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AUTHOR Mariella, Raymond P.; Ryan, John W.
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ABSTRACT

A very significant and enigmatic situation confronting graduate education today is the lack of adequate and reliable data relating to the manpower supply and demand and employment status of Ph.D.'s. Considering this, the Council of Graduate Schools in the United States authorized a study of the manpower situation. A questionnaire was sent to members of 19 national associations to determine: the percentages of members who are unemployed or consider themselves underemployed, and whether any salary surveys have been conducted. In examining the responses, it became apparent that there is a lack of agreement as to whether an unemployment problem truly exists. The data suggest that certain disciplines (social sciences) are oversaturated or quickly reaching this point; however, the same cannot be said of health-related disciplines. The document presents in summary form the responses from the associations divided by disciplines. (Author/PG)

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COUNCIL OF GRADUATE SCHOOLS IN THE UNITED STATES

ONE DUPONT CIRCLE N.W.
SUITE 740
WASHINGTON
D.C. 20036

(202) 223-3791

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SPECIAL REPORT

THE SUPPLY AND DEMAND SITUATION
A SUMMARY REVIEW

by

Raymond P. Mariella and John W. Ryan

A very significant and enigmatic situation confronting graduate education today is the lack of adequate and reliable data relating to the manpower (supply and demand) and employment status of Ph.D.'s. Numerous studies have been made through the years by various professional and governmental agencies to gain more insight into this matter. The results achieved by these groups have been mixed. In some disciplinary areas, a significant amount of information is available, whereas in other fields it is virtually non-existent. Where information is available, there is a strong tendency to question its validity because of an insufficient amount of data relative to the career aspirations of individuals and the inadequacy of sophisticated and accurate techniques in long-range forecasting of actual need in different areas.

Considering the current state of the situation, the Executive Committee of the Council of Graduate Schools in the United States authorized a preliminary study of the manpower situation to be undertaken in order to determine what has been achieved by various groups and the extent of data presently available in relation to the supply and demand problem.

On June 30, 1973, a letter of inquiry was sent to nineteen national associations[1] which represent a substantial cross-section of all academic disciplines. The associations surveyed represented disciplines in which 26,821 research doctorates were awarded in 1971 or 84 percent of the total number (31,772) for that year. The corresponding figure in 1972 was 27,565 doctorates awarded or 83 percent of the total (33,001).[2]

The letter of inquiry which was sent to the associations addressed itself to the following questions:

1. Has your organization contacted recent students who have received doctorates in order to determine the number (%) who are unemployed?
2. Has your organization sampled your entire membership to determine the total percentage who are unemployed?
3. Does your organization have any data from your doctoral members who consider themselves underemployed?
4. Has your organization accumulated any data concerning manpower (supply and demand) for Ph.D.'s in your discipline in the future?
5. Has your organization conducted any salary surveys among your membership and analyzed the data with respect to annual salary or income related to years since receiving terminal degree (master's or doctorate)?

Responses to the questionnaire were received from eighteen associations. These are summarized in Table 2. The replies furnished were, in some instances, very comprehensive in scope; in others they were quite brief.

Raymond P. Mariella is a member of the Executive Committee of the Council of Graduate Schools in the U.S. and is Dean of the Graduate School at Loyola University of Chicago.

John W. Ryan is Assistant to the President of the Council of Graduate Schools in the U.S. in Washington, D.C.

[1] The questionnaire was sent to the following associations for response: American Association of Anatomists, American Anthropological Association, American Society of Biological Chemists, American Institute of Biological Sciences, American Chemical Society, American Philological Association, American Economic Association, National Education Association, Engineering Manpower Commission, Modern Language Association, American Historical Association, Conference Board of Mathematical Sciences, American Society for Pharmacology and Experimental Therapeutics, American Philosophical Association, American Institute of Physics, American Physiological Society, American Political Science Association, American Psychological Association, and American Sociological Association.

[2] See Table I.

Table 1
Total Number of Doctorates Awarded in Fiscal Years 1971 and 1972

	FY 71[3]	FY 72[4]
Education	6,403	7,079
Arts and Humanities	4,366	4,701
Engineering	3,495	3,475
Biological Sciences	3,391	3,306
Social Sciences	3,039	3,328
Chemistry	2,204	2,011
Psychology	2,116	2,262
Physics and Astronomy	1,740	1,635
Professional Fields	1,402	1,506
Mathematics	1,236	1,281
Agricultural Sciences	1,069	1,016
Medical Sciences	591	592
Earth Sciences	550	580
Environmental Sciences	–	70
Others	170	159
Total - All Fields	31,772	33,001

Table 2

	Yes	No	Study in Progress	No response
Unemployment of Recent Graduates	5	10	1	2
% Total Unemployment	6	8	2	2
*Under*employment	3	12	1	2
Supply and Demand	10	6	2	0
Salary Information[5]	11	4	0	3

Although the responses received from the various professional associations are somewhat fragmentary and do not answer all of the questions posed, certain patterns emerge with a degree of commonality. It is obvious from analyzing the responses that most of the professional associations contacted have only begun to grapple with the problem of supply and demand and related problems of employment and underemployment of Ph.D.'s.

In examining the responses, it becomes apparent that there is a lack of agreement as to whether an unemployment problem truly exists. Some professional groups feel that there is no unemployment problem, while others are aware of a current problem or foresee serious problems in the future.

Those disciplines experiencing employment problems have made or are making efforts to assess the problem in terms of manpower and are making an attempt to extrapolate realistic estimates for the future. Due to the great uncertainty of the future *supply of jobs*, this part of the task is most difficult to gauge. In those areas where the Ph.D. enters academia, fairly good predictions concerning the job market are available. However, the same degree of predictability cannot be made for other segments of the labor market.

A serious problem is encountered in those disciplines that have a substantial percentage of members working in industry. In such cases, economic downturns and curtailment of governmental funding have led to an attrition of personnel, many of whom were Ph.D.'s practicing in their profession for many years. Such forced unemployment of middle-aged Ph.D.'s complicates the unemployment picture for doctorate holders.

A sampling of responses in regard to the unemployment question reflects the prevailing situation:

> "We do not have any formal policy of contacting students . . . to determine whether or not they are employed. As far as we know, there are no recent graduates who have not been able to secure employment."
>
> "The high intelligence of the Ph.D. holder normally would make it possible for him or her to enter a wide variety of jobs normally filled by persons with lesser qualifications; the normal intellectual curiosity and motivation of the typical Ph.D. holder would seem to lead this person to almost any type of employment in preference to unemployment."

The problem concerning *under*employment of Ph.D.'s is very unclear. The following excerpts are indicative of the opinions expressed.

> "Most . . . underemployed persons in our profession are in this predicament because of their inability to move to places where better positions are available. I am speaking specifically of married women who cannot accept positions away from cities where their husbands are employed."
>
> "We believe that the 21 percent of our respondents who are employed but seeking another position indicates that there is underemployment or at least dissatisfaction with current employment."
>
> "Student dissatisfaction with their jobs have showed no significant change over the years–only about 30 percent of candidates feeling some dissatisfaction and almost none showing a great deal."

For many Ph.D.'s, there appears to be considerable disparity between job expectation and attainment, a condition that causes psychological frustration.

Finally, an important aspect of the survey is the absence of significant and desirable data concerning all disciplines. This situation leads to a great deal of speculation on the part of many and tends to confuse the issue as to whether there is an oversupply of Ph.D.'s. The data available suggest that certain disciplines, particularly in the social sciences, are oversaturated or quickly reaching this point in terms of academic opportunities; however, the same cannot be said of

[3] *Summary Report 1971, Doctorate Recipients from United States Universities*, National Research Council, Office of Scientific Personnel, Washington, D.C., April 1972, pp. 6-7.

[4] *Summary Report 1972, Doctorate Recipients from United States Universities*, National Research Council, Office of Scientific Personnel, Washington, D.C., May 1973, pp. 6-7.

[5] A study of salary information will be the subject of a separate communication at a later date.

health-related disciplines. Among these latter, no serious unemployment problem appears to exist and respondents foresee a favorable employment climate in the future.

Perhaps the acquisition of data by professional organizations to extrapolate future trends is an unrealistic goal considering the diversity of methodological techniques used by various organizations in making an assessment of this nature. Unless a degree of uniformity is achieved by the various groups, little of value will be available to assist planners in their assessment of the future labor market and provide proper career counseling of students who plan to enter graduate school in the future.

SUMMARY

Biology

The American Institute of Biological Sciences conducted an ad hoc survey of its membership in December 1972. A questionnaire was sent to 26,000 individuals, 13,000 of whom were members of the AIBS with the remainder being members of "adherent societies." A total of 7,153 replies were received. Of the 7,153 responses (82 percent were male and 18 percent female), 73 percent had Ph.D.'s and 19 percent were terminal masters.

The survey revealed that 73 percent of all respondents were employed by an institution of postsecondary education. Of all respondents, 9 percent indicated that they had been unemployed at some time in 1972. Of the 9 percent, about one-half were unemployed three months or less; the remainder were unemployed for more than three months.[1,2,3]

In the under-30 age group, unemployment was extremely high, perhaps because a significant number were in school full time. Of the 731 respondents in this group, 144 (20 percent) indicated that they were students.

Chemistry

For many years the American Chemical Society has obtained substantial and significant data from its membership. In a recent report, ACS indicated that . . .

> ". . . Overall, the 1972 Employment Status Survey, conducted by the ACS among 44,188 of its U.S. members, produced findings that were not markedly different from the 1971 survey. The proportion of unemployeds rose from 2.7 percent to 3.0 percent in 1972 . . ."[4]

In terms of absolutes, the national 3 percent unemployment rate could mean that nearly 6,000 chemists and chemical engineers were without jobs as of March 1, 1972. See table below.[5]

ACS reports that for those who were unemployed as of March 1, 1972, "unemployment was a more critical matter for the younger member (23.7 percent of those 25 and under were without jobs), considerably more serious for females than males, somewhat higher among non-profit employers, significantly affected government defense employers, was half again as high in the Pacific states (particularly California), but otherwise did not appear to distinguish too sharply between chemists and chemical engineers or among specialty fields, types of work activity, academic degree, or those over the age of 30."[6]

Education

In the field of Education, a substantial amount of data is available from the Research Division of the National Education Association. The data available make

Chemistry
Percentage Profile by Degree and Employer Type
1972

Full-Time Employment	Industry	Education	Government	Non-Profit	Self	Other	No Response
B.S.	79.1	2.8	12.5	1.8	1.5	1.4	0.8
M.S.	68.4	14.6	10.3	3.4	1.1	1.1	1.0
Ph.D.	49.9	35.5	8.6	3.6	0.8	0.7	0.9
Unemployed							
B.S.	62.0	8.7	11.4	2.3	1.9	3.8	9.9
M.S.	67.0	15.9	2.3	5.1	0.6	2.3	6.8
Ph.D.	58.0	18.6	3.5	7.6	1.3	2.2	8.8

Note: Total unemployed: B.S. 263; M.S. 176; Ph.D. 317
Total full time: B.S. 6,783; M.S. 4,437; Ph.D. 11,030

[1] Joan G. Creager, "Report of the AIBS Manpower Survey," American Institute of Biological Sciences, Washington, D.C., pp. 1-2.

[2] See Constance Holden's article (News and Comment), *Science*, vol. 181, no 4102, August 31, 1973, p. 831.

[3] T.H. Curry of the Office of Scientific Personnel, NRC stresses that "a reexamination of the data indicates that the reported unemployment rate was probably erroneous . . . most of those who were unemployed and seeking jobs were students," *Science*, December 28, 1973, p. 1295.

[4] *American Chemical Society Member Employment Status 1972*, American Chemical Society, Washington, D.C., July 10, 1972, p. 1

[5] *Ibid.*, p. 15.

[6] *Ibid.*, p. 1.

it apparent that a significant number of "teachers" are unemployed. This situation has caused great concern.

NEA reports that "enrollment information from 67 of the nation's largest teacher preparation institutions suggests that graduating classes of potential teachers will be smaller in 1973 and in at least three subsequent years than they were in 1972. If these institutions are representative of all teacher education institutions, the number of graduates completing preparation to enter teaching in 1976 will be only two-thirds of the number in 1972, and the ratio of graduates seeking teaching jobs to the number of jobs open to them will be about 1 1/2 to 1 instead of the almost 2 to 1 in 1972."[7]

Engineering

The engineering profession has accumulated substantial data relating to the manpower situation of its constituency. Through the Engineering Manpower Commission of the Engineers Joint Council (EJC), annual placement surveys are conducted.

Although the results of the 1973 EMC survey are not complete, by all accounts the employment demand is much stronger in 1973 and engineers have not had any difficulty finding jobs. A survey by the College Placement Council in April 1973 of employer recruiting plans showed that hiring goals for engineering graduates were up 24 percent at the M.S. and 34 percent at the Ph.D. level. The largest increases were reported in the chemical, electronics, and metals industries. All manufacturing areas showed gains, including aerospace. Government and non-profit organizations, however, planned to hire fewer graduates while research and consulting firms showed no change.[8]

History

The American Historical Association has conducted an extensive survey of its membership in regard to the manpower situation. In the latest survey, approximately 1,250 institutions were solicited for employment information and supply and demand data. Four hundred seventy-nine institutions furnished responses.

Aggregate Figures for 479 Reporting Institutions[9]

Supply

1. Number of graduate students and/or staff members in your department who are known to be actively seeking jobs for the fall of 1973:

382 doctorates 843 doctoral candidates

2. Number of graduate students and/or staff members in your department who have been hired for new positions (all ranks) for the fall of 1973:

65 doctorates 117 doctoral candidates

Demand

1. Number of candidates already hired by your department (all ranks) for the 1973-74 school year (do not include members of your present staff who have or will be reappointed):

	Full-Time "Permanent"	Full-Time "Temporary"	Part-Time
Doctorates or Doctoral Candidates	119	34	85

2. Minimum number of appointments (all ranks) in addition to those you reported in the preceding question that your department expects to make for the 1973-74 school year:

	Full-Time "Permanent"	Full-Time "Temporary"	Part-Time
Doctorates or Doctoral Candidates	114	29	64

3. Maximum number of appointments (all ranks) in addition to those you reported in part II, question I that your department could realistically hope to make if budgetary and staffing ideals are realized:

	Full-Time "Permanent"	Full-Time "Temporary"	Part-Time
Doctorates or Doctoral Candidates	109	37	62

Mathematics

The American Mathematical Society conducts an annual survey which yields a plethora of significant data concerning Ph.D.'s in mathematics and manpower problems. Additional data are given concerning the enrollments in all undergraduate and graduate courses in mathematics.

The 1972 figures indicate that enrollment for *all* graduate math courses is down except for statistics, which is unchanged from 1971. The percent change in enrollment for *all* graduate courses from 1971 to 1972 is down 2 percent. Undergraduate enrollments are down in

[7] *Research Memo*, 1973-8, National Education Association, Washington, D.C., June 1973, p. 1.

[8] Presentation of John D. Alden, Executive Secretary, Engineering Manpower Commission, June 25-28, 1973.

[9] *Professional Register*, American Historical Association, Washington, D.C., vol. 2, no. 4, May 1973, p. ii.

Modern Languages and English
Employment Statistics for 1973 Ph.D.'s as of 15 June 1973

	English	French	German	Spanish
A. % already employed at time degree was received	16.0%	12.0%	23.0%	29.9%
B. Rate of employment among those in Group "A"	100.0%	100.0%	100.0%	100.0%
C. % not employed at time degree was received	84.0%	88.0%	76.0%	70.1%
D. Rate of employment among those in Group "C"	26.1%	21.2%	34.2%	29.8%
E. Overall employment rate among 1973 Ph.D.'s	37.8%	30.7%	49.0%	50.8%

all fields except statistics and computer sciences. The total undergraduate enrollment is down 2 percent.

An analysis has been prepared by R. D. Anderson[10] concerning the present and future job market. From data collected in the summer of 1973, about 120 new Ph.D.'s were unemployed and approximately 210 non-retained Ph.D.'s were not employed. It seemed "likely" that the Ph.D. unemployment figure dropped to about 200 by September of 1973.

The AMS has provided a long-range analysis of all factors involved in the job market. The analysis provides little hope for aspiring academicians. "The academic unemployment prospects for the next twenty years are not good. There is now every reason to believe that the total national mathematics faculty will increase very little in the rest of the 1970's and will actually decrease somewhat in the 1980's.[11]

Almost certainly, the question of academic job retention has become the most critical and difficult aspect of the job market."[12]

Anderson recommends that "the production of Ph.D.'s trained primarily for academic employment should be cut back to less than one-half of the present level and the mathematics community should actively seek alternative satisfactory professional or quasi-professional employment opportunities for those forced out of academia."[13]

Modern Languages and English

The Modern Language Association has undertaken two manpower surveys--one was addressed to all departments of language and literature in the Spring of 1970 while the other addressed itself to departments granting the Ph.D. degree in the Fall of 1972. The 1970 survey gave a broad picture of the significant drop in demand between the period 1965-1970 and that projected for the period 1970-1975. The 1972 survey provides useful information on the current and projected supply of teachers in the language and literature fields.

The 1973 JIL survey[14] revealed that 84 percent of new Ph.D.'s in English were graduate students during the 1972-73 academic year and were seeking their first full-time teaching position. The remaining 16 percent were employed at the time they received their degree. For the main group, the rate of employment as of June 1973 was found to be 21.6 percent. Combining these two figures, the rate of employment for new Ph.D.'s in English is 37.8 percent. The rate of employment in foreign languages is listed above.

In order to obtain an estimate of the percentage who might be hired during the summer months, the JIL Survey contained a question in which respondents who had not found a position rated their chances of success during the summer as "excellent" (nearly certain), "fair to good" (50/60 chance), or "poor" (no realistic hope). Their rating was based on responses to letters of application, dossier requests, interviews, tentative offers, etc. The projected employment figures appear on page six.

Even these optimistic projections are discouraging, for they show that nearly half of all new Ph.D.'s in English and foreign languages will be unemployed or underemployed in September. That means that there will be about 600 Ph.D.'s in English and 275 in foreign languages who will be employed in unsuitable positions or not employed at all.

(Attention is also called to *The Ph.D. in English and Foreign Languages: A Conference Report*, a special combined issue of the Bulletins of the Associations of Departments of English and Foreign Languages, issued in June 1973, which provides an excellent up-to-date source of statistics.)

[10] *Notices* of the American Mathematical Society, vol. 20, no. 8, December 1973, pp. 367-371.
[11] *Ibid.*, p. 367.
[12] *Ibid.*, p. 369.
[13] *Ibid.*, p. 371.

[14] *1973 JIL Survey Report*, Modern Language Association of America, New York, 1973, pp. 1-4.

Modern Languages and English
Projected Employment Statistics for 1973 Ph.D.'s
(Based on candidates own estimates as of 15 June 1973)

	English	French	German	Spanish
A. Employment rate as of 15 June 1973	37.8%	30.7%	49.0%	50.8%
B. % rating chances of finding position "excellent"	2.1%	2.2%	2.1%	4.7%
C. Projected employment rate of those in Group "B"	100.0%	100.0%	100.0%	100.0%
D. % rating chances of finding position "fair/good"	25.5%	23.6%	17.5%	27.3%
E. Projected employment rate of those in Group "D"	50.0%	50.0%	50.0%	50.0%
F. Projected overall employment rate	52.2%	44.7%	59.9%	69.2%

Pharmacology

The American Society for Pharmacology and Experimental Therapeutics, Inc. is assessing the manpower question through its Task Force on the Support of Training and Research in Pharmacology. The data collected by the ASPET Ad Hoc Committee on Manpower and Goals has been summarized in a recent study.[15]

The data reported in the study were obtained from Schools of Medicine, Pharmacy, Veterinary Medicine, and the broad category of miscellaneous non-pharmaceutical organizations. Past and current data were analyzed to forecast the number of pharmacologists, toxicologists, and clinical pharmacologists who will be available for employment in 1979-80. Estimates were made according to various assumptions of manpower production and were compared to different estimates of manpower need. The analysis of the study concludes that "if recent mean annual production rates of employment patterns for pharmacologists, toxicologists, and clinical pharmacologists are sustained, they will barely, if at all, suffice to meet projected needs. The discrepancy will be most marked in the cases of toxicologists and clinical pharmacologists."[16]

Philosophy

The American Philosophical Association conducts an annual placement survey of its membership. The 1972 Placement Report[17] reveals that 56 graduate departments replied to the recent questionnaire as compared to 60 in 1971 and 63 in 1970. Collectively, in 1972 the departments were seeking to place 128 Ph.D.'s and 216 ABD's. Comparative figures for previous years indicate that 180 Ph.D.'s and 193 ABD's were seeking employment in 1971. The corresponding figures in 1970 were 158 Ph.D.'s and 253 ABD's.

One of the most significant figures in the Placement Report relates to departments which did not anticipate placing their candidates for the fall academic term (1973). These figures were estimated to be 33 Ph.D.'s and 100 ABD's. The corresponding figures in 1971 were 22 Ph.D.'s and 76 ABD's, while in 1970 they were 13 Ph.D.'s and 80 ABD's. One should note that the data cannot be used certainly to determine trends over a three-year period due to the variations in the population reporting. However, they would suggest an increase in unemployment since the absolute number of candidates expected to be unplaced increased by 30 percent despite the absolute decrease in the number of candidates reported. Thus, it would appear that it was somewhat more difficult to obtain a position teaching philosophy in 1972 than in the previous year, and considerably more difficult than in 1970 (which was thought to be a year of crisis).

The Placement Report also provides breakdowns for "major, middle, and minor producers" and for "prestige" departments as reflected in ACE ratings of graduate departments. The central fact that emerges from this data is that one's chances of obtaining a position were quite good if an individual came from a department which had only a few candidates to place. The situation was difficult if one came from (a) a prestige department with more than ten candidates to place or (b) a relatively unprestigious department with more than five or so candidates to place. It seems clear that the "bottom" candidates from large departments fared badly and only the great prestige of a department will ensure that each candidate will be placed.

[15] Edward W. Pelikan, "Projections of Manpower Needs and Resources in Pharmacology," *The Pharmacologist*, vol. 14, no. 1, Spring 1972, pp. 38-49.
[16] *Ibid.*, p. 49.
[17] Richard Rorty, "1972 Placement Report," Bulletin 13, American Philosophical Association, pp. 6-7.

1971-72 Physics Graduate Student Survey
Employment Status, as of Summer 1972, of Physicists Granted Doctorates July 1, 1971-August 31, 1972

Employment Status	Physicists Granted Doctorates[1]							
	July 1, 1971-August 31, 1971		September 1, 1971-April 30, 1972		May 1, 1972-June 30, 1972		July 1, 1972-August 31, 1972[2]	
	Number	% of Total This Period	Number	% of Total This Period	Number	% of Total This Period	Number	% of Total This Period
Seeking	9	7%	25	8%	73	16%	41	25%
Accepted	55	41%	130	40%	157	35%	59	36%
Continuing	7	5%	24	7%	56	13%	8	5%
Accepted Post-Doctoral	57	43%	134	42%	154	35%	55	34%
Military	1	–	5	2%	6	1%	0	–
Changing Profession	5	4%	3	1%	1	–	0	–
Total	134	100%	321	100%	447	100%	163	100%

[1] 902 (63%) of the 1438 physicists who were granted doctorates during the academic year July 1, 1971-June 30, 1972, responded to the survey conducted in the summer of 1972.
[2] Responses from physicists granted doctorates July 1, 1972-August 31, 1972, are shown here for comparison purposes.

Student dissatisfaction with employment showed no significant change over previous years. Approximately 30 percent of the candidates felt some dissatisfaction with their employment situation. The departments felt that, in terms of employment prospects, 1971 was considerably more difficult than 1970, but 1972 was only somewhat more difficult than 1971.

The placement situation: it seems reasonable to suggest that at least 50 and perhaps as many as 70 Ph.D.'s who graduated in June of 1972 could not find teaching positions and almost 200 ABD's did not. If one assumes that none of those unplaced in 1970 or 1971 subsequently obtained teaching positions (or, more realistically, that those who did get placed were matched by people who lost jobs and were then unable to find new ones), then it appears that some 150 Ph.D.'s and some 400 ABD's who emerged from U.S. graduate departments of philosophy over the last three years are not now employed in teaching. These figures are speculative; however, the order of magnitude is perhaps correct. There is nothing to suggest that the numbers of unemployed candidates will cease to grow over the next few years.

Physics

The American Institute of Physics has for many years maintained excellent records concerning degree recipients, employment data, and other pertinent information.

The most recent employment status survey[18] available reveals the following as shown above.

Political Science

The American Political Science Association conducts a survey of Ph.D. department placement directors. The 1971 survey was directed to 112 Ph.D. departments and achieved an 81 percent response rate. Respondents were asked "How many candidates did you have on the job market this year? Of these, how many do you consider firm candidates, i.e. those who had to find a position this coming year?" The results of the survey[19] are listed below:

Table 1
Placement of Candidates for Positions in Sample and Total Population

	Number of Departments	Number of Candidates	Number of Firm Candidates	Number of Candidates Placed
Sample	91	982	732	515
Population	112	1222*	912*	642*

*The number of firm candidates in the department

It is estimated that there were over 1200 individuals on the market of whom approximately 900 were serious candidates for positions. This includes all those individuals whose departmental placement director or chairman were aware of their quest for positions. It is perhaps a very good estimate of the number coming on the market for the first time but does not include fewer junior people who were seeking to change positions.

The most successful departments, in terms of placement, are those with the smallest and largest number of individuals seeking positions. Those departments facing the greatest difficulty had a moderate number (6-10) of candidates to place.

Other factors usually thought to influence the likelihood of placement are completion of graduate work and field of specialization. Table 3 demonstrates that those individuals who have acquired their doctorate are more likely to be successful in obtaining a position than are those who have not yet completed their dissertation. However, the same data also reveal that the vast majority of candidates fall in the latter group.

[18] American Institute of Physics, Publication No. R-207.5, Washington, D.C., April 1973, p. 1.

[19] *Political Science Association Quarterly*, vol. 5, no. 4, Fall 1972, pp. 463-464.

Table 2
Placement Success and Size of Placement Class

Size of Placement Class**	Number of Departments	Number of Firm Candidates	Number of Candidates Placed	Placement Success
1-5	40	114	90	78.9%
6-10	17	146	89	60.9%
11-15	5	66	43	65.1%
16-20	8	141	92	65.2%
21-30	7	181	136	75.1%
30+	2	84	65	77.3%
Total	79**	732	515	70.4%

**Twelve departments reported that they had no candidates for positions this year

Table 3
Degree Completion and Placement Success

Degree	Number of Firm Candidates	Number of Placements	Placement Success
Ph.D.	226	180	79.6%
ABD	474	303	64.1%
Total	700***	483***	

***The totals in this and subsequent tables are smaller than those provided earlier because several departments did not provide data broken down by degree, field of specialization, etc.

"Our best guess is that demand for political science Ph.D.'s in academe is unlikely to increase significantly over the decade, and it will probably register an absolute decline in the 1980's. Furthermore, we doubt that this demand for new political science doctorates will far exceed 300 in any single year. This compares unfavorably with the expected 1,000+ annual production of Ph.D.'s in political science."[20]

Another interesting study which analyzes the marketplace for Ph.D.'s has been prepared by Virginia Lussier. Using the Allan Cartter projection model, she provides an estimate of full-time political science faculty from 1963 to 1980. Her study suggests that the peak demand for political scientists occurred between the years 1965 and 1969, dropped sharply in 1969 and will continue to decline after 1975-76. Lussier concludes that if present trends continue, "54 percent of the political science Ph.D.'s in 1980 will be forced to seek employment outside of fields traditionally pursued by the majority of doctorates in the field."[21]

Psychology

The American Psychological Association has undertaken annual surveys of doctoral producing departments to ascertain the employment status of recent graduates. Data for the years 1971 and 1972 are available. The employment status of doctorates in Psychology as of June 1971 is listed below. The results are based on a response rate of 90 percent of the doctoral-granting departments.

Employment Status of 1971 Doctorates in Psychology as of June 1971[22]

(n = 1,534)

unemployed	=	256
non-academic job	=	443
post-doctoral job	=	144
academic job	=	701

Unemployment was estimated at 17% for *new* Ph.D.'s

As far as the manpower issue is concerned, it is clear that available data suggest that "demand has not kept pace with supply and the increasing enrollments in graduate departments portend an increasing number of job applicants for the foreseeable future. It will take a dramatic increase in positions to balance demand with supply."[23]

With regard to the academic future for Ph.D.'s, it is felt that a significant number of "Ph.D. candidates at leading universities will have to lower their sights when seeking academic appointments." In addition, Ph.D. psychologists who may now be *underemployed* are rising in number due to job disillusionment. Overall, it is predicted that a large oversupply of psychologists will exist during the period 1984-1987.[24]

Sociology

Through its annual employment survey,[25] the American Sociological Association provides significant and timely information concerning its profession.

Data on the production of sociologists and demand are presented in the following table.

The long-range trend appears to be bleak "on the basis of Sociology production and graduate admissions figures . . ." It may be concluded that the period of expotential doctorates is past. We even dare to forecast that Ph.D. production will level off at between 700 and 750 per year before drifting downward in response to even tighter market conditions.

The ASA survey revealed that the number of new academic positions opening yearly in Sociology had declined from 1600 in 1971 to 358 in 1973. At the same time, it indicated that the number of new Ph.D.'s had grown from 495 in 1971 to 594 in 1973.

[20] Thomas E. Mann, *Employment of Political Scientists In the 1970's: Problems & Prospects*, Midwest Political Science Association (Chicago), May 1973, p. 20.

[21] Virginia Lee Lussier, "The Future Market for Ph.D.'s in Political Science," Paper delivered at the American Political Science Association Annual Meeting, Chicago, September 6-11, 1971, p. 5.

[22] *American Psychologist*, vol. 27, no. 5, May 1972, p. 368.

[23] *Ibid.*, p. 476.

[24] *Ibid.*, p. 421.

[25] Kurt Finsterbusch, "The 1973 Academic Job Market for Sociologists," *ASA Footnotes*, November 1973, p. 4.

Supply and Demand Estimates
for the
American and Canadian Academic Job Market
for
New Sociology Ph.D.'s, Spring 1972 and 1973

	1971*	1972*	1973**
New Ph.D.'s	582	661 (696)	699
Seeking Academic Employment	495	555 (592)	594
Academic Openings Replacements	1600	883	358
(Death & Retirement)	103	103	105
Net New Positions	1497	780	253
In All Graduate Departments	374	196	81
With ACE Ranking***	48	37	31
Without ACE Ranking	326	159	50
In Undergraduate Departments	1123	584	172

*based on the 1972 questionnaires
**based on the 1973 questionnaires
***American Council on Education