37 (118)	51 (90)	47 (83)	-[a] (16)	44 (307)
Other biosciences . . .	31 (135)	47 (83)	47 (76)	39 (23)	40 (317)
Health	21 (132)	37 (124)	37 (197)	40 (148)	34 (601)
Psychology . . .	19 (58)	60 (57)	63 (59)	- (5)	46 (179)
Social sciences	34 (275)	43 (192)	52 (225)	49 (86)	43 (778)
Mathematics . .	31 (77)	25 (59)	43 (97)	33 (69)	34 (302)
Physical sciences	28 (221)	41 (129)	44 (131)	36 (39)	36 (520)

[a]Too few cases for reliable percentaging.

Offers from Elsewhere

Another aspect of potential mobility stems not from the interest of an individual but from the interest of an institution which may want to hire him. Another question, then, went as follows: "Have you received an offer of another job or a definite inquiry about your availability for a specific position?" This question includes two things: (1) actually getting an offer of a new position, or (2) being asked if one would be interested in moving; thus it is not a good measure of demand for faculty members. A department searching for new personnel will spread its net rather wide. Nonetheless, it is interesting that more persons received inquiries and indicated an interest in moving. As Table 4.13 shows, 53 per cent received

offers or inquiries, compared with the 40 per cent in Table 4.10 who said they might be interested in leaving. The curvilinearity of the relation between rank and receiving inquiries is not strong over all, but it is more marked in universities, where 52 per cent of the professors, 60 per cent of the associates, 61 per cent of the assistants, and only 49 per cent of the instructors received offers. This relationship seems easy enough to explain. Professors were less interested in moving and they received the fewer offers. The associates and assistants were more interested in moving and received more offers. Professional experience may also be related to the number of inquiries received. The associates and assistants have picked up some experience and still have much of their careers in front of them; thus they may be more desirable to employers than either professors or instructors. Instructors may be viewed as unknown and untried quantities and professors as at the end of their professional productivity. Still, practically one-half of the university instructors and professors received inquiries.

TABLE 4.13

PER CENT RECEIVING OFFERS OR INQUIRIES FROM OTHER INSTITUTIONS, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
Universities . .	52 (1,016)	60 (734)	61 (868)	49 (386)	56 (3,004)
Other	52 (655)	53 (585)	49 (771)	44 (382)	50 (2,393)
All institutions . . .	52 (1,671)	56 (1,319)	55 (1,639)	47 (768)	53 (5,397)

Table 4.14 shows that psychologists were most likely to receive an offer (65 per cent), mathematicians least likely (45 per cent). This range of twenty percentage points is somewhat greater than the range for having

an interest in another job. In universities, the psychologists were again most likely to receive an offer (68 per cent) higher by eight points than the basic medical scientists, social scientists and health teachers. Mathematicians and physical scientists were least likely to receive an inquiry (48 per cent).

TABLE 4.14

PER CENT RECEIVING OFFERS OR INQUIRIES FROM OTHER INSTITUTIONS, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	Universities	Other	All Institutions
All selected science fields	56 (3,004)	50 (2,393)	53 (5,397)
Biosciences	55 (624)	52 (377)	53 (1,001)
Basic medical sciences	60 (307)	55 (84)	59 (391)
Other biosciences . .	50 (317)	50 (293)	50 (610)
Health	60 (601)	59 (80)	60 (681)
Psychology	68 (179)	61 (173)	65 (352)
Social sciences	60 (778)	53 (809)	56 (1,587)
Mathematics	48 (302)	42 (391)	45 (693)
Physical sciences . . .	48 (520)	47 (563)	48 (1,083)

Within fields the curvilinearity of the relation between academic rank and receiving an inquiry breaks down (Table 4.15). The two fields lowest over all--mathematics and physical sciences--seem to be low precisely because their associate and assistant professors are no more likely to receive inquiries than are full professors and instructors. In the other biosciences, the senior ranks are less likely to

receive inquiries than the junior ranks. In psychology, the professors are low and the associates and assistants are high. In the basic medical sciences, the associates are high while the full and assistant professors are low. The other two fields--health and social science--follow the overall pattern, with professors and instructors low and associates and assistants high.

TABLE 4.15

PER CENT RECEIVING OFFERS OR INQUIRIES FROM OTHER INSTITUTIONS, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields . .	50 (1,016)	60 (734)	61 (868)	49 (368)	56 (3,004)
Biosciences . . .	51 (253)	58 (173)	57 (159)	54 (39)	55 (624)
Basic medical sciences . .	58 (118)	67 (90)	58 (83)	-[a] (16)	60 (307)
Other biosciences	46 (135)	48 (83)	55 (76)	57 (23)	50 (317)
Health	53 (132)	72 (124)	66 (197)	49 (148)	60 (601)
Psychology	55 (58)	75 (57)	73 (59)	- (5)	68 (179)
Social sciences .	57 (275)	60 (192)	67 (225)	50 (86)	60 (778)
Mathematics . . .	50 (77)	46 (59)	48 (97)	48 (69)	48 (302)
Physical sciences	48 (221)	48 (129)	50 (131)	44 (39)	48 (520)

[a]Too few cases for reliable percentaging.

The foregoing tables show a rather interesting ordering. In the 1962-63 academic year, American faculty members were more likely to receive an inquiry from a prospective employer than to be interested in a new job and were more likely to be interested than actually to move.

Anticipated Career Mobility

Another perspective on mobility takes into account a somewhat longer time span. As well as being asked about plans for "next year," respondents were also asked about plans for the remainder of their career: "Do you expect to remain at this institution until you retire?" Table 4.16, giving plans to remain until retirement by type of institution and rank, shows something not revealed by Table 4.7. There is an extremely strong correlation between rank and plans for staying until retirement. In universities, 77 per cent of the professors, 50 per cent of the associate professors, 24 per cent of the assistant professors, and only 13 per cent of the instructors plan to stay until retirement.

TABLE 4.16

PER CENT PLANNING TO REMAIN AT PRESENT INSTITUTION UNTIL RETIREMENT, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks[a]
Universities . .	77 (1,016)	50 (734)	24 (868)	13 (386)	47 (3,004)
Other	74 (655)	51 (585)	28 (771)	14 (382)	44 (2,393)
All institutions	76 (1,671)	50 (1,319)	26 (1,639)	13 (768)	45 (5,397)

[a]Includes specified ranks only; does not include "no rank" or "other rank."

In fact, the relationship between rank and intention to remain is in some ways rather surprising. That there is as large a gap between the percentages for full and associate professors as between the latter and assistant professors--77 to 50 to 24 per cent--indicates that tenure as such

seems to play a rather small role in the decision to remain at one institution until retirement. If tenure were a factor, the twenty-seven-percentage-point difference between professors and associates would not be matched by the twenty-six-point difference between associates and assistants. Instead, one would expect the professors and associate professors to be much alike, with many in both groups expecting to remain, followed at some distance by the assistant professors. In fact, only half of the associate professors intended to remain in their present institution until retirement, despite the fact that most of them have tenure.

The results can probably best be explained as a simple statistical function of age. Professors are older than associates, who in turn are older than assistants, and the older one is, the less time there is between the present and the day he retires. The professor thus has fewer chances of changing his employer, hence the correlation between rank and plans for remaining. The effect of rank on plans is so great that we shall discuss Table 4.17 only briefly. There is very little difference among the fields. In universities the greatest discrepancy from the mean of 47 per cent is other biosciences, with 57 per cent planning to remain. The lowest group was the psychologists (40 per cent). In the other institutions the only group really far removed from the mean was health, where only 32 per cent planned to remain, compared with an average of 44 per cent.

TABLE 4.17

PER CENT PLANNING TO REMAIN AT PRESENT INSTITUTION UNTIL RETIREMENT, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	Universities	Other	All Institutions
All selected science fields	47 (3,004)	44 (2,393)	45 (5,397)
Biosciences	52 (624)	44 (377)	49 (1,001)
Basic medical sciences	46 (307)	43 (84)	45 (391)
Other biosciences	57 (317)	45 (293)	51 (610)
Health	44 (601)	32 (80)	43 (681)
Psychology	40 (179)	42 (173)	41 (352)
Social sciences	45 (778)	40 (809)	42 (1,587)
Mathematics	43 (302)	51 (391)	48 (693)
Physical sciences	52 (520)	47 (563)	49 (1,083)

In Table 4.18, where the full data are given for universities, the relationship between rank and plans to remain holds up for every possible comparison of percentages within fields. Fields high in one rank are not necessarily high in others, but these discrepancies do not alter the great effects of academic rank.

TABLE 4.18

PER CENT PLANNING TO REMAIN AT PRESENT INSTITUTION UNTIL RETIREMENT, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields . .	77 (1,016)	50 (734)	24 (868)	13 (386)	47 (3,004)
Biosciences . . .	79 (253)	46 (173)	25 (159)	13 (39)	52 (624)
Basic medical sciences . .	73 (118)	40 (90)	22 (83)	-[a] (16)	46 (307)
Other biosciences	84 (135)	52 (83)	28 (76)	13 (23)	57 (317)
Health	83 (132)	60 (124)	32 (197)	11 (148)	44 (601)
Psychology . . .	84 (58)	30 (57)	10 (59)	- (5)	40 (179)
Social sciences .	75 (275)	51 (192)	17 (225)	6 (86)	45 (778)
Mathematics . . .	68 (77)	59 (59)	31 (97)	17 (69)	43 (302)
Physical sciences	76 (221)	50 (129)	21 (131)	28 (39)	52 (520)

[a]Too few cases for reliable percentaging.

Returning for the moment to the findings of Chapter II, we can see one of the reasons why professors tend to have administrative duties. They are the only group more likely than not to be around for a while. Their participation in administrative activities not only draws on their greater experience but increases the likelihood that policies will be consistently formulated and carried out.

Expectations of Remaining in Academia

Except for professors, then, most faculty members do not think they will remain in their present institution until retirement. For some purposes, however, a far more pertinent matter is the extent to which America's present faculty members expect to remain in the academic world. The question getting at this aspect of mobility plans was couched in somewhat different terms from the one on institutional intentions: "What do you expect to be your main life employment? (NOTE: If you are nearing retirement, check what your main employment has been.)" As Table 4.19 shows, nine out of ten faculty members presently in academia expect their main life employment to be college teaching. The relation between this question and academic rank is for the most part slight. All faculty members except instructors are very likely to plan on remaining in college teaching. The drop for instructors is moderate: about eight in ten of them expect to stay in college teaching. More important than the relation with rank is the virtual unanimity of faculty members on their intentions to remain in college teaching.

TABLE 4.19

PER CENT PLANNING TO REMAIN IN COLLEGE TEACHING, BY TYPE OF INSTITUTION AND ACADEMIC RANK

Type of Institution	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks[a]
Universities . .	91 (1,016)	88 (734)	87 (868)	78 (386)	87 (3,004)
Other	93 (655)	93 (585)	93 (771)	84 (382)	92 (2,393)
All institutions	92 (1,671)	90 (1,319)	90 (1,639)	81 (768)	89 (5,397)

[a]Includes specified ranks only, does not include "no rank" or "other rank."

A rather interesting finding is revealed in Table 4.20, which gives the relation of teaching field and type of institution to college teaching plans. The grand total is 89 per cent. No field is substantially above that level, whereas two, health (78 per cent) and psychology (84 per cent) are somewhat below it. In universities, the highest deviation from the mean is shared by mathematics, physical sciences, and social sciences. The only field falling much below the mean is again health at 78 per cent. In other institutions, however, a somewhat different picture emerges. The biosciences turn out to be the most faithful to college teaching, although they are quite close to the mean, their total of 95 per cent being three percentage points above average. Health and psychology are farthest below the mean, both at 82 per cent. Health is consistently below the mean; psychology is below in other institutions only.

TABLE 4.20

PER CENT PLANNING TO REMAIN IN COLLEGE TEACHING, BY TEACHING FIELD AND TYPE OF INSTITUTION

Teaching Field	Universities	Other	All Institutions
All selected science fields	87 (3,004)	92 (2,393)	89 (5,397)
Biosciences	87 (624)	95 (377)	90 (1,001)
Basic medical sciences	88 (307)	94 (84)	89 (391)
Other biosciences . .	87 (317)	95 (293)	91 (610)
Health	78 (601)	82 (80)	78 (681)
Psychology	85 (179)	82 (173)	84 (352)
Social sciences	91 (778)	93 (809)	92 (1,587)
Mathematics	92 (302)	91 (391)	92 (693)
Physical sciences . . .	91 (520)	93 (653)	92 (1,083)

In universities only a few fields stand out as higher or lower than the academic rank means (Table 4.21). Mathematics is rather consistently higher, and health is consistently lower except among professors, who are very close to the mean at 92 per cent. The other fields are rather spotty. The social sciences are close to the mean in the senior ranks and above it to some extent in the junior ranks. Except for professors, physical scientists are above the mean. None of this changes the important fact that faculty members are virtually unanimous in their commitment to academic career.

TABLE 4.21

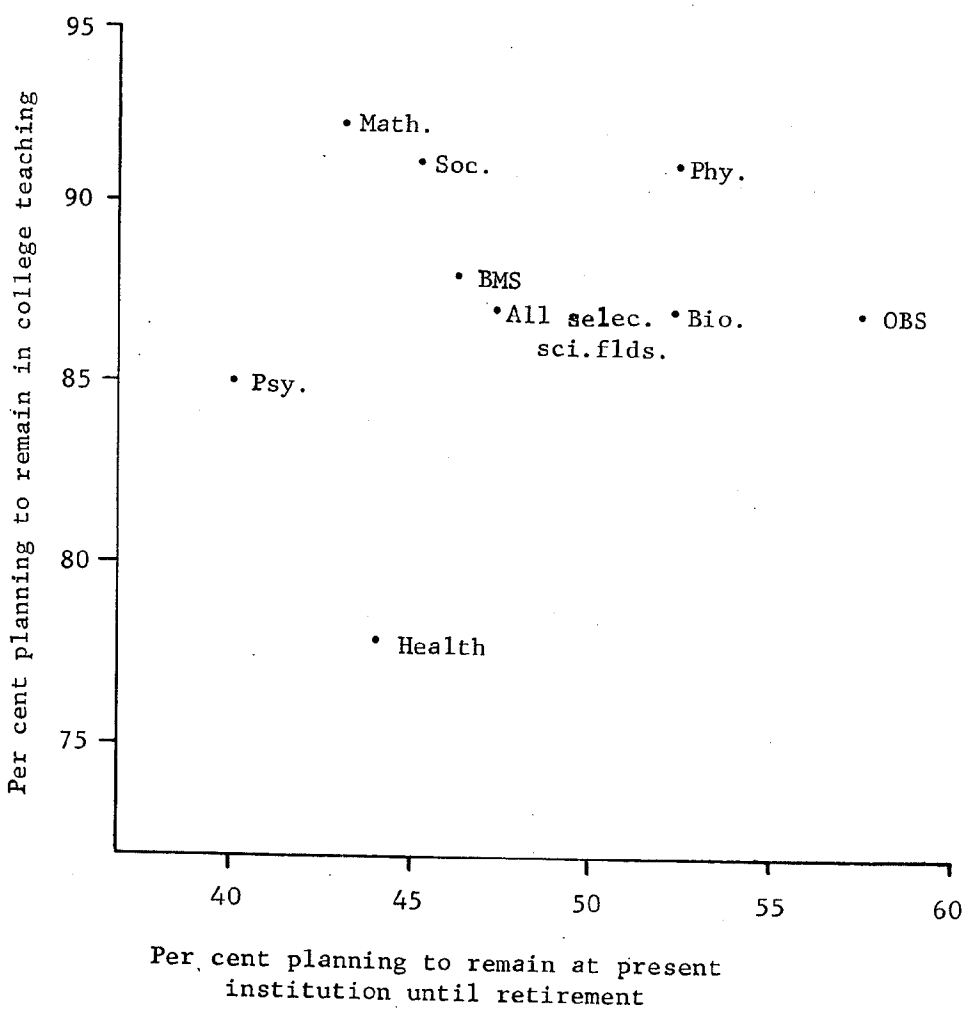
PER CENT PLANNING TO REMAIN IN COLLEGE TEACHING, BY TEACHING FIELD AND ACADEMIC RANK (UNIVERSITIES ONLY)

Teaching Field	Professor	Associate Professor	Assistant Professor	Instructor	All Ranks
All selected science fields	91 (1,016)	88 (734)	87 (868)	78 (386)	87 (3,004)
Biosciences . .	91 (253)	84 (173)	86 (159)	79 (39)	87 (624)
Basic medical sciences . .	93 (118)	86 (90)	86 (83)	-[a] (16)	88 (307)
Other biosciences . . .	89 (135)	83 (83)	87 (76)	87 (23)	87 (317)
Health	92 (132)	82 (124)	76 (197)	64 (148)	78 (601)
Psychology . . .	84 (58)	88 (57)	85 (59)	- (5)	85 (179)
Social sciences	91 (275)	91 (192)	93 (225)	88 (86)	91 (778)
Mathematics . .	95 (77)	97 (59)	91 (97)	87 (69)	92 (302)
Physical sciences	89 (221)	93 (129)	92 (131)	90 (39)	91 (520)

[a]Too few cases for reliable percentaging.

CHART 4.2

PER CENT PLANNING TO REMAIN IN COLLEGE TEACHING
BY PER CENT PLANNING TO REMAIN AT PRESENT
INSTITUTION UNTIL RETIREMENT AND
TEACHING FIELD
(UNIVERSITIES ONLY)



As Chart 4.2 shows, there is no relationship in universities between the percentage planning to remain in college teaching and the percentage planning to remain in their present institution until retirement. This fact is probably as important as any of the other findings we have noted. In the first place, it seems rather clear that, though American faculty members probably have been and intend to remain institutionally mobile, few of them have any real intention of leaving the academic world.

In addition, about one-third of new faculty appointments come from outside the academic world (Table 4.1). American academia seems to come off rather well in this exchange.

It is unfortunate that a few attitudinal measures were not included in the Office of Education study. Of particular relevance would have been a measure getting at the orientation of faculty members toward their current positions. In the sociological literature, the appropriate distinction is between "locals" and "cosmopolitans."[2] The former see their careers as developing within the walls of one institution, to which they have committed themselves. The latter are committed to their disciplines, not to their institutions. Clearly the cosmopolitans are much more likely to consider a move. This variable's effects on mobility plans at different career stages and in different fields would have added greatly to this discussion.

Summary

College faculty members in a given institution come about equally from each of three sources: other colleges or universities, graduate students, and other sources.

Faculty members are rather likely to plan on changing employers, especially when the results are projected over a moderately long time span. If everyone moved at the average rate, each faculty member would change jobs once every six years. Variations by field are small, but faculty in the basic medical sciences, the physical sciences, and health are unlikely to expect to move "next year," while those in mathematics

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[2]For a discussion pertinent to academia, see Gouldner (1957, 1958).

and the social sciences are most likely to expect a move. Expected mobility is inversely related to rank: professors are least likely to move, instructors most likely to do so.

Interest in another position is greater than actual plans for a move. Psychologists, social scientists, and basic medical scientists are relatively interested, mathematicians and health professionals relatively uninterested. More faculty members report having received an offer or inquiry than indicate interest in a new position. Psychology is high in this regard, mathematics and the physical sciences low.

Plans to remain at one's present institution until retirement are directly related to rank. About three-fourths of the professors plan to do so, compared with about one-fourth of the assistant professors and even fewer of the instructors. Other bioscientists are most loyal to their present institutions, psychologists least so, and basic medical scientists about average.

Nearly all faculty members plan to remain in college teaching throughout their careers (about nine in ten have such plans). There is some relation with academic rank, professors being most committed to teaching. The relation with teaching field is slight; health is the only field at all unlikely to have a strong commitment to college teaching.

In general, then, academicians are institutionally rather mobile, not uninterested in moving, rather likely to receive an offer from elsewhere, but highly committed to college teaching. Even though a person's current institution cannot be guaranteed of his services over the span of his career, he will probably still be in academia.

CHAPTER V

SUMMARY

This chapter draws together some of the more significant findings of the earlier chapters and, to a limited extent, goes beyond the data in order to place some of the findings in a broader framework.

According to the U.S. Office of Education, about 200,000 new teachers will be needed to take care of college enrollment increases and provide replacements for faculty members between 1963 and 1970. It is expected that the number of well-qualified persons available for these positions will be insufficient to meet the demand in many teaching fields.

In the face of these shortages, college faculties remain predominantly masculine. When this survey was done, the ratio of men to women faculty members in American colleges was eight to two. The problem of getting more women on American faculties, especially in the sciences, is a particularly difficult one. Many institutions have been reluctant to hire women, and most women have not been interested in the sciences, nor in studying for the higher degrees necessary to qualify as a faculty member. Interest in a higher degree may be rather hard to inculcate in a woman. Alice S. Rossi of NORC has found, for example, that female college graduates who aspire to higher degrees differ from those who do not primarily in such matters as early family experiences. In other

words, prospects of short-run changes in women's career interests are not great.

Whatever the level of current (1963) shortages, they seem to be hitting universities and other types of institutions about equally in most fields. The distribution of teachers is about the same for each type of institution except in the basic medical sciences and health, where an overwhelmingly large proportion of the faculty is in universities. The data from this survey show that more than three-fourths of the teachers of basic medical sciences and about nine-tenths of those in health are in universities. Perhaps this is a reflection of the intricacy, complexity, and cost of modern medical and health-related research. All of these factors have favored the large universities and will probably continue to do so unless increased support is forthcoming for young research-oriented scientists in other types of institutions. Without additional support for the basic medical sciences in the liberal arts colleges, the small number of teacher in these fields is likely to decrease. Yet many liberal arts colleges should provide training in these areas.

The results of this study show that the lion's share of research is conducted in universities. University faculty members spend 49 per cent of their time in teaching, 23 per cent in research, and 28 per cent in other activities. In other kinds of institutions, 66 per cent of faculty time is spent in teaching, 26 per cent in other activities, and a mere 7 per cent in research.

Concern is frequently expressed about the supposed concentration of research in a relatively small number of high prestige universities

located in the eastern and midwestern states. It should be noted, however, that since World War II a growing number of institutions of higher education, widely spread throughout the nation, have become increasingly involved in research. The spread of research involvement has closely followed the growth in doctorate production. Between 1948 and 1966, the number of institutions conferring the doctorate has increased from 137 to 227, a net gain of ninety institutions in eighteen years.

In recent years, the largest growth in graduate enrollment and Ph.D. production has been in state-supported institutions, and since most of the research funds flow to graduate schools, the state-supported institutions with large graduate departments have reaped most of the benefits. The distribution of research funds to a larger number of institutions dispersed throughout the nation has reduced proportionately the research funds allocated to the eastern and midwestern states.

One of the more pertinent findings of this study is that academic rank is not related to the amount of time spent on research. The proportion of faculty members doing organized research goes up with rank, but not the amount of time spent. Instead, senior faculty spend more time in administration than their junior colleagues. No doubt some of this time is spent administering research, but the institution has needs of its own to be met and requires that senior faculty help meet them.

Even in the most prestigious universities there exists a division of labor between professors. In effect some choose to deal with the institution's problems by becoming actual administrators or by participating in committee work. Others tend to place more emphasis on research. This division of labor was only partially investigated in this report.

Though more detailed cross-tabulations would have allowed more extensive documentation of this point, a few broad outlines of the division of labor have appeared. Basic medical scientists , with their heavy research involvement, spend the least amount of time in teaching and administration, whereas mathematicians and social scientists spend the least amount of time on research and the most time in teaching and administration.

More specifically, the basic medical scientists spent most time on research, followed by the other bioscientists and health professionals. Only in both bioscience groups was a formal research appointment at all frequent. Research commitments of the mathematicians and social scientists were lowest. Essentially the reverse ordering holds for teaching. Social scientists and mathematicians had the heaviest loads, followed by physical scientists and psychologists. Basic medical scientists had the lightest teaching loads. Faculty members in the social sciences and health spent more time in activities other than teaching or research than did people in the other fields.

Analysis of the other activities indicates that, within limits, higher ranking faculty members have greater freedom than their junior colleagues. Teaching loads decline with increasing rank, though the amount of time spent on research does not rise. Administration is relatively common only among full professors. The freedom of the higher ranking faculty members stems from their ability to do "outside" activities like consulting or making speeches. None of these occupies a large segment of time, on the average, nor do they generally make a large contribution to a person's income, but senior faculty members have greater access to them than do their juniors.

If a faculty member is involved in research, chances are that he will require considerable financial support. As is well known, the federal government is an important source of research funds and is becoming more and more important with the passage of time. In 1963, the government was likely to favor researchers in universities over those in other institutions. Seventy-five per cent of the former were funded by the government compared with 57 per cent of the latter. The government also supported researchers in some fields more frequently than in others. Of university-based research in the basic medical sciences, 88 per cent was supported by the government. The federal support level in mathematics was nearly as high, 84 per cent. In fact, the federal government provided the lion's share of research support in nearly all of the selected science fields. Least likely to receive federal support were researchers in the social sciences, 42 per cent of whom reported doing so. However, the last figure refers to all of the social sciences. Federal support for university research in sociology and anthropology probably more nearly approaches the 70 per cent level holding for psychology. Federal research funds are apparently not distributed on the basis of academic rank. Among the faculty members doing research, professors are hardly more likely to receive government support than assitant professors.

Faculty salaries have been a matter of some concern for a long period of time. It is clear that they have been increasing over the past decade, but whether at an adequate rate is another matter. It is beyond the scope of this survey to state whether faculty members are adequately remunerated, but a few of the correlates of faculty earnings have been investigated.

In the first place, men earn more than women. Though the OE data on sex were not available for this report, it would have taken a miracle to overturn such a long-standing practice. The extent to which women's undercompensation is a matter of holding lower academic rank is at present unknown.

University faculties earn more money than faculties of other institutions. Naturally enough, faculty members on calendar-year contracts earn more than those on academic-year ones. If the academic-year faculty member teaches during the summer, this disparity is largely erased.

Within the selected science fields, faculty salaries are not closely tied to the specific field taught. Among calendar-year faculty members basic medical scientists and health professionals go the highest salaries (about $11,000 in universities), and those in mathematics and the social sciences the lowest (a little under $10,000). Among academic-year faculty members, physical scientists and psychologists got the highest pay (about $9,000), and health professionals the lowest ($7,400).

By far the most significant correlate of faculty earnings is academic rank. In universities, professors earn about $7,200 more a year than instructors. In other institutions, the professors earn nearly $5,000 more than instructors per year.

This finding will be no surprise to persons familiar with the academic world. However, such familiarity may obscure some of the peculiarities of the academic status and reward structure. Unlike a corporation, where the highest ranking positions are scarcest, academia has a relatively even distribution of ranks. Full professors are much more

common than instructors--and also a good deal better paid. The point is however, that nearly every assistant professor or instructor can realistically look forward to a full professorship.[1]

Whether the person will become a professor at the institution where he began teaching is by no means as certain. This survey has shown that a substantial segment of the academic community reached their present rank by being promoted, but academia's rectangular rather than pyramidal structure makes evaluation of promotion opportunities difficult. Faculty members are also highly mobile, and one route upward is by changing jobs. This study has not been able to detail the relative contributions of promotion and job changing to movement upward in academia, but opportunities for reaching the highest formal rank in the academic profession seem to be largely a function of the passage of time.

About half of the nation's college teachers reported getting an offer or inquiry from another institution; about two-fifths said they might be interested in moving; and about a sixth said they would change jobs within the year. If everyone changed jobs at that rate a department would suffer complete turnover in six years, a high rate of mobility indeed.

Judging from the proportion of faculty members receiving inquiries, American colleges and universities are competing vigorously for faculty members. Of course, this is just the situation to be expected when college teachers are in short supply. Among university faculty members,

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[1] Of course, academia is not as undifferentiated as the above would indicate. The differentiation is based not on formal statuses but on the prestige accruing to institutional affiliation and esteem for research or other contributions to one's discipline.

about half the professors and instructors had gotten inquiries as had three-fifths of the associate and assistant professors. Apparently persons in the two middle ranks were most attractive to potential employers. In other institutions rank was not related to the receipt of inquiries. But in both kinds of institution plans for remaining until retirement were directly related to academic rank. Hence more professors and associate professors have received inquiries than expect eventually to leave their institution, but more assistant professors and instructors expect to leave than have received inquiries.

Plans for leaving one's current institution in the near future are inversely related to academic rank. Eleven per cent of the professors, 13 per cent of the associates, 19 per cent of the assistants, and 28 per cent of the instructors expected to leave. It would be interesting to know where these people planned to go--to another college or university, to government or industry, or elsewhere. It would also be interesting to know whether the junior faculty members who left their current institutions jumped or were pushed and whether the move was accompanied by an increase in rank.

College teachers in general are highly committed to their profession. They may or may not expect to stay in college teaching. Even the instructors have such intentions; 80 per cent plan to stay in academia. Though this report has not been able to investigate such matters, a number of college teachers must be less than overjoyed with their present positions. Some may be teaching but want to do research, others may think they are underpaid. But nearly all will stay in the academic world. Faculty members seem to be receptive to a change in employer, but they are quite reluctant to leave the academic world.

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