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1975 SURVEY REPORT

STARTING SALARIES AND EMPLOYMENT STATUS OF
CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES

Office of Manpower Studies
American Chemical Society
Washington, D.C.





American Chemical Society

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RELATIONS AND MANPOWER STUDIES

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INTRODUCTORY REMARKS

The 1975 survey is the twenty-fourth in the series conducted by the American Chemical Society. The preliminary results of the survey were published in the October 27, 1975, issue of Chemical and Engineering News.

The primary objective of the survey is to determine the salaries and occupational status of the students majoring in chemistry and chemical engineering who graduated during the 1974-75 academic year, and it covers the three degree levels: bachelor's, master's, and Ph.D. In addition, the survey provides information on major employer categories, on graduate study plans, on women and minority participation, and citizenship status.

The survey covers the graduates of chemistry departments approved by the ACS and chemical engineering departments accredited by the American Institute of Chemical Engineers and the Engineer's Council for Professional Development. The above departments provided the names and addresses of the graduates, and the Office of Manpower Studies (OMS) mailed the survey questionnaires during the summer of 1975 to all those with addresses in the continental United States and Hawaii.

No effort was made to examine the characteristics of the graduates from departments that do not participate in the survey or of those graduates who did not mail back completed questionnaires. The results presented here, therefore, do not constitute a random sample of the 1975 graduates in chemistry and chemical engineering.

The extent of the coverage of the present survey will not be known until the U. S. Office of Education publishes the number of degrees granted in chemistry and chemical engineering between July, 1, 1974, and June 30, 1975. Instead, the comparison of degrees granted in 1974 with the responses to the survey of the

same year¹ are presented in Table 1. Assuming that the Office of Education figures are an accurate measure of the universe of 1974 graduates, the table presents the number of respondents to

TABLE 1
RESPONSES TO THE 1974 OMS SURVEY AS PERCENTAGE
OF THE 1974 GRADUATES
by Degree Level, Major, and Sex

Major and Sex	D E G R E E L E V E L		
	Bachelor's	Master's	Ph.D.
Chemistry	24.8	16.4	30.2
Men	24.4	16.7	29.4
Women	26.5	15.4	38.2
Chemical Engineering	23.9	14.7	22.5
Men	23.8	15.0	22.8
Women	28.2	-	-

Source: U. S. Department of Health, Education, and Welfare,
Office of Education, preliminary figures.
American Chemical Society, Starting Salary Survey, 1974.

the survey as percentage of that universe. With the exception of women chemical engineering² master's and Ph.D. recipients, the percentage of responses range from 14.7 to 38.2.

During the summer of 1975, 12,677 questionnaires were mailed (bulk mail) to the graduates of 529 chemistry and 123 chemical engineering departments. It is estimated that approximately ten percent of the letters did not reach their intended recipient because of the high mobility of the surveyed population. By the end of November, 4,138 responses had been received, 4,102 of them usable. Table 2 presents the responses by degree level, sex, and major.

¹The most recent year for which there are available figures for degrees granted in chemistry and chemical engineering by all four-year colleges and universities in the nation.

²Two master's and one Ph.D. responses were received, out of twenty-one master's and ten Ph.D. degrees granted.

The following are some comments intended to facilitate the interpretation of the results. The questionnaires were manually edited, and those judged as useless were discarded. Many partially completed questionnaires were processed in order to extract the maximum amount of information. The discrepancies in the number of respondents in various tables reflect the use of these incomplete questionnaires.

TABLE 2

VALID RESPONSES TO THE 1975 OMS SURVEY

by Degree Level, Major, and Sex

Major and Sex	D E G R E E L E V E L		
	Bachelor's	Master's	Ph.D.
Chemistry	2248	377	472
Men	1716	288	417
Women	532	89	55
Chemical Engineering	741	168	92
Men	704	157	92
Women	37	11	0

Question H (see questionnaire) was edited in order to eliminate multiple check marks and to reflect as accurately as possible the employment status of the respondent. The term "inexperienced" as used in the tables refers to those who have one year or less of prior professional work experience. Only the salaries of those who found full-time employment in chemistry or chemical engineering were analyzed. Postdoctoral salaries were analyzed separately.

MAJOR FINDINGS

Compared with 1974 (Table 3), the percentage of new chemistry graduates who found full-time employment in their field went down for all three degree levels. Master's degree recipients registered the largest decrease, from 47.9% in 1974 to 40.8% in 1975. However, the percentage of B.S. and M.S. recipients who obtained assistantships or fellowships to pursue advanced studies increased. Also on the increase was the percentage of Ph.D.'s who accepted postdoctoral fellowships.

TABLE 3

EMPLOYMENT STATUS OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES BY DEGREE

Summer of 1974 and Summer of 1975

Major and Employment Status	D E G R E E L E V E L					
	Bachelor's		Master's		Ph.D.	
	1974	1975	1974	1975	1974	1975
CHEMISTRY						
Full-time employed:						
In chemistry or chemical engineering	24.5%	22.6%	47.9%	40.8%	48.7%	46.0%
Outside chemistry or chemical engineering	7.3	6.9	4.0	8.0	1.8	2.1
Postdoctoral/grad. asst./other fellowship	28.1	31.2	31.9	36.6	43.1	47.5
Military/Peace Corps, etc.	2.0	2.7	1.1	2.1	1.1	1.5
Part-time employed	17.8	na	3.7	na	2.2	na
Unable to obtain full-time employment	4.9	8.5	5.4	4.5	1.6	2.1
Not seeking full-time employment	15.3	28.0	6.0	8.0	1.4	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of responses	2,610	2,249	351	377	552	474
CHEMICAL ENGINEERING						
Full-time employed:						
In chemistry or chemical engineering	69.4%	65.4%	70.8%	73.8%	94.4%	91.3%
Outside chemistry or chemical engineering	3.6	5.7	3.2	3.6	0.0	2.2
Postdoctoral/grad. asst./other fellowship	15.0	17.0	16.2	13.7	4.4	5.4
Military/Peace Corps, etc.	2.3	1.1	1.9	0.6	0.0	0.0
Part-time employed	5.6	na	1.9	na	1.1	na
Unable to obtain full-time employment	1.1	5.3	3.2	2.4	0.0	1.1
Not seeking full-time employment	3.0	5.7	2.6	6.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of responses	826	742	154	168	90	92

The same trends characterize the postgraduation status of chemical engineering B.S. and Ph.D. graduates, but a reverse trend was observed for the master's degree recipients.

Chemists had very modest gains in starting salaries at all degree levels. The percentage increases from 1974 are 1, 2.6, and 4.9 for bachelor's, master's, and Ph.D.'s respectively. (See Table 4.) Since the cost of living increased 11.9% from September 1974 to September 1975, however, these salary gains represent a decrease in real income.

Chemical engineers did better, registering percentage salary increases of 14.3, 11.4, and 13.6 for bachelor's, master's, and Ph.D.'s respectively. (Table 5.)

The overall salaries of women chemists with a B.S. degree slipped behind that of men by 4% (see Table S-1), a change from last year when women reported 2% higher salaries than men. However, industrially employed B.S. women chemists continue to report higher salaries than men (Table S-3), a trend that started in 1972.

Women chemists with the master's degree reported a drop in overall salaries from 1974 of 2.7%, and the salary gap between men and women increased slightly.

Industrially employed women chemists with the Ph.D. reported a 6.7% gain in their salary, moving slightly ahead of men for the first time since this survey has been conducted.

Prepared by the Office of
Manpower Studies

TABLE 4

STARTING YEARLY SALARIES OF INEXPERIENCED FULL-TIME EMPLOYED CHEMISTRY GRADUATES

6

by Degree: Summer of 1974 and Summer of 1975

Salaries	D E G R E E L E V E L					
	Bachelor's		Master's		Ph.D.	
	1974	1975	1974	1975	1974	1975
Lower 10%	\$ 7,500	\$ 7,500	\$ 8,500	\$ 9,150	\$11,000	\$11,800
Lower 25%	8,400	8,500	10,000	10,000	14,500	15,000
Median	9,900	10,000	11,700	12,000	16,200	17,000
Upper 75%	11,000	11,400	12,700	13,200	17,400	18,400
Upper 90%	11,700	12,000	13,500	14,000	18,400	19,500
Number of Responses	463	399	90	84	159	148
Arithmetic Mean	9,690	9,911	11,536	11,715	15,593	16,287
Standard Deviation	1,711	1,843	1,969	2,099	2,723	2,809

TABLE 5

STARTING YEARLY SALARIES OF INEXPERIENCED FULL-TIME EMPLOYED CHEMICAL ENGINEERING GRADUATES

by Degree: Summer of 1974 and Summer of 1975

Salaries	D E G R E E L E V E L					
	Bachelor's		Master's		Ph.D.	
	1974	1975	1974	1975	1974	1975
Lower 10%	\$12,000	\$13,000	\$12,600	\$13,800	\$14,000	\$18,000
Lower 25%	12,300	13,900	13,200	14,500	16,800	19,000
Median	12,600	14,400	14,000	15,600	17,600	20,000
Upper 75%	13,000	15,000	14,500	16,200	18,600	21,000
Upper 90%	13,500	15,300	15,000	16,800	20,000	21,000
Number of Responses	467	405	75	83	43	48
Arithmetic Mean	12,660	14,325	13,901	15,342	17,495	19,877
Standard Deviation	743	1,039	974	1,417	1,879	1,633

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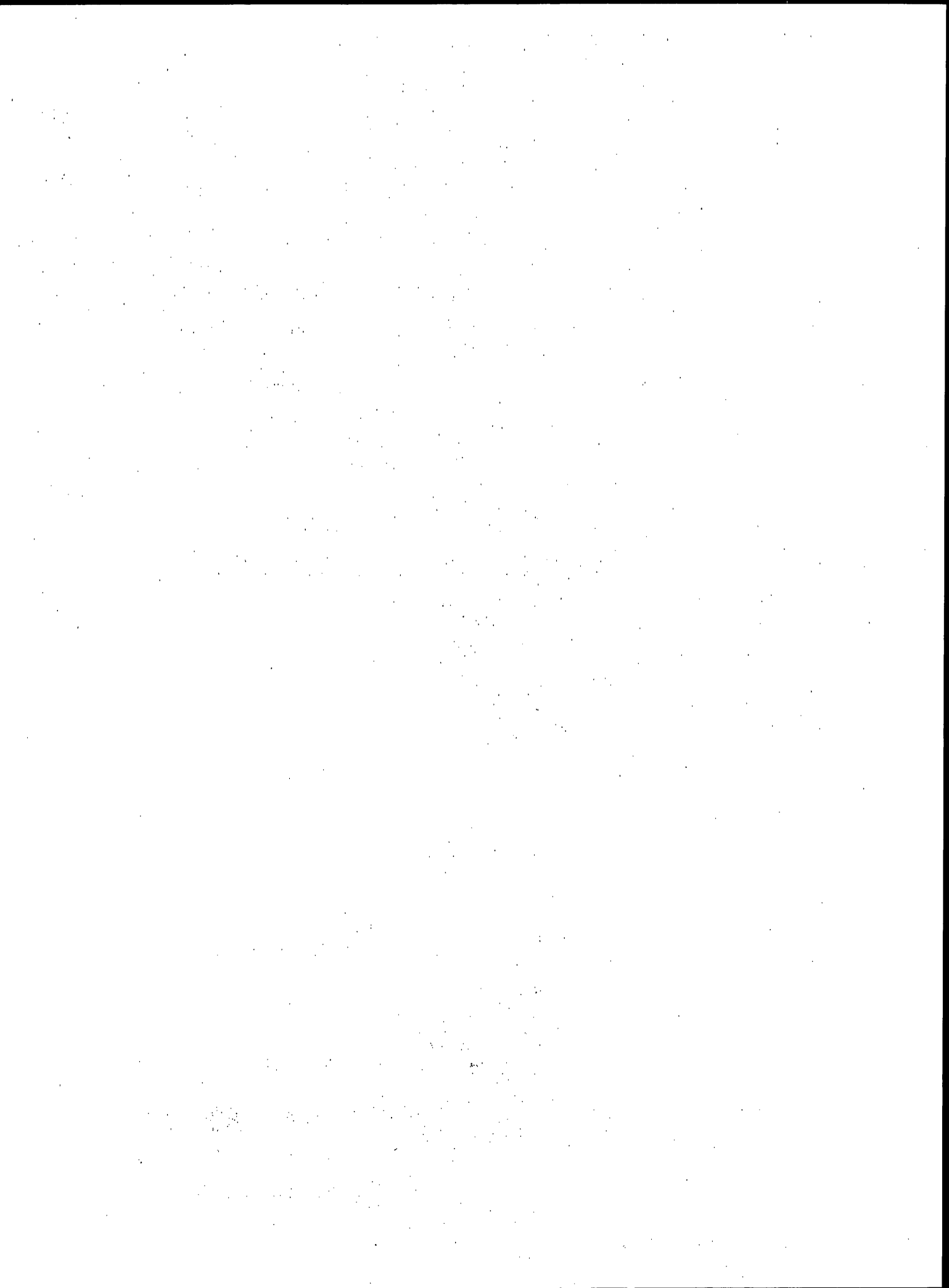


TABLE E-1

POSTGRADUATION STATUS OF CHEMISTRY GRADUATES BY DEGREE LEVEL AND SEX

EMPLOYMENT STATUS	BACHELORS		MASTERS		PHD		RCM TOTAL
	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	
FULLTIME IN CHEM	347 20.2%	162 30.5%	121 42.0%	33 37.1%	154 40.8%	24 43.6%	218 46.2%
FULLTIME NONCHEM	110 6.4	45 8.5	23 8.0	7 7.9	20 8.0	3 5.5	10 2.1
POSTDOC, GRADASST	554 32.3	148 27.8	107 37.2	31 34.8	138 36.6	24 43.6	223 47.2
MILITARY, VISTA	55 3.2	6 1.1	8 2.8	0 0.0	8 2.1	0 0.0	7 1.5
SEEKING EMPLOYMT	135 7.5	57 10.7	11 3.8	6 6.7	17 4.5	3 5.5	10 2.1
NCT SEEKING EMP	514 30.0	114 21.4	18 6.2	12 13.5	30 8.0	1 1.8	4 0.8
COLUMN TOTAL	1715 100.0%	532 100.0%	288 100.0%	89 100.0%	377 100.0%	55 100.0%	472 100.0%
PLANS FOR FURTHER STUDIES							
NC RESPONSE	60 3.5%	22 4.1%	6 2.1%	0 0.0%	6 1.6%	4 7.3%	21 4.4%
PLAN FURTHER STUDIES	1219 71.0	323 60.7	158 54.5	49 55.1	207 54.5	47 7.3	51 10.8
DO NOT PLAN FURTHER STUDIES	437 25.5	187 35.2	124 43.1	40 44.9	164 43.5	35 47	400 84.7
COLUMN TOTAL	1716 100.0%	532 100.0%	288 100.0%	89 100.0%	377 100.0%	55 100.0%	472 100.0%

TABLE E-2

PLANS FOR FURTHER STUDIES OF UNEMPLOYED CHEMISTS
by Degree Level and Sex

HIGHEST DEGREE	SEEKING EMPLOYMT			NOT SEEKING EMPLOYMNT		
	MEN	WOMEN	RCW TCTAL	MEN	WOMEN	RCW TCTAL
PLANS FOR FURTHER STUDIES						
BACHELORS						
NC RESPONSE	21 15.6%	11 19.3%	32 16.7%	18 3.5%	5 4.4%	23 3.7%
PLAN FURTHER STUDIES	36 26.7	18 31.6	54 28.1	485 94.4	99 86.8	584 93.0
DO NOT PLAN FURTHER STUDIES	78 57.8	28 49.1	106 55.2	11 2.1	10 8.8	21 3.3
COLUMN TCTAL	135 100.0%	57 100.0%	192 100.0%	514 100.0%	114 100.0%	628 100.0%
MASTERS						
PLAN FURTHER STUDIES	3 27.3%	1 16.7%	4 23.5%	17 94.4%	6 50.0%	23 76.7%
DO NOT PLAN FURTHER STUDIES	8 72.7	5 83.3	13 76.5	1 5.6	6 50.0	7 23.3
COLUMN TCTAL	11 100.0%	6 100.0%	17 100.0%	18 100.0%	12 100.0%	30 100.0%
PHD						
NC RESPONSE	1 14.3%	1 33.3%	2 20.0%	0 0.0%	0 0.0%	0 0.0%
PLAN FURTHER STUDIES	0 0.0	0 0.0	0 0.0	3 100.0	1 100.0	4 100.0
DO NOT PLAN FURTHER STUDIES	6 85.7	2 66.7	8 80.0	0 0.0%	0 0.0%	0 0.0%
COLUMN TCTAL	7 100.0%	3 100.0%	10 100.0%	3 100.0%	1 100.0%	4 100.0%

TABLE E-3

POSTGRADUATION STATUS OF CHEMICAL ENGINEERING GRADUATES BY DEGREE LEVEL AND SEX

EMPLOYMENT STATUS	BACHELORS			MASTERS			PHD		
	MEN	WOMEN	RCA TOTAL	MEN	WOMEN	RCA TOTAL	MEN	WOMEN	RCA TOTAL
FULLTIME IN CHEM	457 64.5%	28 75.7%	485 65.5%	116 75.5%	8 72.7%	124 73.8%	84 91.3%	84 91.3%	84 51.3%
FULLTIME NONCHEM	40 5.7	2 5.4	42 5.7	3.8	0.0	3.6	2.2	2.2	2.2
POSTDOC, GRADASST	122 17.3	4 10.8	126 17.0	12.7	3 27.3	23 13.7	5 5.4	5 5.4	5 5.4
MILITARY, VISTA	7 1.0	1 2.7	8 1.1	0.6	0.0	0.6	0.0	0.0	0.0
SEEKING EMPLOYMT	35 5.5	0 0.0	35 5.3	4 2.5	0 0.0	4 2.4	1 1.1	1 1.1	1 1.1
NCT SEEKING EMP	25 5.5	2 5.4	41 5.5	10 6.4	0 0.0	10 6.0	0 0.0	0 0.0	0 0.0
COLUMN TOTAL	704 100.0%	37 100.0%	741 100.0%	157 100.0%	11 100.0%	168 100.0%	52 100.0%	52 100.0%	104 100.0%
PLANS FOR FURTHER STUDIES									
NO RESPONSE	22 3.1%	1 2.7%	23 3.1%	3 1.9%	0 0.0%	3 1.8%	4 4.3%	4 4.3%	4 4.3%
PLAN FURTHER STUDIES	333 47.3	10 27.0	343 46.3	61 38.5	7 63.6	68 40.5	4 4.3	4 4.3	4 4.3
DO NOT PLAN FURTHER STUDIES	345 49.6	26 70.3	375 50.6	53 59.2	4 36.4	57 57.7	84 91.3	84 91.3	84 51.3
COLUMN TOTAL	704 100.0%	37 100.0%	741 100.0%	157 100.0%	11 100.0%	168 100.0%	52 100.0%	52 100.0%	104 100.0%

TABLE E-4

PLANS FOR FURTHER STUDIES OF UNEMPLOYED CHEMICAL ENGINEERS
by Degree Level

HIGHEST DEGREE	PLANS FOR FURTHER STUDIES	SEEKING EMPLOYMENT	NOT SEEKING EMPLOYMENT
BACHELORS	NO RESPONSE	7 17.9%	3 7.3%
	PLAN FURTHER STUDIES	6 15.4	24 82.9
	DO NOT PLAN FURTHER STUDIES	26 66.7	4 9.8
	COLUMN TOTAL	39 100.0%	41 100.0%
MASTERS	NO RESPONSE	0 0.0%	1 10.0%
	PLAN FURTHER STUDIES	1 25.0	8 80.0
	DO NOT PLAN FURTHER STUDIES	3 75.0	1 10.0
	COLUMN TOTAL	4 100.0%	10 100.0%
PHD	DO NOT PLAN FURTHER STUDIES	1 100.0%	0 0.0%
	COLUMN TOTAL	1 100.0%	0 0.0%

TABLE E-5

POSTGRADUATION STATUS OF CHEMISTRY GRADUATES BY DEGREE LEVEL AND CITIZENSHIP

EMPLOYMENT STATUS	BACHELORS			MASTERS			PHD		
	U.S. CITIZEN	PERM RESIDENT	CIHER VISA	U.S. CITIZEN	PERM RESIDENT	CIHER VISA	U.S. CITIZEN	PERM RESIDENT	CIHER VISA
FULLTIME IN CHEM.	565 22.5%	4 22.2%	0 0.0%	141 42.5%	9 40.9%	4 17.4%	205 48.8%	8 28.6%	5 19.2%
FULLTIME NONCHEM.	152 6.9	3 16.7	0 0.0	30 9.0	0 0.0	0 0.0	7 1.7	2 7.1	1 3.8
FCSTGCC,GRADASST	665 31.1	3 16.7	10 50.0	114 34.3	8 36.4	16 69.6	150 45.2	15 53.6	20 76.5
MILITARY,VISTA	61 2.8	0 0.0	0 0.0	8 2.4	0 0.0	0 0.0	7 1.7	0 0.0	0 0.0
SEEKING EMPLOYMT	183 8.3	4 22.2	4 20.0	15 4.5	2 9.1	0 0.0	7 1.7	3 10.7	0 0.0
NCT SEEKING EMPL	618 28.0	4 22.2	6 30.0	24 7.2	3 13.6	3 13.0	4 1.0	0 0.0	0 0.0
COLUMN TOTAL	2204 100.0%	18 100.0%	20 100.0%	322 100.0%	22 100.0%	23 100.0%	420 100.0%	28 100.0%	26 100.0%
PLANS FOR FURTHER STUDIES									
NC RESPONSE	80 3.6%	2 11.1%	0 0.0%	5 1.5%	0 0.0%	1 4.3%	15 3.6%	2 7.1%	4 15.4%
PLAN FURTHER STUDIES	1509 68.4	9 50.0	20 100.0	175 52.7	12 54.5	20 87.0	47 11.2	2 7.1	2 7.7
DO NOT PLAN FURTHER STUDIES	616 27.9	7 38.9	0 0.0	152 45.8	10 45.5	2 8.7	358 85.2	24 85.7	20 76.9
COLUMN TOTAL	2205 100.0%	18 100.0%	20 100.0%	322 100.0%	22 100.0%	23 100.0%	420 100.0%	28 100.0%	26 100.0%

TABLE E-6

POSTGRADUATION STATUS OF CHEMICAL ENGINEERING GRADUATES BY DEGREE LEVEL AND CITIZENSHIP

EMPLOYMENT STATUS	BACHELORS		MASTERS		PHD	
	U.S. CITIZEN	PERM RESIDENT	U.S. CITIZEN	PERM RESIDENT	U.S. CITIZEN	PERM RESIDENT
		OTHER VISA		OTHER VISA		OTHER VISA
FULLTIME IN CHEM	478 66.3%	6 66.7%	104 83.5%	8 53.3%	11 35.2%	17 54.4%
FULLTIME NONCHEM	41 5.7	11.1	2 1.6	2 13.3	2 7.1	1 5.6
POSTDOC, GRADASST	118 16.4	0 0.0	10 8.1	1 6.7	12 42.5	0 0.0
MILITARY, VISTA	8 1.1	0 0.0	1 0.8	0 0.0	0 0.0	0 0.0
SEEKING EMPLOYMT	35 4.9	2 22.2	1 0.8	2 13.3	1 3.6	0 0.0
NOT SEEKING EMPL	41 5.7	0 0.0	6 4.8	2 13.3	2 7.1	0 0.0
COLUMN TOTAL	721 100.0%	9 100.0%	124 100.0%	15 100.0%	28 100.0%	18 100.0%
PLANS FOR FURTHER STUDIES						
NO RESPONSE	20 2.8%	2 22.2%	3 2.4%	0 0.0%	0 0.0%	2 11.1%
PLAN FURTHER STUDIES	329 45.6	4 44.4	42 33.5	7 46.7	15 67.9	2 11.1
DO NOT PLAN FURTHER STUDIES	372 51.6	3 33.3	75 63.7	8 53.3	9 32.1	14 77.8
COLUMN TOTAL	721 100.0%	9 100.0%	124 100.0%	15 100.0%	28 100.0%	18 100.0%

TABLE E-7

POSTGRADUATION STATUS OF MINORITY CHEMISTS
by Degree Level

EMPLOYMENT STATUS	BACHLCRS	MASTERS	PHD	ROW TOTAL
FULLTIME IN CHEM	25 23.1%	10 27.8%	16 47.1%	51 28.7%
FULLTIME NONCHEM	13 12.0	2 5.6	0 0.0	15 8.4
POSTDOC, GRADASST	21 19.4	20 55.6	17 50.0	58 32.6
MILITARY, VISTA	1 0.9	0 0.0	0 0.0	1 0.6
SEEKING EMPLOYMT	7 6.5	0 0.0	1 2.9	8 4.5
NOT SEEKING EMPL	41 38.0	4 11.1	0 0.0	45 25.3
COLUMN TOTAL	108 100.0%	36 100.0%	34 100.0%	178 100.0%
PLANS FOR FURTHER STUDIES				
NO RESPONSE	4 3.7%	0 0.0%	3 8.8%	7 3.9%
PLAN FURTHER STUDIES	71 65.1	27 75.0	4 11.8	102 57.0
DO NOT PLAN FURTHER STUDIES	24 31.2	9 25.0	27 79.4	70 39.1
COLUMN TOTAL	109 100.0%	36 100.0%	34 100.0%	179 100.0%

TABLE E-8

POSTGRADUATION STATUS OF MINORITY CHEMICAL ENGINEERS
by Degree Level

EMPLOYMENT STATUS	BACHLORS	MASTERS	P.H.D	ROW TOTAL
FULLTIME IN CHEM	20 66.7%	3 30.0%	16 94.1%	39 68.4%
FULLTIME NONCHEM	2 6.7	1 10.0	0 0.0	3 5.3
POSTDOC, GRADASST	4 13.3	4 40.0	1 5.9	9 15.8
SEEKING EMPLOYMT	1 3.3	1 10.0	0 0.0	2 3.5
NOT SEEKING EMPL	2 10.0	1 10.0	0 0.0	3 7.0
COLUMN TOTAL	30 100.0%	10 100.0%	17 100.0%	57 100.0%

PLANS FOR FURTHER STUDIES

NO RESPONSE	3 10.0%	0 0.0%	0 0.0%	3 5.3%
PLAN FURTHER STUDIES	13 43.3	6 60.0	1 5.9	20 35.1
DO NOT PLAN FURTHER STUDIES	14 46.7	4 40.0	16 94.1	34 59.6
COLUMN TOTAL	30 100.0%	10 100.0%	17 100.0%	57 100.0%

TABLE E-9

POSTGRADUATION STATUS OF B.S. CHEMISTRY GRADUATES
by Certification Status

EMPLOYMENT STATUS	E. S. CHEMISTS		
	CERTIFIED	NON-CERTIFIED	ROW TOTAL
FULLTIME IN CHEM	279 24.7%	230 20.6%	509 22.6%
FULLTIME NONCHEM	60 5.3	95 8.5	155 6.9
POSTDOC, GRADASST	484 42.8	218 19.5	702 31.2
MILITARY, VISTA	35 3.1	26 2.3	61 2.7
SEEKING EMPLOYMENT	102 9.0	90 8.1	192 8.5
NOT SEEKING EMPLOYMENT	170 15.0	459 41.1	629 28.0
COLUMN TOTAL	1130 100.0%	1119 100.0%	2249 100.0%

PLANS FOR FURTHER STUDIES	E. S. CHEMISTS		
	CERTIFIED	NON-CERTIFIED	ROW TOTAL
NO RESPONSE	41 3.6%	41 3.7%	82 3.6%
PLAN FURTHER STUDIES	758 67.1	785 70.2	1543 68.6
DO NOT PLAN FURTHER STUDIES	331 29.3	293 26.2	624 27.7
COLUMN TOTAL	1130 100.0%	1119 100.0%	2249 100.0%

1A "certified bachelor" is one who has been certified by the chemistry department chairman to the American Chemical Society, as having successfully completed the curriculum in chemistry as approved by the ACS Committee on Professional Training, and is, therefore, eligible to become a member of ACS.

TABLE E-10

FIELD OF FURTHER STUDIES OF B.S. CHEMISTRY GRADUATES
by Certification Status

FIELD OF FURTHER STUDIES	E. S. CHEMISTS		RC% TOTAL
	CERTIFD.	NON-CERTIFD.	
CHEMISTRY	350 51.5%	139 18.4%	489 34.1%
OTH PHYS SCIENCE	17 2.5	15 2.0	32 2.2
CHEMICAL ENGRING	23 3.4	10 1.3	33 2.3
OTHER ENGRING	14 2.1	7 0.9	21 1.5
BIOCHEMISTRY	69 10.1	76 10.1	145 10.1
OTH LIFE SCIENCE	9 1.3	31 4.1	40 2.8
MEDICINE	112 16.5	325 43.1	437 30.5
DENTISTRY	11 1.6	51 6.8	62 4.3
PHARMACEUTICS	21 3.1	18 2.4	39 2.7
BUSINESS ADMINIS	30 4.4	27 3.6	57 4.0
LAW	7 1.0	7 0.9	14 1.0
SOCIAL SCIENCE	2 0.3	5 0.7	7 0.5
OTHER	15 2.2	43 5.7	58 4.0
COLUMN TOTAL	680 100.0%	754 100.0%	1434 100.0%

See note on Table E-9.

TABLE E-11

FIELD OF FURTHER STUDIES OF CHEMISTRY GRADUATES BY DEGREE LEVEL AND SEX

FIELD OF FURTHER STUDIES	BACHELORS			MASTERS			PHD		
	WOMEN	MEN	RCM TOTAL	WOMEN	MEN	RCM TOTAL	WOMEN	MEN	RCM TOTAL
CHEMISTRY	352 34.7%	96 31.9%	489 34.1%	27 57.4%	163 70.1%	130 67.0%	0 0.0%	21 44.7%	21 41.2%
OTH PHYS SCIENCE	24 2.1	8 2.7	32 2.2	0 0.0	3 2.0	3 1.5	0 0.0	3 4.3	3 3.5
CHEMICAL ENGRING	24 2.1	9 3.0	33 2.3	1 2.1	0 0.0	1 0.5	0 0.0	1 2.1	1 2.0
OTHER ENGRING	17 1.5	4 1.3	21 1.5	1 2.1	2 1.4	3 1.5	0 0.0	0 0.0	0 0.0
BIOCHEMISTRY	165 9.3	40 13.3	145 10.1	8 17.0	11 7.5	19 9.8	1 25.0	6 12.8	7 13.7
OTH LIFE SCIENCE	27 2.4	13 4.3	40 2.8	4 8.5	3 2.0	7 3.6	1 25.0	2 4.3	3 5.9
MEDICINE	357 31.5	80 26.6	437 30.5	2 4.3	3 2.0	5 2.6	0 0.0	1 2.1	1 2.0
DENTISTRY	56 4.5	5 1.7	61 4.3	1 2.1	2 1.4	3 1.5	0 0.0	1 2.1	1 2.0
PHARMACEUTICS	26 2.3	13 4.3	39 2.7	0 0.0	3 2.0	3 1.5	0 0.0	0 0.0	0 0.0
BUSINESS ADMINIS	47 4.2	10 3.3	57 4.0	2 4.3	9 6.1	11 5.7	0 0.0	16 21.3	16 19.6
LAW	10 0.9	4 1.3	14 1.0	0 0.0	0 0.0	0 0.0	0 0.0	1 2.1	1 2.0
SOCIAL SCIENCE	4 0.4	3 1.0	7 0.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
OTHER	42 3.7	16 5.3	58 4.0	1 2.1	8 5.4	9 4.6	2 50.0	4 4.3	4 7.8
COLUMN TOTAL	1132 100.0%	301 100.0%	1433 100.0%	47 100.0%	147 100.0%	194 100.0%	4 100.0%	47 100.0%	51 100.0%

TABLE E-12

FIELD OF FURTHER STUDIES OF CHEMICAL ENGINEERING GRADUATES BY DEGREE LEVEL AND SEX

FIELD OF FURTHER STUDIES	BACHELORS			MASTERS			PHD	
	MEN	WOMEN	RCM TOTAL	MEN	WOMEN	RCM TOTAL	MEN	RCM TOTAL
CHEMISTRY	5 1.6%	0 0.0%	5 1.6%	3 3.3%	1 14.3%	4 4.4%	0 0.0%	0 0.0%
OTH PHYS SCIENCE	2 0.7	0 0.0	2 0.6	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
CHEMICAL ENGRING	158 51.5	6 60.0	164 51.7	35 57.4	2 28.6	37 54.4	1 25.0	1 25.0
OTHER ENGRING	23 7.5	2 20.0	25 7.9	2 3.3	2 28.6	4 5.5	0 0.0	0 0.0
BIOCHEMISTRY	1 0.3	0 0.0	1 0.3	1 1.6	0 0.0	1 1.5	0 0.0	0 0.0
OTH LIFE SCIENCE	1 0.3	0 0.0	1 0.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
MEDICINE	15 4.5	0 0.0	15 4.7	2 3.3	0 0.0	2 2.5	0 0.0	0 0.0
DENTISTRY	1 0.3	0 0.0	1 0.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
PHARMACEUTICS	0 0.0	0 0.0	0 0.0	1 1.6	0 0.0	1 1.5	0 0.0	0 0.0
BUSINESS ADMINIS	50 29.3	2 20.0	52 29.0	17 27.5	2 28.6	19 27.9	3 75.0	3 75.0
LAW	6 2.0	0 0.0	6 1.9	1 1.6	0 0.0	1 1.5	0 0.0	0 0.0
SOCIAL SCIENCE	1 0.3	0 0.0	1 0.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
OTHER	4 1.3	0 0.0	4 1.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
COLUMN TOTAL	307 100.0%	10 100.0%	317 100.0%	61 100.0%	7 100.0%	68 100.0%	4 100.0%	4 100.0%

TABLE E-1.3

NUMBER OF FIRM JOB OFFERS TO CHEMISTRY GRADUATES WHO ACCEPTED FULL-TIME EMPLOYMENT

by Degree Level and Sex

NUMBERS OF OFFERS	BACHELORS			MASTERS			PHD		
	MEN	WOMEN	RCM TOTAL	MEN	WOMEN	RCM TOTAL	MEN	WOMEN	RCM TOTAL
INEXPERIENCED									
1	165 64.5%	81 58.7%	246 62.4%	25 45.5%	11 57.5%	40 48.2%	63 48.8%	8 42.1%	71 48.0%
2	61 23.8	33 23.5	94 23.5	19 29.7	5 26.3	24 28.9	36 27.9	5 26.3	41 27.7
3	20 7.8	18 13.0	38 9.6	12 18.8	2 10.5	14 16.9	16 12.4	4 21.1	20 13.5
4	23 8.8	4 2.9	27 6.7	3 4.7	1 5.3	4 4.8	5 3.9	0 0.0	5 3.4
5	0 0.0	2 1.4	2 0.5	0 0.0	0 0.0	0 0.0	8 6.2	1 5.3	9 6.1
6 OR 7	1 0.4	0 0.0	1 0.3	1 1.6	0 0.0	1 1.2	1 0.8	1 5.3	2 1.4
8 OR 9	1 0.4	0 0.0	1 0.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
TOTAL	256 100.0%	138 100.0%	394 100.0%	64 100.0%	19 100.0%	83 100.0%	125 100.0%	19 100.0%	148 100.0%
EXPERIENCED									
1	56 68.3%	10 50.0%	66 64.7%	34 69.4%	5 75.0%	42 70.5%	30 48.4%	3 60.0%	33 45.3%
2	13 15.5	8 40.0	21 20.0	8 16.3	0 0.0	8 13.1	17 27.4	0 0.0	17 25.4
3	8 9.8	1 5.0	9 8.8	5 10.2	2 16.7	7 11.5	10 16.1	2 40.0	12 17.9
4	3 3.7	1 5.0	4 3.9	1 2.0	1 8.3	2 3.3	3 4.8	0 0.0	3 4.5
5	1 1.2	0 0.0	1 1.0	0 0.0	0 0.0	0 0.0	1 1.6	0 0.0	1 1.5
6 OR 7	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 1.6	0 0.0	1 1.5
10 OR MORE	1 1.2	0 0.0	1 1.0	1 2.0	0 0.0	1 1.6	0 0.0	0 0.0	0 0.0
TOTAL	82 100.0%	40 100.0%	122 100.0%	45 100.0%	12 100.0%	61 100.0%	67 100.0%	5 100.0%	67 100.0%

NUMBER OF FIRM JOB OFFERS TO CHEMICAL ENGINEERING GRADUATES

Who Accepted Full-time Employment, by Degree Level, and Sex

NUMBERS OF OFFERS	BACHELORS			MASTERS			PHD	
	MEN	WOMEN	RCM TOTAL	MEN	WOMEN	RCM TOTAL	MEN	RCM TOTAL
INEXPERIENCED								
1	80 21.0%	2 8.3%	82 20.4%	17 21.3%	0 0.0%	17 20.2%	7 14.6%	7 14.6%
2	63 16.5	2 8.3	65 16.0	12 15.0	0 0.0	12 14.3	5 18.8	9 18.8
3	77 20.2	5 20.8	82 20.2	16 20.0	1 25.0	17 20.2	10 20.8	10 20.8
4	36 9.4	2 8.3	38 9.4	5 11.3	1 25.0	6 11.9	7 14.6	7 14.6
5	25 7.6	4 16.7	33 8.1	3 3.8	2 50.0	5 6.0	4 8.3	4 8.3
6 OR 7	47 12.3	3 12.5	50 12.3	13 16.3	0 0.0	13 15.5	6 12.5	6 12.5
8 OR 9	27 7.1	1 4.2	28 6.9	4 5.0	0 0.0	4 4.8	1 2.1	1 2.1
10 CR MORE	22 5.8	5 20.8	27 6.7	6 7.5	0 0.0	6 7.1	4 8.3	4 8.3
COLUMN TOTAL	381 100.0%	24 100.0%	405 100.0%	80 100.0%	4 100.0%	84 100.0%	48 100.0%	48 100.0%
EXPERIENCED								
1	16 22.2%	1 25.0%	17 22.4%	17 50.0%	2 50.0%	19 50.0%	12 33.3%	12 33.3%
2	8 11.1	1 25.0	9 11.8	2 5.5	1 25.0	3 7.5	6 16.7	6 16.7
3	5 6.5	0 0.0	5 6.6	6 17.6	0 0.0	6 15.8	5 13.5	5 13.5
4	5 12.5	0 0.0	9 11.8	0 0.0	0 0.0	0 0.0	3 8.3	3 8.3
5	11 15.3	0 0.0	11 14.5	2 5.5	0 0.0	2 5.3	2 5.6	2 5.6
6 OR 7	9 12.5	0 0.0	9 11.8	0 0.0	0 0.0	0 0.0	4 11.1	4 11.1
8 CR 9	3 4.2	0 0.0	3 3.5	1 2.5	1 25.0	2 5.3	1 2.8	1 2.8
10 CR MORE	11 15.3	2 50.0	13 17.1	6 17.6	0 0.0	6 15.8	3 8.3	3 8.3
COLUMN TOTAL	72 100.0%	4 100.0%	76 100.0%	34 100.0%	4 100.0%	38 100.0%	36 100.0%	36 100.0%

TABLE S-1

STARTING YEARLY SALARIES
of Inexperienced Chemists and Chemical Engineers
by Degree Level and Sex

HIGHEST DEGREE		CHEMISTS		
		MEN	WOMEN	ROW TOTAL
BACHELORS	MEDIAN	10000.	9612.	
	AR. MEAN	9963.	9816.	9911.
	NUMBER	258	141	399
	STD. DEV.	1768.	1976.	1843.
MASTERS	MEDIAN	12000.	11000.	
	AR. MEAN	11962.	10872.	11715.
	NUMBER	65	19	84
	STD. DEV.	2015.	2215.	2099.
PHD	MEDIAN	17000.	17300.	
	AR. MEAN	16371.	15718.	16287.
	NUMBER	129	19	148
	STD. DEV.	2680.	3604.	2809.
COLUMN TOTAL	AR. MEAN	12079.	10554.	11647.
	NUMBER	452	179	631
	STD. DEV.	3497.	2858.	3396.

HIGHEST DEGREE		CHEMICAL ENGINEERS		
		MEN	WOMEN	ROW TOTAL
BACHELORS	MEDIAN	14400.	14700.	
	AR. MEAN	14300.	14719.	14325.
	NUMBER	381	24	405
	STD. DEV.	1046.	873.	1040.
MASTERS	MEDIAN	15500.	15600.	
	AR. MEAN	15311.	15950.	15342.
	NUMBER	79	4	83
	STD. DEV.	1442.	592.	1417.
PHD	MEDIAN	20000.	0.	
	AR. MEAN	19877.	0.	19877.
	NUMBER	48	0	48
	STD. DEV.	1633.	0.	1633.
COLUMN TOTAL	AR. MEAN	14984.	14895.	14979.
	NUMBER	508	28	536
	STD. DEV.	2005.	938.	1964.

TABLE S-2

STARTING YEARLY SALARIES OF INEXPERIENCED CHEMISTS AND CHEMICAL ENGINEERS BY EMPLOYER AND DEGREE LEVEL

DEGREE	PRIVATE INDUSTRY										HIGH SCH, OTHR SC	FEDERAL GOVERNMENT	STATE, LOCL GOV	HOSPITAL, IND LAB	OTHER NONPROFIT	RCM TOTAL
	TOTAL INDUSTRY	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING	MANUFAC- TURING						
CHEMISTS	MEDIAN	16500.	16800.	16800.	16800.	16800.	16800.	16800.	16800.	16800.	8130.	8925.	9600.	8600.	9000.	9900. 391 1850.
	AR. MEAN	16486.	16655.	16655.	16655.	16655.	16655.	16655.	16655.	8312.	9587.	5533.	8912.	9225.		
	NUMBER	252	202	202	202	202	202	202	202	202	24	14	21	29	12	
MASTERS	MEDIAN	12600.	12600.	12600.	12600.	12600.	12600.	12600.	12600.	12600.	9000.	10520.	12000.	9900.	10000.	11741. 83 2099.
	AR. MEAN	12471.	12843.	12843.	12843.	12843.	12843.	12843.	12843.	9100.	11657.	11739.	11000.	10725.		
	NUMBER	51	40	40	40	40	40	40	40	40	2	5	2	4		
PHD	MEDIAN	17500.	17400.	17400.	17400.	17400.	17400.	17400.	17400.	17400.	0.	17700.	10500.	8500.	10000.	16269. 147 2811.
	AR. MEAN	17404.	17413.	17413.	17413.	17413.	17413.	17413.	17413.	0.	17215.	10500.	8500.	14000.		
	NUMBER	110	53	53	53	53	53	53	53	53	3	1	1	2		
TOTAL	AR. MEAN	12574.	12755.	12755.	12755.	12755.	12755.	12755.	12755.	10072.	8372.	11184.	9977.	9030.	10089.	11654. 621 3404.
	NUMBER	412	335	335	335	335	335	335	335	75	26	27	32	18		
	STD. DEV	3432.	3343.	3343.	3343.	3343.	3343.	3343.	3343.	2815.	1073.	2515.	1890.	2284.		
CHEMICAL ENGINEERS	MEDIAN	14400.	14500.	14476.	14500.	14500.	14500.	14500.	14500.	12900.	0.	11047.	11940.	0.	0.	14328. 397 1046.
	AR. MEAN	14351.	14476.	14476.	14476.	14476.	14476.	14476.	14476.	12900.	0.	11949.	12270.	0.	0.	
	NUMBER	286	315	315	315	315	315	315	315	1	0.	8	2	0.	0.	
MASTERS	MEDIAN	15600.	15600.	15600.	15600.	15600.	15600.	15600.	15600.	0.	0.	15000.	0.	13200.	0.	15339. 82 1426.
	AR. MEAN	15500.	15600.	15600.	15600.	15600.	15600.	15600.	15600.	0.	0.	15494.	0.	13200.	0.	
	NUMBER	78	55	55	55	55	55	55	55	0.	0.	3	0.	1	0.	
PHD	MEDIAN	20000.	20000.	20000.	20000.	20000.	20000.	20000.	20000.	16000.	0.	0.	0.	0.	20000.	19853. 47 1642.
	AR. MEAN	20000.	20000.	20000.	20000.	20000.	20000.	20000.	20000.	16000.	0.	0.	0.	20000.		
	NUMBER	44	34	34	34	34	34	34	34	2	0.	0.	0.	1		
TOTAL	AR. MEAN	15026.	15025.	15025.	15025.	15025.	15025.	15025.	15025.	15500.	0.	12916.	12270.	13200.	20000.	14979. 526 1960.
	NUMBER	508	408	408	408	408	408	408	408	111	0.	2	1	1		
	STD. DEV	1919.	1755.	1755.	1755.	1755.	1755.	1755.	1755.	4132.	0.	2195.	467.	0.		

TABLE S-3

STARTING YEARLY SALARIES OF INEXPERIENCED CHEMISTS BY EMPLOYER, DEGREE LEVEL, AND SEX

SEX	HIGHEST DEGREE	PRIVATE INDUSTRY										COLLEGE, UNIVERSITY	HIGH SCH, OTHR SC	FEDERAL GOVERNMT	STATE, LOCL GOV	HOSPITAL, IND LAB	OTHER NONPROFT	RCM TOTAL
		TOTAL INDUSTRY	MANUFAC- TURING	MANUFAC- TURING	NCAPANU- FACTURING													
MEN	MEDIAN	10500.	10500.	10500.	10200.	8500.	8300.	8925.	9600.	8600.	8700.	9552.						
	AR. MEAN	10400.	10510.	10510.	9885.	8822.	8423.	9315.	9665.	9086.	9017.		251.					
	NUMBER	163.	140.	29.	2335.	1551.	1143.	1505.	1825.	1966.	571.							
	STD. DEV.	1627.	1426.	1627.	2335.	1551.	1143.	1505.	1825.	1966.	571.	1775.						
MASTERS	MEDIAN	12000.	12000.	12000.	11000.	10000.	9000.	10520.	12000.	12100.	10000.	11562.						
	AR. MEAN	12000.	12000.	12000.	11328.	9775.	9100.	11799.	11739.	12100.	10725.		65.					
	NUMBER	1520.	1520.	1520.	1436.	1150.	142.	1862.	1649.	0.	1746.							
	STD. DEV.	1520.	1520.	1520.	1436.	1150.	142.	1862.	1649.	0.	1746.	2015.						
PHD	MEDIAN	17400.	17400.	17400.	17400.	12600.	0.	17700.	10500.	0.	10000.	16351.						
	AR. MEAN	17346.	17417.	17417.	16877.	12622.	0.	17215.	10500.	0.	14000.		128.					
	NUMBER	98.	85.	13.	13.	24.	0.	3.	1.	0.	2.							
	STD. DEV.	1726.	1725.	1725.	1696.	2177.	0.	1549.	0.	0.	5657.	2681.						
TOTAL	AR. MEAN	12513.	12104.	12104.	11934.	10761.	6503.	11493.	10255.	9237.	10417.	12091.						
	NUMBER	3066.	2566.	2566.	50.	50.	17.	20.	19.	20.	12.		444.					
	STD. DEV.	3559.	3521.	3521.	3625.	2651.	1093.	3153.	1521.	2028.	2707.			3502.				
WOMEN	MEDIAN	10000.	11200.	11200.	10000.	7900.	8130.	11000.	9600.	8000.	9000.	9807.						
	AR. MEAN	10000.	10511.	10511.	9655.	7835.	8126.	10075.	9318.	8581.	9433.		140.					
	NUMBER	83.	62.	21.	2024.	1136.	1050.	1576.	1751.	1899.	922.							
	STD. DEV.	1754.	1592.	1592.	2024.	1136.	1050.	1576.	1751.	1899.	922.	1981.						
MASTERS	MEDIAN	12000.	12000.	12000.	10500.	7800.	0.	10520.	0.	9900.	0.	10543.						
	AR. MEAN	11554.	12422.	12422.	10551.	8275.	0.	10520.	0.	9900.	0.		18.					
	NUMBER	12.	3.	3.	3.	4.	0.	1.	0.	1.	0.							
	STD. DEV.	1286.	884.	884.	1425.	2566.	0.	0.	0.	0.	0.	2257.						
PHD	MEDIAN	17500.	17300.	17300.	18600.	11500.	0.	0.	0.	8500.	0.	15718.						
	AR. MEAN	17877.	17366.	17366.	18500.	12601.	0.	0.	0.	8500.	0.		19.					
	NUMBER	12.	8.	4.	4.	6.	0.	0.	0.	1.	0.							
	STD. DEV.	1418.	1400.	1400.	841.	3005.	0.	0.	0.	0.	0.	3604.						
TOTAL	AR. MEAN	11604.	11791.	11791.	11075.	8684.	8126.	10152.	9318.	8684.	9433.	10557.						
	NUMBER	107.	75.	28.	28.	25.	9.	6.	8.	12.	6.		177.					
	STD. DEV.	2835.	2448.	2448.	3732.	2673.	1050.	1777.	1751.	1760.	922.			2873.				

TABLE 5-1 STATISTICS VARIATION IN EMPLOYMENT BY OCCUPATION AND REGIONAL ENGINEERS BY GEOGRAPHIC REGION AND DEGREE LEVEL

FIELD OF DEGREE HIGHEST DEGREE	GEOGRAPHIC REGION										ROM TOTAL
	PACIFIC	MOUNTAIN	WEST NC. CENTRAL	WEST SC. CENTRAL	EAST NC. CENTRAL	EAST SC. CENTRAL	MIDDLE ATLANTIC	SOUTH ATLANTIC	NEW ENGLAND		
CHEMISTS											
BACHELORS	5612. AR. MEAN NUMBER	10000. 5778. 10	9600. 9563. 33	12000. 11776. 11	10500. 10456. 85	8688. 9100. 13	10400. 10245. 123	9000. 8821. 47	8600. 5077. 34		9916. 396
STD. DEV.	1830.	2398.	1822.	1325.	1722.	2261.	1751.	1267.	1919.		1847.
MASTERS	11804. AR. MEAN NUMBER	9152. 5438. 4	11000. 11226. 5	12600. 12060. 9	12000. 11851. 11	11028. 11131. 3	12500. 12205. 23	10520. 10983. 12	13000. 12371. 7		11741. 83
STD. DEV.	1625.	453.	863.	1631.	1525.	3384.	2225.	2911.	1430.		2099.
PHD	15000. AR. MEAN NUMBER	12000. 12713. 3	15000. 14343. 7	17500. 17633. 12	17000. 16395. 22	15000. 15387. 9	17325. 16391. 40	16500. 16423. 28	18500. 17613. 15		16287. 148
STD. DEV.	2555.	2424.	3470.	1462.	2753.	2857.	3193.	1839.	2748.		2809.
COLUMN TOTAL	11214. 61 2930.	10216. 17 2334.	10492. 45 2682.	14033. 32 3157.	11693. 118 3013.	11607. 25 3876.	11809. 186 3501.	11566. 87 3854.	11775. 56 4266.		11661. 627 3401.
CHEMICAL ENGINEERS											
BACHELORS	14160. AR. MEAN NUMBER	14300. 14375. 8	14100. 13646. 17	15000. 14819. 106	14200. 14254. 82	14700. 14638. 17	14400. 14155. 95	14200. 14018. 40	13800. 13782. 12		14327. 402
STD. DEV.	1265.	783.	681.	932.	841.	623.	1235.	899.	653.		1042.
MASTERS	15420. AR. MEAN NUMBER	0. 0. 0.	15300. 15384. 5	16200. 15993. 15	15000. 14678. 14	14500. 15025. 4	15500. 15361. 20	14500. 15228. 8	16200. 15717. 7		15342. 83
STD. DEV.	1134.	0.	781.	970.	1514.	1050.	1872.	1534.	1091.		1418.
PHD	20000. AR. MEAN NUMBER	0. 0. 0.	0. 0. 0.	20800. 20140. 5	20000. 19708. 13	19800. 19800. 1	20000. 19876. 21	20100. 20100. 4	20000. 20000. 1		19077. 48
STD. DEV.	1804.	0.	0.	1090.	1312.	0.	2093.	1273.	0.		1633.
COLUMN TOTAL	14767. 38 2065.	14375. 17 783.	14155. 22 551.	15170. 126 1431.	14959. 105 2025.	14943. 22 1285.	15216. 136 2525.	14672. 52 1932.	14770. 20 1755.		14985. 533 1967.

TABLE S-5

STARTING YEARLY SALARIES OF INEXPERIENCED M.S. AND Ph.D. CHEMISTS BY CHEMICAL SPECIALTY

HIGHEST DEGREE	CHEMICAL SPECIALTY										RCM TOTAL	
	ANALYTICAL	BIOCHEMISTRY	INORGANIC	MEDICINAL, PHARMAC	ORGANIC	PHYSICAL, THEORETICAL	POLYMER, MACROMOL	OTHER CHEMISTRY				
MASTERS	MEDIAN	12600.	12300.	11564.	9600.	11046.	11544.	13000.	11000.			11715.
	AR. MEAN	11321.	11564.	11564.	11550.	11431.	12994.	13100.	11055.			84.
	NUMBER	25	6	2	2	33	8	2	3			2095.
	STD. DEV	1794.	2163.	2163.	2758.	2253.	2377.	141.	1684.			
PHD	MEDIAN	15000.	15000.	17500.	17000.	17000.	17600.	16800.	18000.			16287.
	AR. MEAN	15312.	16000.	16666.	17000.	16280.	16330.	17400.	16476.			148.
	NUMBER	14	3	24	1	63	33	2	8			2509.
	STD. DEV	2605.	3606.	2713.	0.	3085.	2599.	849.	2651.			
COLUMN TOTAL	AR. MEAN	12754.	13554.	15855.	13367.	14613.	15679.	15250.	14997.			14632.
	NUMBER	25	9	25	3	96	41	4	11			232.
	STD. DEV	2650.	2921.	3155.	3702.	3644.	2861.	2532.	3401.			3384.

TABLE S-6

STARTING YEARLY SALARIES OF INEXPERIENCED B.S. CHEMISTS
by Employer and Certification Status

EMPLOYER	B. S. CHEMISTS			ROW TOTAL
		CERTIFD.	NON- CERTIFD.	
MANUFACTURING	M	10800.	10500.	10659.
	AM	10719.	10554.	
	No.	128	74	
	SD	1510.	1462.	
NONMANUFACTURING	M	10200.	8400.	9790.
	AM	10127.	9285.	
	No.	30	20	
	SD	2046.	2355.	
COLLEGE, UNIV.	M	7932.	8475.	8343.
	AM	8377.	8307.	
	No.	20	19	
	SD	2183.	984.	
HIGH SCH., OTHER, SCHOOL	M	8650.	8130.	8312.
	AM	8418.	8296.	
	No.	3	21	
	SD	1834.	1021.	
FEDERAL GOVER.	M	9000.	8500.	9587.
	AM	9904.	8796.	
	No.	10	4	
	SD	1599.	1742.	
STATE, LOCL. GOVERNMT.	M	9600.	9276.	9533.
	AM	9671.	9308.	
	No.	13	8	
	SD	1902.	1602.	
HOSPITAL, INC. LABORAT.	M	8600.	8500.	8912.
	AM	9600.	8491.	
	No.	11	18	
	SD	2373.	1514.	
OTHER NON- PROFT.	M	9000.	8700.	9225.
	AM	9100.	9350.	
	No.	6	6	
	SD	310.	1071.	
COLUMN TOTAL	AR. MEAN NUMBER STC DEV	10197. 221 1856.	9514. 170 1775.	9900. 391 1850.

See note on Table E-9.

TABLE S-8

YEARLY SALARIES OF POSTDOCTORAL CHEMISTS

by Employer

EMPLOYER	SALARY
MANUFACTURING	M 11500.
	AM 11750.
	NO. 353.
MANUFACTURING	M 9500.
	AM 9500.
	NO. 1.
COLLEGE, UNIV.	M 9000.
	AM 9192.
	NO. 176.
FEDERAL GOVERNMENT	M 12000.
	AM 12685.
	NO. 22.
STATE, LOCAL GOVERNMENT	M 5000.
	AM 10750.
	NO. 2.
HOSPITAL, IND. LABORAT.	M 10000.
	AM 10450.
	NO. 12.
OTHER NON-PROFIT	M 11500.
	AM 11171.
	NO. 7.
ALL EMPLOYERS	M 9900.
	AM 9708.
	NO. 223.
	SD 1834.

TABLE S-7

STARTING YEARLY SALARIES

of Inexperienced Minority Chemists

and Chemical Engineers

by Degree Level

HIGHEST DEGREE	CHEMISTS	CHEMICAL ENGINEERS
EACH LEVEL	MEDIAN 10200.	14700.
	AR. MEAN 10185.	14596.
	NUMBER 20.	18.
MASTERS	STD. DEV. 1580.	1074.
	MEDIAN 14565.	15000.
	AR. MEAN 14565.	15250.
PHD	NUMBER 1.	2.
	STD. DEV. 0.	353.
	MEDIAN 18000.	20000.
COLUMN TOTAL	AR. MEAN 18038.	15718.
	NUMBER 8.	11.
	STD. DEV. 1200.	1288.
TOTAL	AR. MEAN 12502.	16455.
	NUMBER 29.	31.
	STD. DEV. 3847.	2659.

TABLE T-1

AGE DISTRIBUTION

of B.S. Chemistry and Chemical Engineering Graduates by Sex

AGE CATEGORY	CHEMISTS			CHEMICAL ENGINEERS		
	MEN	WOMEN	ROW TOTAL	MEN	WOMEN	ROW TOTAL
19 OR LESS	1 0.1%	0 0.0%	1 0.0%	0 0.0%	0 0.0%	0 0.0%
20	14 0.9	5 1.0	19 0.9	0 0.0	0 0.0	0 0.0
21	134 8.6	66 12.6	200 9.7	27 4.1	1 2.7	28 4.1
22	923 59.5	336 64.4	1259 60.8	324 49.8	24 64.9	348 50.6
23	241 15.5	73 14.0	314 15.2	188 28.9	7 18.9	195 28.3
24	65 4.2	16 3.1	81 3.9	51 7.8	1 2.7	52 7.6
25	38 2.5	5 1.0	43 2.1	14 2.2	0 0.0	14 2.0
26	22 1.4	5 1.0	27 1.3	12 1.8	0 0.0	12 1.7
27	29 1.9	4 0.8	33 1.6	7 1.1	2 5.4	9 1.3
28	22 1.4	2 0.4	24 1.2	11 1.7	1 2.7	12 1.7
29	13 0.8	1 0.2	14 0.7	5 0.8	0 0.0	5 0.7
30-34	33 2.1	4 0.8	37 1.8	7 1.1	1 2.7	8 1.2
35-39	14 0.9	4 0.8	18 0.9	4 0.6	0 0.0	4 0.6
40-49	1 0.1	1 0.2	2 0.1	1 0.2	0 0.0	1 0.1
COLUMN TOTAL	1550 100.0%	522 100.0%	2072 100.0%	651 100.0%	37 100.0%	688 100.0%

TABLE T-2

AGE DISTRIBUTION

of M.S. Chemistry and Chemical Engineering Graduates by Sex

AGE CATEGORY	CHEMISTS			CHEMICAL ENGINEERS		
	MEN	WOMEN	ROW TOTAL	MEN	WOMEN	ROW TOTAL
21	2 0.6%	0 0.0%	2 0.6%	0 0.0%	0 0.0%	0 0.0%
22	5 1.5	4 4.6	9 2.5	3 2.2	1 10.0	4 2.7
23	10 3.8	7 8.0	17 4.8	17 12.4	2 20.0	19 12.9
24	43 16.2	20 23.0	63 17.8	35 25.5	3 30.0	38 25.9
25	48 18.0	14 16.1	62 17.6	25 18.2	0 0.0	25 17.0
26	33 12.4	12 13.8	45 12.7	18 13.1	1 10.0	19 12.9
27	30 11.3	5 5.7	35 9.9	9 6.6	0 0.0	9 6.1
28	21 7.9	5 5.7	26 7.4	5 3.6	1 10.0	6 4.1
29	26 9.8	2 2.3	28 7.9	7 5.1	0 0.0	7 4.8
30-34	33 12.4	13 14.9	46 13.0	13 9.5	0 0.0	13 8.8
35-39	11 4.1	4 4.6	15 4.2	4 2.9	2 20.0	6 4.1
40-49	4 1.5	1 1.1	5 1.4	1 0.7	0 0.0	1 0.7
COLUMN TOTAL	266 100.0%	87 100.0%	353 100.0%	137 100.0%	10 100.0%	147 100.0%

TABLE T-3

AGE DISTRIBUTION

of Ph.D. Chemistry and Chemical Engineering Graduates by Sex

AGE CATEGORY	CHEMISTS			CHEMICAL ENGINEERS	
	MEN	WOMEN	ROW TOTAL	MEN	ROW TOTAL
24	1 0.3%	1 1.9%	2 0.5%	0 0.0%	0 0.0%
25	3 0.8%	0 0.0%	3 0.7%	1 1.2%	1 1.2%
26	35 9.1%	8 15.1%	43 9.9%	7 8.3%	7 8.3%
27	60 20.9%	12 22.6%	72 21.1%	11 13.1%	11 13.1%
28	73 19.1%	12 22.6%	85 19.5%	14 16.7%	14 16.7%
29	58 15.1%	7 13.2%	65 14.9%	13 15.5%	13 15.5%
30-34	108 28.2%	9 17.0%	117 26.8%	33 39.3%	33 39.3%
35-39	20 5.2%	2 3.8%	22 5.0%	3 3.6%	3 3.6%
40-49	5 1.3%	2 3.8%	7 1.6%	2 2.4%	2 2.4%
COLUMN TOTAL	383 100.0%	53 100.0%	436 100.0%	84 100.0%	84 100.0%

TABLE T-4

AGE DISTRIBUTION
of Postdoctoral Chemists by Sex

AGE CATEGORY	MEN	WOMEN	ROW TOTAL
24	1 0.5%	0 0.0%	1 0.5%
25	2 1.1	0 0.0	2 1.0
26	23 12.5	2 8.7	25 12.1
27	44 23.9	7 30.4	51 24.6
28	36 20.7	6 26.1	44 21.3
29	26 14.1	2 8.7	28 13.5
30-34	42 22.8	4 17.4	46 22.2
35-39	8 4.3	1 4.3	9 4.3
40-49	0 0.0	1 4.3	1 0.5
COLUMN TOTAL	184 100.0%	23 100.0%	207 100.0%

TABLE T-5

MINORITY CLASSIFICATION OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES

by Degree Level and Sex

FIELD OF DEGREE MINORITY GROUP	BACHELORS		MASTERS		PHD	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
CHEMISTS						
BLACK- NEGRO	20 1.2%	13 2.6%	4 1.4%	2 2.4%	8 2.0%	1 1.9%
AMERICAN INDIAN	3 0.2	0 0.0	2 0.7	0 0.0	1 0.2	0 0.0
ORIENTAL	33 2.0	17 3.4	18 6.4	8 9.4	17 4.2	3 5.7
SPANISH-SURNAMED	17 1.0	5 1.0	2 0.7	0 0.0	3 0.7	1 1.5
NON-MINORITY	1549 95.5	470 93.1	254 90.7	75 86.2	376 92.8	48 90.6
COLUMN TOTAL	1622 100.0%	505 100.0%	250 100.0%	85 100.0%	405 100.0%	53 100.0%
CHEMICAL ENGINEERS						
BLACK- NEGRO	6 0.5%	2 5.4%	1 0.7%	0 0.0%	0 0.0%	0 0.0%
ORIENTAL	15 2.2	1 2.7	5 3.3	1 9.1	14 15.6	0 0.0
SPANISH-SURNAMED	4 0.6	1 2.7	3 2.0	0 0.0	3 3.3	0 0.0
NON-MINORITY	651 96.3	33 89.2	142 94.0	10 90.9	73 81.1	0 0.0
COLUMN TOTAL	676 100.0%	37 100.0%	151 100.0%	11 100.0%	87 100.0%	0 0.0%

TABLE T-6

CITIZENSHIP CLASSIFICATION OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES

by Degree Level and Sex

FIELD OF DEGREE CITIZENSHIP	BACHELORS			MASTERS			PHD		
	MEN	WOMEN	RCM TOTAL	MEN	WOMEN	RCM TOTAL	MEN	WOMEN	RCM TOTAL
CHEMISTS									
U.S. CITIZEN	1687 98.6%	517 57.4%	2204 98.3%	258 85.6%	74 83.1%	332 88.1%	572 85.2%	46 83.6%	418 88.6%
PERMNT. RESIDENT	11 0.6	7 1.3	18 0.8	12 4.2	16 11.2	22 5.8	23 5.5	5 9.1	28 5.5
OTHER VISA	13 0.8	7 1.3	20 0.9	18 6.3	5 5.6	23 6.1	22 5.3	4 7.3	26 5.5
COLUMN TOTAL	1711 100.0%	531 100.0%	2242 100.0%	288 100.0%	89 100.0%	377 100.0%	417 100.0%	55 100.0%	472 100.0%
CHEMICAL ENGINEERS									
U.S. CITIZEN	683 97.0%	37 100.0%	720 97.2%	116 74.4%	8 72.7%	124 74.3%	61 66.3%	0 0.0%	61 66.3%
PERMNT. RESIDENT	5 1.3	0 0.0	5 1.2	14 9.0	1 5.1	15 9.0	18 19.6	0 0.0	18 19.6
OTHER VISA	14 1.7	0 0.0	14 1.6	26 16.7	2 18.2	28 16.8	12 14.1	0 0.0	13 14.1
COLUMN TOTAL	704 100.0%	37 100.0%	741 100.0%	156 100.0%	11 100.0%	167 100.0%	52 100.0%	0 0.0%	52 100.0%

TABLE T-7

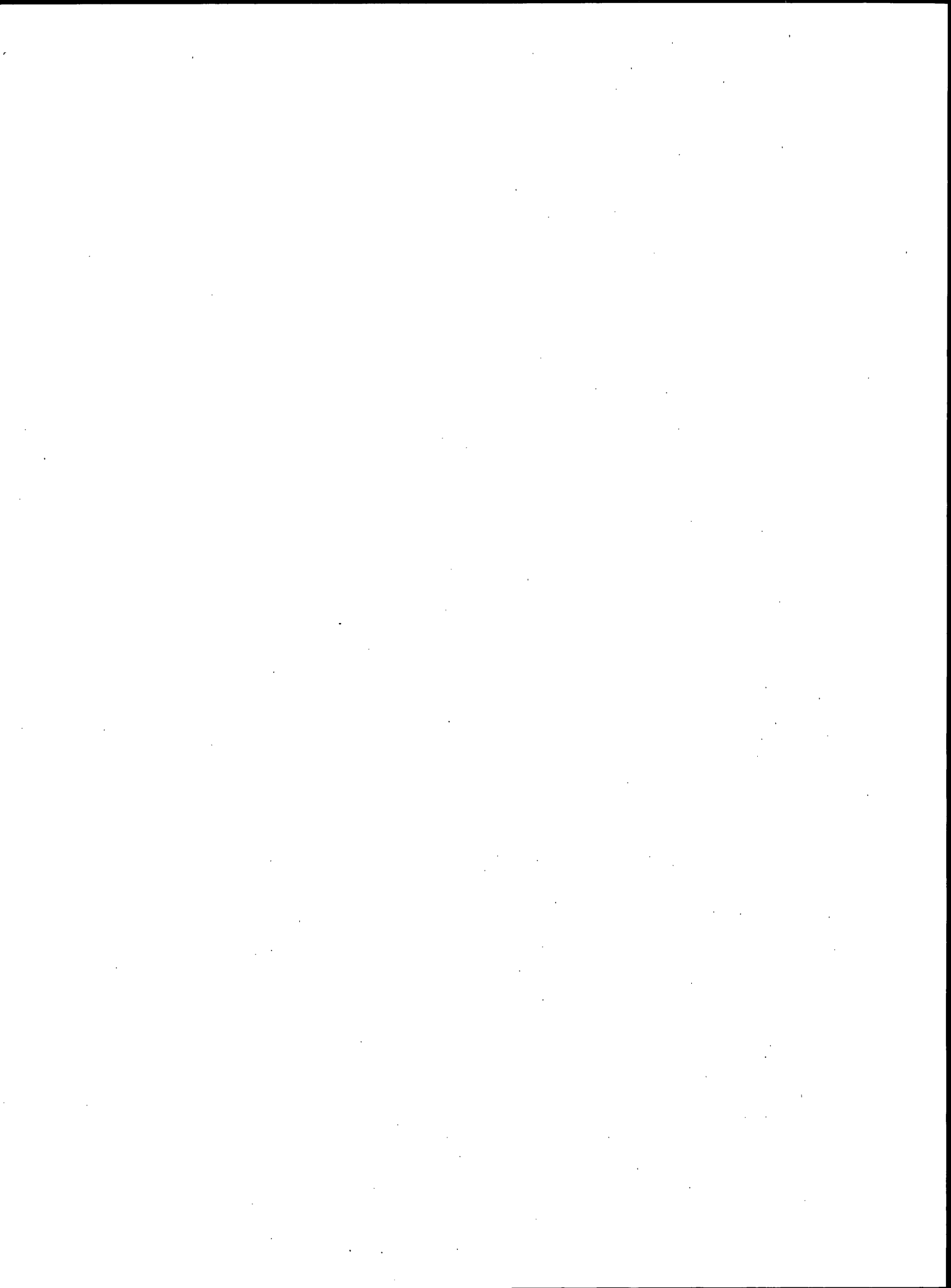
MINORITY AND CITIZENSHIP CLASSIFICATION
of Chemistry Graduates by Degree Level

HIGHEST DEGREE CITIZENSHIP	MINORITY GROUP					ROW TOTAL
	BLACK- NEGRO	AMERICAN INDIAN	ORIENTAL	SPANISH- SURNAMED	NON- MINORITY	
BACHELORS						
U.S. CITIZEN	30 90.9%	3 100.0%	42 86.0%	19 86.4%	1989 98.8%	2084 98.2%
PERMNT. RESIDENT	2 6.1	0 0.0	1 2.0	3 13.6	12 0.6	18 0.8
OTHER VISA	1 3.0	0 0.0	6 12.0	0 0.0	13 0.6	20 0.9
COLUMN TOTAL	33 100.0%	3 100.0%	50 100.0%	22 100.0%	2014 100.0%	2122 100.0%
MASTERS						
U.S. CITIZEN	5 83.3%	2 100.0%	7 26.9%	1 50.0%	306 93.0%	321 87.9%
PERMNT. RESIDENT	1 16.7	0 0.0	6 30.6	0 0.0	13 4.0	22 6.0
OTHER VISA	0 0.0	0 0.0	11 42.3	1 50.0	10 3.0	22 6.0
COLUMN TOTAL	6 100.0%	2 100.0%	26 100.0%	2 100.0%	329 100.0%	365 100.0%
PHD						
U.S. CITIZEN	5 55.6%	1 100.0%	3 15.0%	2 50.0%	396 93.4%	407 88.9%
PERMNT. RESIDENT	3 33.3	0 0.0	7 35.0	0 0.0	16 3.8	26 5.7
OTHER VISA	1 11.1	0 0.0	10 50.0	2 50.0	12 2.8	25 5.5
COLUMN TOTAL	9 100.0%	1 100.0%	20 100.0%	4 100.0%	424 100.0%	458 100.0%

TABLE T-8

MINORITY AND CITIZENSHIP CLASSIFICATION
of Chemical Engineering Graduates by Degree Level

HIGHEST DEGREE CITIZENSHIP	MINORITY GROUP				ROW TOTAL
	BLACK- NEGRO	ORIENTAL	SPANISH- SURNAME	NON- MINORITY	
BACHELORS					
U.S. CITIZEN	8 100.0%	5 52.5%	5 100.0%	672 98.2%	694 97.2%
PERMNT. RESIDENT	0 0.0	5 29.4	0 0.0	4 0.6	9 1.3
OTHER VISA	0 0.0	3 17.6	0 0.0	8 1.2	11 1.5
COLUMN TOTAL	8 100.0%	17 100.0%	5 100.0%	684 100.0%	714 100.0%
MASTERS					
U.S. CITIZEN	0 0.0%	0 0.0%	1 33.3%	119 78.8%	120 74.5%
PERMNT. RESIDENT	0 0.0	1 16.7	2 66.7	12 7.9	15 9.3
OTHER VISA	1 100.0	5 83.3	0 0.0	20 13.2	26 16.1
COLUMN TOTAL	1 100.0%	6 100.0%	3 100.0%	151 100.0%	161 100.0%
PHD					
U.S. CITIZEN	0 0.0%	2 21.4%	3 100.0%	53 72.6%	59 65.6%
PERMNT. RESIDENT	0 0.0	8 57.1	0 0.0	10 13.7	18 20.0
OTHER VISA	0 0.0	3 21.4	0 0.0	10 13.7	13 14.4
COLUMN TOTAL	0 0.0%	14 100.0%	3 100.0%	73 100.0%	90 100.0%



AMERICAN CHEMICAL SOCIETY

Starting Salary and Employment Status of 1975 Chemistry and Chemical Engineering Graduates

A. Sex: (1) Male (2) Female B. Year of birth _____

C. Highest degree received in 1975: (1) Bachelor's (2) Master's (3) Ph.D.

D. Field of degree: (1) Chemistry or Biochemistry (2) Chemical Engineering (3) Other _____ (specify)

E. If you received an advanced degree in chemistry, indicate field:
 (01) Analytical (06) Physical/theoretical
 (02) Biochemistry (07) Polymer/macromolecular
 (03) Inorganic (08) Agricultural/food
 (04) Medicinal/pharmaceutical (09) Other _____ (specify)
 (05) Organic

F. Citizenship: (1) U.S. Citizen (2) U.S. permanent resident visa (3) Other visa: _____ (specify)

G. Are you a member of any of the minority groups recognized by the Equal Employment Opportunity Commission listed below? Yes (5) No

If "Yes," please check those which apply to you:
 (1) Black/Negro (2) American Indian
 (3) Oriental (those of Chinese, Japanese, Korean, or Filipino ancestry) (4) Spanish-Surnamed (those of Mexican, Puerto Rican, Cuban, or Spanish ancestry)

H. Post Graduation Status:

(1) Accepted (or continued) full-time employment in a field of chemistry or chemical engineering. Annual starting salary: a. \$ _____

(2) Accepted (or continued) full-time employment in a field other than chemistry or chemical engineering. Annual starting salary: b. \$ _____

(3) Accepted graduate assistantship or postdoctoral or other fellowship after graduation. Annual stipend or salary: c. \$ _____

(4) Entered military service, Peace Corps, VISTA, PHS, or other similar service.

(5) Was unable to obtain full-time employment.

(6) Was not seeking full-time employment.

For ACS use only
 (7) H-6, M=1

IF YOU HAVE ACCEPTED FULL-TIME EMPLOYMENT OR A POSTDOCTORAL POSITION, PLEASE ANSWER THE FOLLOWING QUESTIONS:

I. Employer classification (check the one category which best describes your employer):

Private industry or business:	(05) Federal government
(01) manufacturing	(06) State or local government
(02) non-manufacturing	(07) Hospital, independent laboratory
(03) College or university	(08) Other non-profit organization
(04) High school or other school	(09) Other (specify) _____

J. Geographic location of employment: State _____

K. How many firm offers of employment did you receive in a field of chemistry or chemical engineering?: Specify number _____

L. Did you have professional work experience prior to graduation? (1) Yes (2) No
 If "Yes," was it: (1) one year or less (2) more than a year

M. DO YOU PLAN FURTHER ADVANCED STUDIES IN FALL 1975?: (1) Yes (2) No

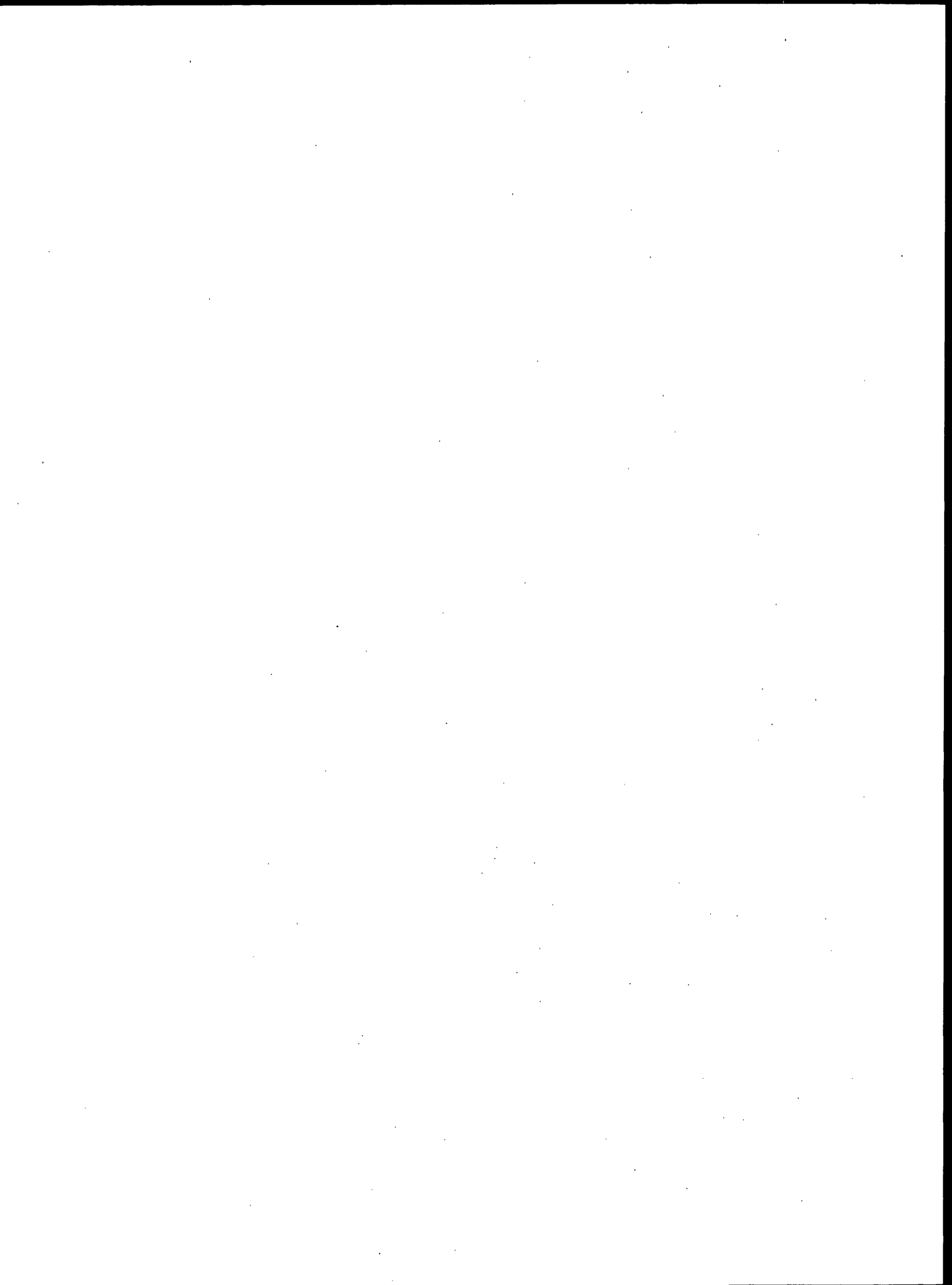
If you plan further studies starting in fall 1975, specify field:

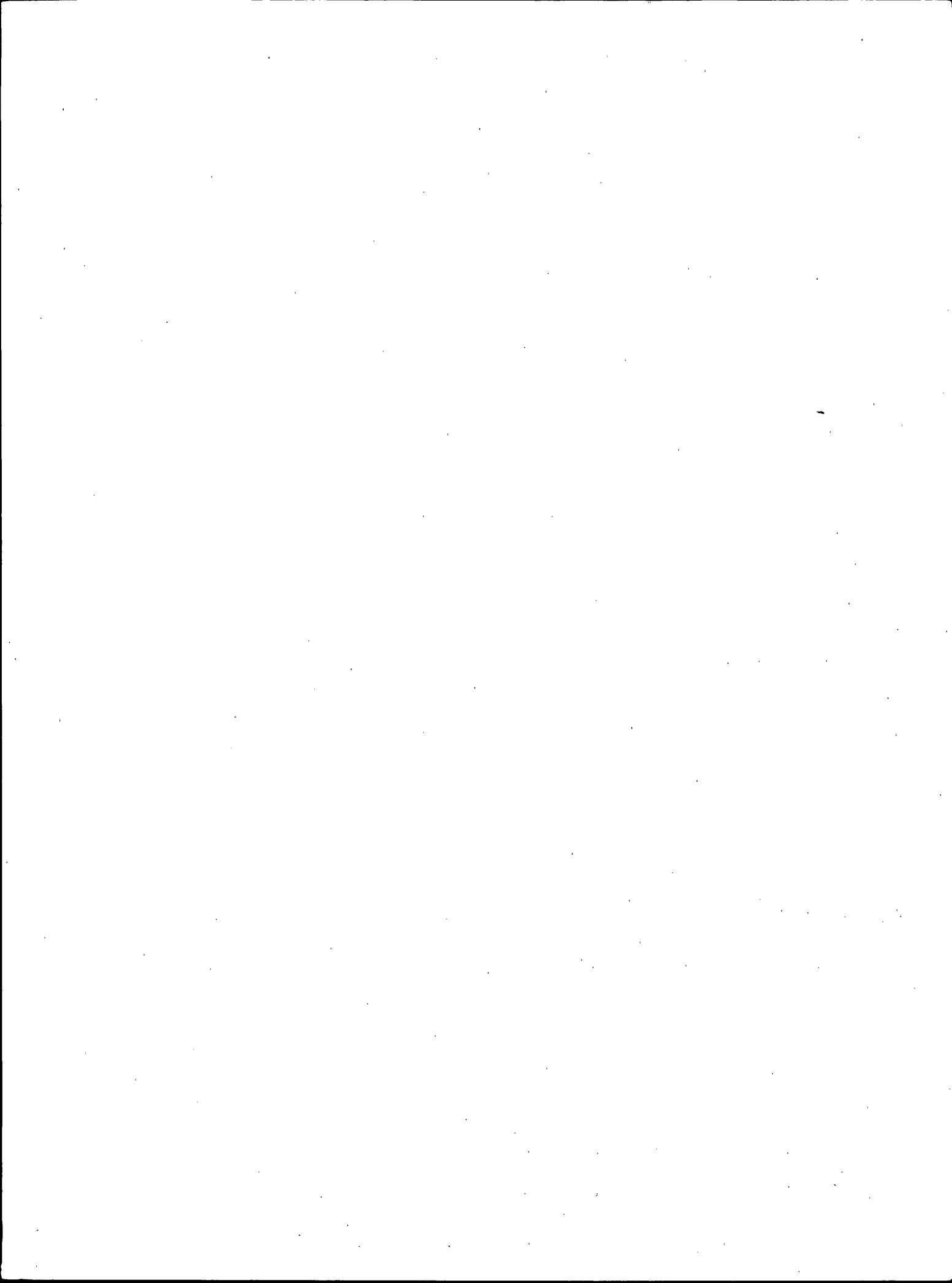
(01) Chemistry	(07) Medicine
(02) Other physical science	(08) Dentistry
(03) Chemical engineering	(09) Pharmaceutics
(04) Other engineering	(10) Business administration
(05) Biochemistry	(11) Law
(06) Other life science	(12) Social science
	(13) Other (specify) _____

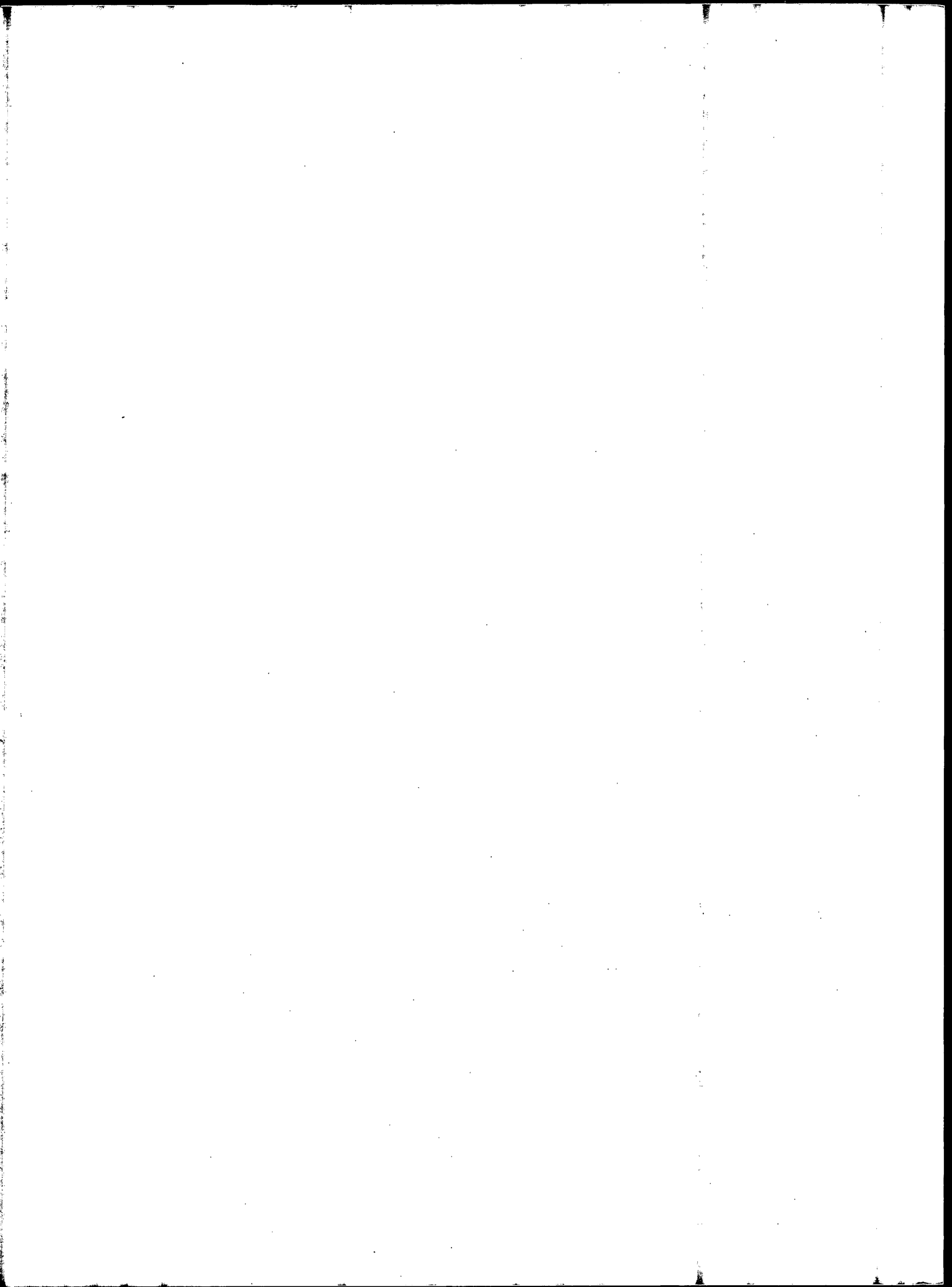
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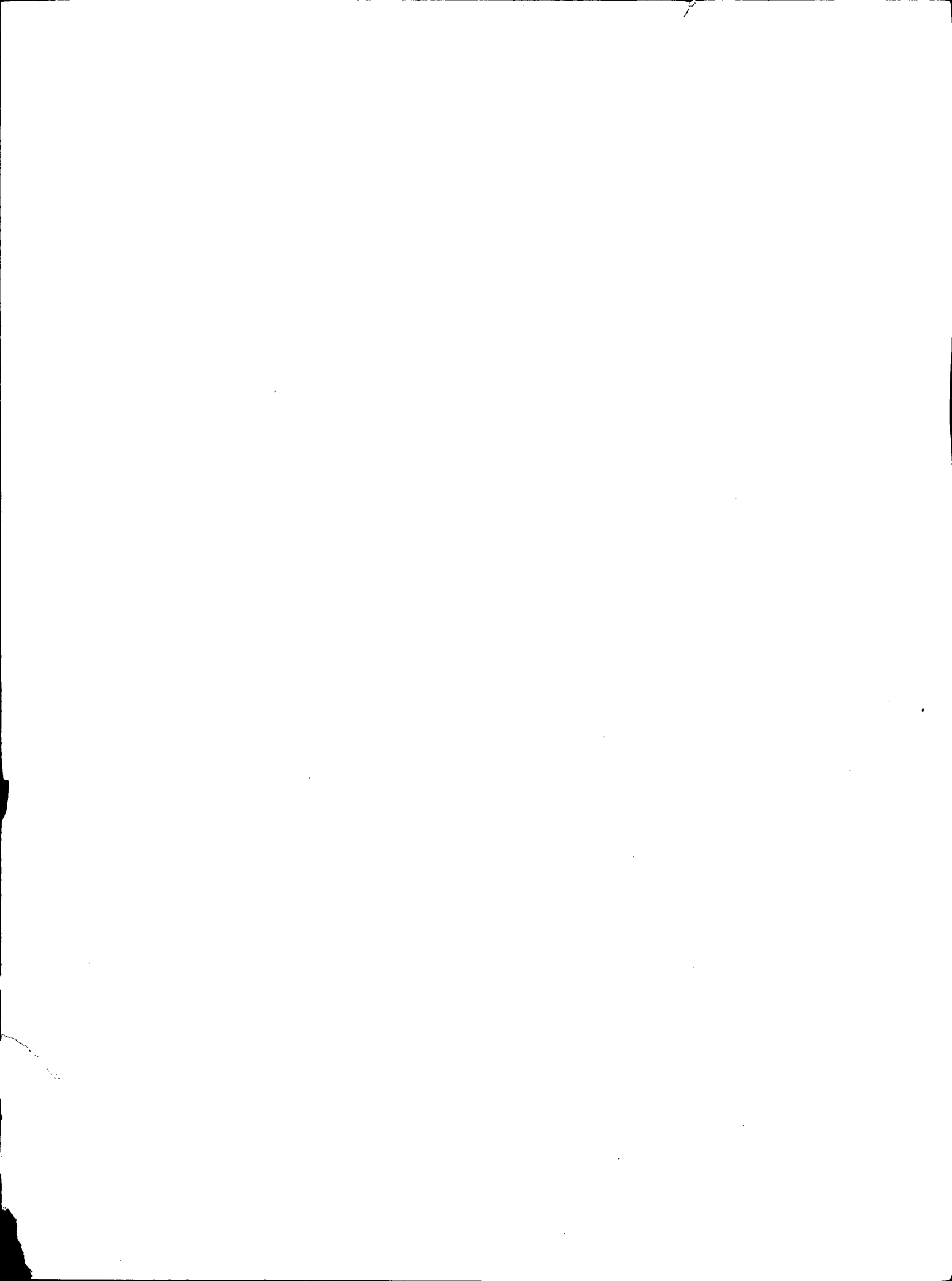
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 G. 9
 H. 10
 a. 11 12 13 14 15
 b. 16 17 18 19 20
 c. 21 22 23 24 25
 I. 26 27
 J. 28 29
 K. 30 31
 L. 32 33
 M. 34 35 36

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