Salaries

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Analysis of the
American Chemical Society's
1988 Survey of Salaries and Employment

American Chemical Society
Washington, D.C.

SALARIES 1988

ANALYSIS OF THE AMERICAN CHEMICAL SOCIETY'S 1988 SURVEY OF SALARIES AND EMPLOYMENT

American Chemical Society
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Washington, D.C. 20036

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ACKNOWLEDGEMENTS

Each year, the American Chemical Society conducts salary surveys of its members. This report presents detailed results of the 1988 ACS Salary and Employment Status Survey. A summary of the survey findings was published in the July 4, 1988 issue of *Chemical and Engineering News*.

General oversight of the survey and its analysis was provided by the ACS joint Board-Council Committee on Economic Status, headed by John Connolly[1], and by its subcommittee on surveys, chaired by Jack G. Kay[2]. The committee expresses its gratitude to the approximately 12,000 ACS members who provided a valuable service to the profession by completing the survey questionnaire.

Joan Burrelli and Seryu Patel of ACS Marketing and Business Analysis conducted this year's survey and prepared this report. Dr. Burrelli wrote the summary and comment on the following pages.

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SUMMARY AND COMMENT

Salaries

Among chemical engineers, median salaries for all degree levels were relatively flat this year compared with salaries last year. The overall median salary for PhD industrial chemical engineers was $62,900 compared with $61,000 last year, master's degree chemical engineers reported median salaries of $50,900 compared with $51,000 last year, and bachelor's degree chemical engineers' median salary was $47,700 compared with $47,100 last year.

Among chemists, overall median salaries showed modest increases over those of last year. As of March 1, 1988 median salaries for ACS member chemists were:

$50,000 for PhD, up 5% from 1987, up 1% in constant dollars
$41,000 for MS, up 5% from 1987, up 1% in constant dollars
$35,400 for BS, up 6% from 1987, up 2% in constant dollars

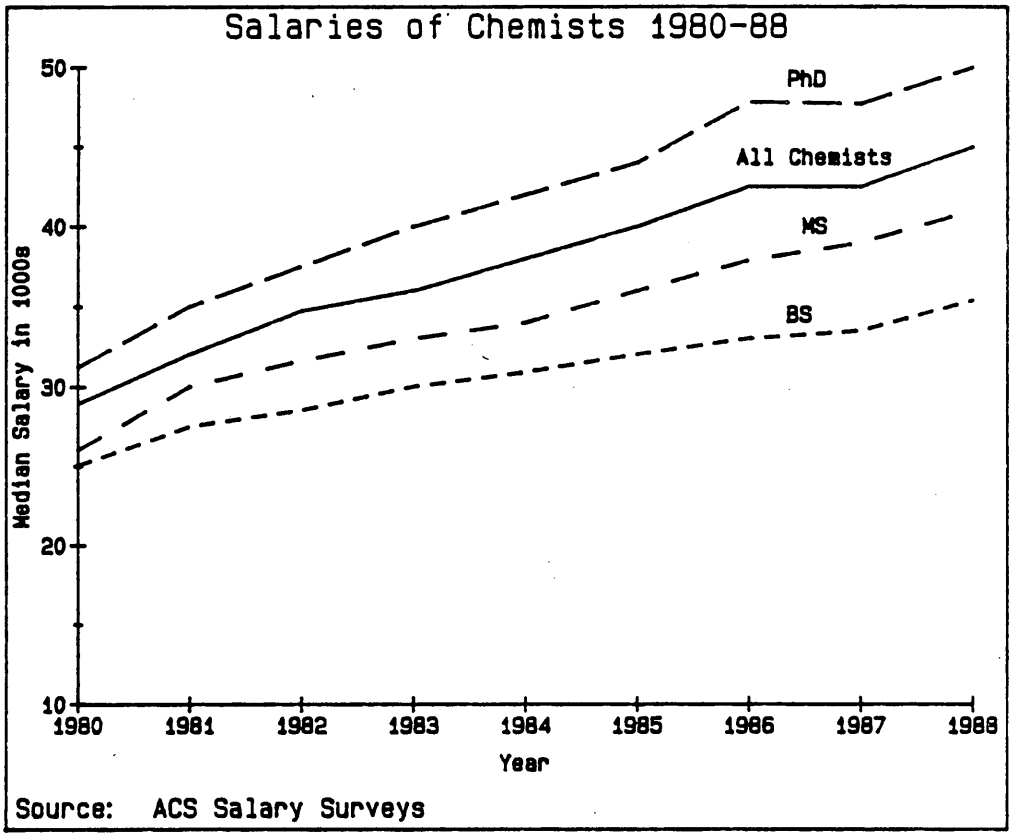
The Consumer Price Index rose 3.9% from March 1987 to March 1988.

With the exception of last year, when salaries barely increased over those of the previous year, overall salaries for chemists have increased between six and seven percent per year (in current dollars) since 1980. Median salaries for PhDs in industry rose 5% this year as did those for PhDs in academia. Median salaries for PhDs in government rose only 1% this year. In 1988, median salaries in government were $51,000 for PhD chemists, $41,000 for master's degree chemists, and $33,500 for bachelor's degree chemists. The median salary of a PhD full professor employed in a college or university was $45,000 for one on a 9 or 10 month contract and $60,600 for one on an 11 or 12 month contract. PhD associate professors' median salaries were $34,000 and $47,200 respectively, and PhD assistant professors' median salaries were $28,700 and $35,000 respectively for those on 9 or 10 month and 11 or 12 month contracts.

Nonacademic salaries vary according to type of industry, work function, work specialty, length of experience, and degree of responsibility. Salaries for chemists employed in industry are generally higher for those working in the petroleum or electronics industries, those in management, chemists specializing in materials science, chemists with greater experience, and chemists with greater responsibility.

Salaries also differ by geographic region. The median salary of PhDs in industry ranged from a high of $58,000 in the East South Central region to a low of $51,000 in the West North Central region. Regional differences in salaries are largely a function of differences in type of industry.

As in the past, salaries for women chemists were lower than those for men. The median salary for women PhDs in industry was 81% of that for men. The difference in men's and women's median salaries is partly due to differences in experience. When length of experience is taken into account, the salary gap narrows. For example, the median salary for women PhDs in industry with 15-19 years since the BS is 96% that for men with comparable experience. The difference in men's and women's median salaries can also be explained by differences in work function and responsibility. For example, men are more likely than women to be in management.

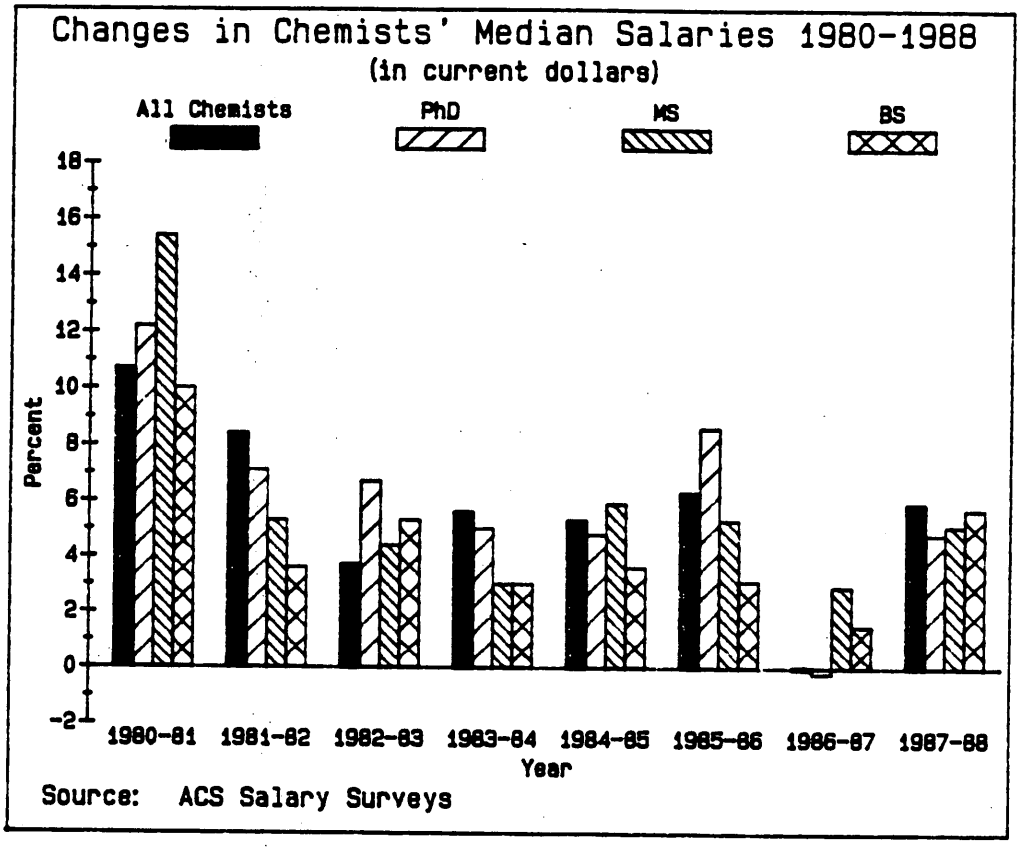


Chemists' Median Salaries*

Degree	1980	1981	1982	1983	1984	1985	1986	1987	1988
B.S.	$25.0	$27.5	$28.5	$30.0	$30.9	$32.0	$33.0	$33.5	$35.4
M.S.	26.0	30.0	31.6	33.0	34.0	36.0	37.9	39.0	41.0
Ph.D.	31.2	35.0	37.5	40.0	42.0	44.0	47.8	47.7	50.0
All Chemists	28.9	32.0	34.7	36.0	38.0	40.0	42.5	42.5	45.0

* Base annual salary on March 1 of the year (in thousands of dollars)

Source: ACS Salary Surveys



Changes in Chemists' Median Salaries* 1980-1988

Years	All Chemists % Change	Ph.D. % Change	MS % Change	BS % Change
1980-1981	10.7	12.2	15.4	10.0
1981-1982	8.4	7.1	5.3	3.6
1982-1983	3.7	6.7	4.4	5.3
1983-1984	5.6	5.0	3.0	3.0
1984-1985	5.3	4.8	5.9	3.6
1985-1986	6.3	8.6	5.3	3.1
1986-1987	-	<-0.2>	2.9	1.5
1987-1988	5.9	4.8	5.1	5.7

* In current dollars

Source: Calculations based on ACS Salary Survey data

Salaries in academia vary widely according to academic rank, school type, and work function (e.g., teaching, administration). Academic salaries are generally higher for full professors, those in public institutions, those in departments granting PhD degrees, and those in research as opposed to teaching. Salaries of tenured faculty are somewhat higher than those of nontenured faculty.

Within ranks, median salaries do not vary widely according to length of experience. The median salary for a PhD associate professor with 10-14 years since the BS and on a 9 or 10 month contract is $34,000; that for one with 25-29 years since the BS is $37,200.

Salaries for women academic chemists are generally lower than those for men. The difference in men's and women's median salaries is partly due to differences in rank. Women chemists in academia are less likely than men chemists to be full professors. The median salaries of men and women chemists with comparable rank are more nearly equal. For example, the median salary of women PhD full professors on 9 or 10 month contracts is 93% that of men's.

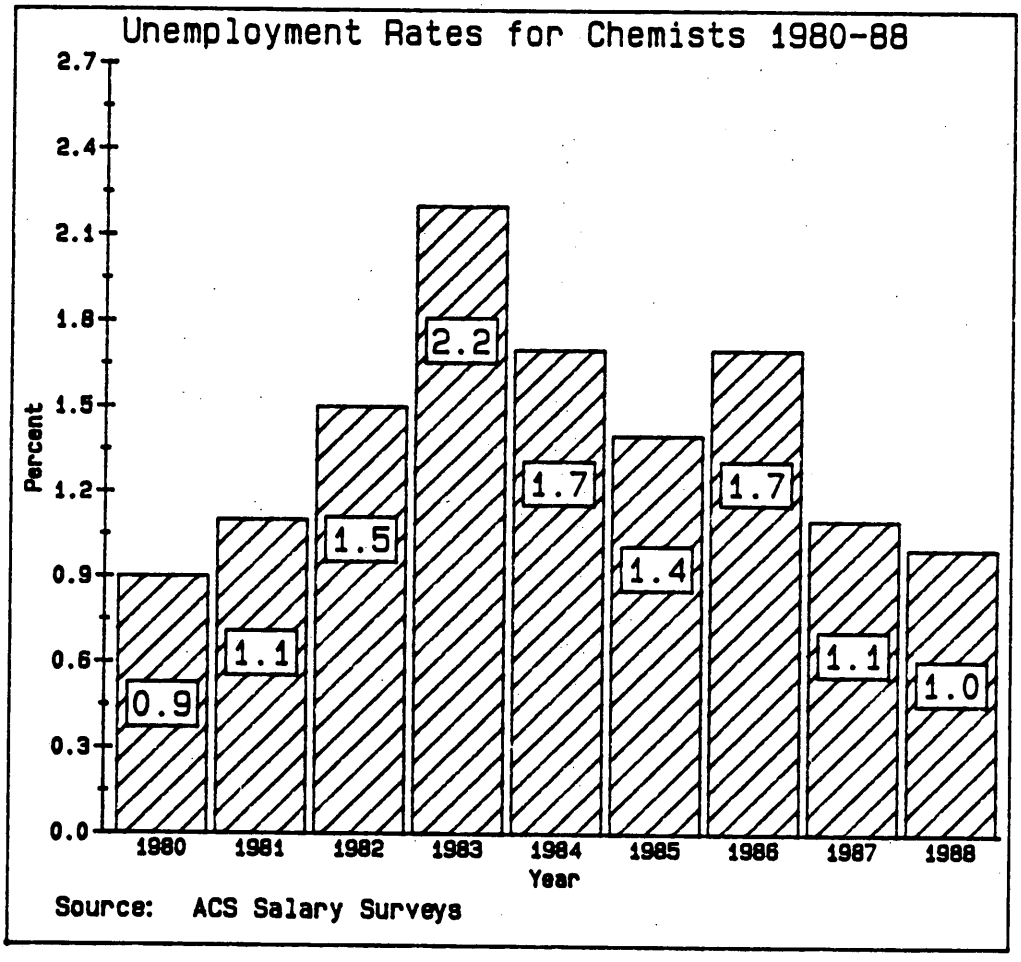
Employment and Unemployment

The overall unemployment rate among chemists in spring 1988 was only 1.0%, after having been 1.1% in 1987. The unemployment rate this year was the lowest since 1980. The overall unemployment rate among chemical engineers, though higher than that for chemists, decreased this year to 1.3% after having been 1.6% in 1987.

For the second straight year, the percent of chemists experiencing extended periods of unemployment was relatively low. In 1988 and 1987, 22% of those unemployed on March 1 had been unemployed for more than one year. In 1986 more than 30% reported they had been unemployed for more than one year.

This year, we again asked whether respondents were without work any time in the previous year, rather than just as of March 1. Of chemists in the labor force at the time of the survey, 3% had been unemployed at some time during 1987. Almost 60% of these reported they were unemployed for three months or less in 1987.

Unemployment rates were higher for women and for "other nonacademic" chemists. The unemployment rate for women was 1.4%; that for men 1.0%. Not only were women more likely than men to be unemployed, women chemists were three times as likely as men to work part-time (3.5% compared with 1.1%). Chemists in "other nonacademic" employment had a higher rate of unemployment (2.2%) than chemists in any other type of employment. The unemployment rate for academic chemists was 0.5%, for government chemists 1.1%, and for industrial chemists 1.0%. The overall decrease in unemployment is largely a result of a decrease in unemployment among industrial chemists (down from 1.4% in 1987). The unemployment rate differed little by age, highest degree, or race.


Unemployment Rates for Chemists 1980-88
Percent
2.7
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
0.9
1.1
1.5
2.2
1.7
1.4
1.7
1.1
1.0
1980
1981
1982
1983
1984
1985
1986
1987
1988
Year
Source: ACS Salary Surveys

A METHOD FOR ESTIMATING AVERAGE SALARIES

A compact summary of the information in this report is possible through a statistical technique known as multiple regression. This technique identifies which characteristics have the greatest effect on salaries, and results in a formula for estimating the average salary of respondents with certain characteristics.

For industrial chemists and chemical engineers responding to the 1988 survey, the three characteristics which account for most of the variation among salaries are highest degree, experience (years since B.S. is used to measure experience in ACS surveys), and work function.

Table I displays the factors needed to estimate the average salary for any group of respondents who are industrial chemists with any combination of the listed characteristics.

For example, to estimate the average salary in March 1988 for industrial chemists with the doctorate, 15 to 19 years of experience, and working in R&D management, find the corresponding factors in Table I and multiply them together with the base salary for all industrial chemists:

($24,113) x (1.279) x (1.651) x (1.227) = $62,476

Table II displays the factors needed to estimate the average salary for chemical engineers. For example, to estimate the average salary in March 1988 for industrial chemical engineers with a master's degree, 15 to 19 years of experience, and working in R&D management, find the corresponding factors in Table II and multiply them together with the base salary for all industrial chemical engineers:

($30,200) x (1.057) x (1.597) x (1.198) = $61,072

For academic chemists responding to the 1988 survey, the characteristics which account for most of the variation among salaries are rank, academic work function, length of contract (9 or 10 month or 11 or 12 month), the highest degree offered by the respondent's department, and the control (public or private) of the respondent's institution.

Table III displays the factors needed to estimate the average salary for any group of respondents who are PhD academic chemists employed full-time in colleges or universities with any combination of the listed characteristics.

For example, to estimate the average salary in March 1988 for academic chemists at the rank of full professor, engaged primarily in research, on an 11 or 12 month contract, and employed in a PhD-granting department in a public university, find the corresponding factors in Table III and multiply them together with the base salary for all academic chemists:

($26,342) x (1.690) x (1.072) x (1.293) x (1.134) x (1.000) = $69,975

Averages estimated using this method should be interpreted with caution, for two reasons. First, and more important, is that the relationship between salary and employment characteristics is not exact. Variations due to employer (such as size of company and geographic location), or to individual differences (such as ability and number of people supervised), and other characteristics prohibit perfect estimation of an individual's salary. Secondly, the factors shown in the tables are estimates derived from a sample of chemists rather than the entire population of chemists, and as such are subject to the imprecision associated with sampling procedures.

Table I

SALARY FACTORS FOR INDUSTRIAL CHEMISTS

BASE SALARY	$24,113
DEGREE:	
Bachelor's	1.000
Master's	1.044
Doctorate	1.279
MATURITY:	
(Years Since Receiving B.S.)	
0-1	1.000
2-4	1.095
5-9	1.297
10-14	1.509
15-19	1.651
20-24	1.796
25-29	1.957
30-34	2.048
35-39	2.075
40 or more	2.049
WORK FUNCTION:	
Basic Research	1.000
R&D Management	1.227
Applied Research	1.006
General Management	1.224
Marketing	1.077
Production	0.934
Forensic/Lab Analysis	0.876
Writing	0.823
Chemistry Information Services	0.960
Data Processing	0.967
Consulting	1.030
Other	1.011

Table II

SALARY FACTORS FOR INDUSTRIAL CHEMICAL ENGINEERS

BASE SALARY	$30,200
DEGREE:	
Bachelor's	1.000
Master's	1.057
Doctorate	1.233
MATURITY:	
(Years Since Receiving B.S.)	
0-1	1.000
2-4	1.032
5-9	1.237
10-14	1.425
15-19	1.597
20-24	1.741
25-29	1.824
30-34	1.961
35-39	1.911
40 or more	1.847
WORK FUNCTION:	
Basic Research	1.000
R&D Management	1.198
Applied Research	0.971
General Management	1.253
Marketing	1.047
Production	0.897
Forensic/Lab Analysis	0.701
Writing	0.851
Chemistry Information Services	0.772
Data Processing	0.989
Consulting	1.015
Other	1.000

Table III

SALARY FACTORS FOR ACADEMIC CHEMISTS

BASE SALARY	$26,342
RANK:	
Professor	1.690
Associate Professor	1.231
Assistant Professor	1.000
Instructor/Lecturer	0.996
Non-faculty Research Associate	0.953
Unranked Faculty Member	1.608
WORK FUNCTION:	
Teaching	1.000
Research	1.072
Administration	1.022
LENGTH OF CONTRACT	
9 or 10 Month	1.000
11 or 12 Month	1.293
HIGHEST DEGREE OFFERED IN DEPARTMENT:	
Bachelor's or Master's	1.000
Doctorate	1.134
INSTITUTIONAL CONTROL:	
Public	1.000
Private	0.990

LIST OF TABLES

SALARIES ON MARCH 1, 1988

DEMOGRAPHIC CHARACTERISTICS

TECHNICAL NOTES

The target population of the 1988 Salary and Employment Status Survey was those ACS members who had U.S. mailing addresses, were not older than 70, and had neither student, retired, nor emeritus status. On January 31, 1988 the ACS membership totalled 130,058, of which approximately 81,000 were eligible for inclusion in the survey. A systematic sample of 20,000 members with non-chemical engineering degrees (mostly chemists) and all 6,820 members with chemical engineering degrees were selected from the target population.

The survey questionnaires were mailed to this sample of 26,820 members by bulk mail during the week of February 27. By the May 17 cut-off date, 11,830 (44.1%) usable questionnaires had been returned.

Members indicating a degree field of chemical engineering on the ACS membership record were oversampled this year in order to produce more detailed tables on chemical engineers' salaries. To make the data base from which the non-chemical engineers' tables were produced comparable to those of previous years, a random sample of 27% of those oversampled was drawn and included with the 27% sample of non-chemical engineers (the 20,000 out of approximately 74,000 non-chemical engineers eligible for inclusion in the survey).

Definitions

For the purposes of the survey analysis only, the following definitions were used:

Chemist:	A respondent who indicated a work specialty of chemistry or biochemistry (categories 2 through 15 of Question I.B. on the questionnaire) or a non-chemistry work specialty (categories 16 and 17) and a degree field of chemistry or biochemistry.
Chemical Engineer:	A respondent who indicated a work specialty of chemical engineering or a degree field of chemical engineering (category 1 of question I.B. on the questionnaire).
Unemployed:	A respondent who is unemployed and seeking employment (category 4 of Question I.C. on the questionnaire).

This report represents the respondents' principal annual salaries as of March 1, 1988. The respondent's age is given as of March 1, 1988. A respondent's geographic region refers to place of residence rather than place of employment. A list of geographic regions and their member states is on page 18 of this report.

Proportions

The proportion of people falling within a certain cell in one of the tables is a sample proportion. The sample proportion is used to make statements about the corresponding population proportion, but, of course, the sample proportion generally is not exactly equal to the population proportion. A useful estimate of the representativeness of the sample proportion is the confidence interval. Such an interval estimate is illustrated in the following statement: "We assert with 95% confidence that the population proportion is between 0.04 and 0.06." A simple but adequate formula for a confidence interval centered on the sample proportion is

$$p\text{ (lower)} = \hat{p} - z\,[\hat{p}\,(1 - \hat{p}) / n]^{\frac{1}{2}}$$
$$\text{and } p\text{ (upper)} = \hat{p} + z\,[\hat{p}\,(1 - \hat{p}) / n]^{\frac{1}{2}}$$

where p (lower) = lower boundary of the interval
p (upper) = upper boundary of the interval
$\hat{p}$ = the sample proportion
z = a function of the level of confidence and is found in a table of the standard normal distribution.
n = the sample size

Inspection of the formula shows that the width of the confidence interval is inversely proportional to the square root of the sample size, so that proportions derived from small samples are not as precise as ones drawn from large samples. Also, if non-respondents differ from respondents with regard to the characteristics under consideration, the formula will overstate precision because the formula is based on assumption of 100% response.

Suppose a confidence interval is required for a group containing 1900 sample members. If the sample contains 95 persons with a specific characteristic, then the numbers that go into the formula are p=95/1900= 0.05 and n=1900. For a 95% confidence interval, z is about 2. Putting these numbers into the formula above we have:

$$p\text{ (lower)} = \hat{p} - z\,[\hat{p}\,(1 - \hat{p}) / n]^{\frac{1}{2}}$$
$$= 0.05 - 2\,[0.05\,(0.95)\,/1900]^{\frac{1}{2}}$$
$$= 0.05 - 0.01$$
$$= 0.04$$

$$\text{and similarly, } p\text{ (upper)} = 0.05 + 0.01$$
$$= 0.06$$

Thus, a 95% confidence interval for p is from 4.0% to 6.0%. Although we cannot say that the population proportion is exactly 5.0%, we can be confident that it is between 4.0% and 6.0%. The 95% level of confidence means roughly that if this procedure were followed a large number of times using different samples of the same size, the population proportion would be within the calculated interval about 95% of the time.

Small Cell Count

If the number of responses in a cell of a salary table is small, then the sample salary statistics for that cell may not accurately estimate the corresponding population salary statistics. In general, a cell containing fewer than 15 responses does not provide a useful estimate of the median salary, and a cell containing fewer than 25 responses does not provide a useful estimate of the 25th or the 75th salary percentile. For this reason, cells containing fewer than 15 responses were suppressed in the tables in this book.

Median

If a sample of size n is arranged in ascending order of magnitude, the median Md is given by the ((n+1)/2)th value. If (n+1)/2 is not an integer, then the median is a weighted average of the two values whose ranks are closest to (n+1)/2.

Discrepancies Among Tables

Some pairs of tables contain totals that should be identical but are not. For example, two tables that present information about PhD respondents should show the same total number of PhDs. They might, however, show different totals. To illustrate, if one table groups the PhDs according to specialty and the other groups them according to geographic region, the totals will differ unless the number who did not indicate their specialty is the same as the number who did not indicate their geographic region.

Comparing Salaries

Often questions arise concerning B.S. chemists' salaries as compared with M.S. chemists', or women's salaries as compared with men's. These and similar comparisons require caution.

Statistical tests should be performed to determine whether observed differences in salaries of various sample groups could be mere chance occurrences resulting from peculiarities of the sample. Whether a difference in salaries is "statistically significant" depends not only on the magnitude of the difference but also on the sample size and the magnitude of the sample standard deviations.

Discussion of statistical tests of significance can be found in *Introductory Statistics for Business and Economics* by Thomas H. Wonnacott and Ronald J. Wonnacott, N.Y.: Wiley, 1984; and other similar texts.

GEOGRAPHIC REGIONS

PACIFIC

Alaska
California
Hawaii
Oregon
Washington

MOUNTAIN

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

WEST NORTH CENTRAL

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

WEST SOUTH CENTRAL

Arkansas
Louisiana
Oklahoma
Texas

EAST NORTH CENTRAL

Illinois
Indiana
Michigan
Ohio
Wisconsin

EAST SOUTH CENTRAL

Alabama
Kentucky
Mississippi
Tennessee

MIDDLE ATLANTIC

New Jersey
New York
Pennsylvania

SOUTH ATLANTIC

Delaware
District of Columbia
Florida
Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia

NEW ENGLAND

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Table 1.1.1

SALARIES of BS CHEMISTS employed FULL-TIME
by EMPLOYER TYPE and YEARS SINCE BS
1988 ACS Salary Survey

TYPE OF EMPLOYER & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Industry						
Total	1490	39,945	16,850	28,507	36,000	47,000
0-1	46	24,122	3,746	21,500	24,250	26,700
2-4	213	26,567	5,146	23,000	26,580	30,000
5-9	350	32,048	8,244	27,000	31,000	35,760
10-14	259	38,591	9,851	32,000	38,000	45,000
15-19	148	44,282	12,277	36,000	42,250	50,650
20-24	118	46,952	12,406	41,000	46,690	55,000
25-29	103	52,348	23,093	39,625	48,500	63,000
30-34	99	55,021	24,629	42,000	50,400	60,000
35-39	114	56,097	17,868	44,343	53,375	64,000
40 or more	40	55,254	22,491	40,500	50,250	64,501
Government						
Total	174	35,580	10,918	27,000	33,532	42,500
5-9	30	28,188	4,728	25,000	27,358	31,400
10-14	22	33,206	8,517	25,500	33,468	37,800
15-19	27	35,002	10,355	28,000	34,000	42,000
20-24	20	37,476	9,950	29,892	39,500	43,298
25-29	24	39,044	7,505	32,000	39,250	43,451
35-39	19	45,381	11,866	39,000	48,000	54,672
Other Nonacademic						
Total	100	37,224	17,145	24,200	33,000	47,750
2-4	21	22,474	4,130	20,000	22,100	25,000
5-9	21	27,521	5,967	23,000	25,200	32,000
10-14	17	38,289	13,436	29,100	34,500	45,000
College or University						
Total	33	26,209	9,432	19,874	23,700	32,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 1.1.2

SALARIES of MS CHEMISTS employed FULL-TIME
by EMPLOYER TYPE and YEARS SINCE BS
1988 ACS Salary Survey

TYPE OF EMPLOYER & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Industry						
Total	903	46,063	19,519	34,400	42,300	53,000
2-4	21	29,975	7,193	27,500	30,000	33,000
5-9	152	32,878	6,554	27,525	32,500	37,200
10-14	202	39,940	9,145	34,000	40,000	44,950
15-19	159	44,179	11,585	36,000	42,000	50,800
20-24	115	49,158	14,632	40,500	47,760	55,000
25-29	86	54,280	15,415	45,000	52,250	64,700
30-34	68	60,212	21,392	45,000	59,500	73,000
35-39	73	64,461	38,483	49,000	57,000	67,600
40 or more	27	64,973	28,643	49,000	56,000	70,000
Government						
Total	129	40,993	12,062	33,000	41,000	47,000
10-14	16	33,950	10,193	27,047	33,109	38,909
15-19	25	37,604	10,028	31,412	37,300	44,000
20-24	26	42,884	8,230	35,400	42,750	47,000
25-29	15	48,277	7,938	43,181	47,403	52,580
30-34	18	42,922	13,414	34,325	41,866	47,184
Other Nonacademic						
Total	68	52,713	31,947	35,500	46,825	60,000
High School						
Total	66	33,924	10,295	26,000	33,644	40,000
20-24	19	32,239	7,940	27,000	32,000	37,000
College or University						
Total	110	32,825	10,722	24,316	31,250	41,000
15-19	17	30,281	7,636	25,332	28,809	32,100
20-24	17	31,711	8,915	25,000	30,000	38,200
25-29	19	37,301	8,761	32,500	36,000	44,500
35-39	15	38,395	10,216	30,000	37,000	42,850

Note: Cells with fewer than 15 cases have been suppressed.

Table 1.1.3

SALARIES of PhD CHEMISTS employed FULL-TIME
by EMPLOYER TYPE and YEARS SINCE BS
1988 ACS Salary Survey

TYPE OF EMPLOYER & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Industry						
Total	2235	59,223	19,543	46,000	55,000	66,800
5-9	211	42,391	4,950	40,000	42,000	45,000
10-14	469	48,688	7,749	43,760	48,000	52,900
15-19	355	54,509	10,235	48,000	53,100	60,000
20-24	421	61,761	15,713	52,500	60,000	69,600
25-29	317	68,467	19,359	56,952	65,508	76,000
30-34	191	71,768	25,382	55,200	67,000	80,000
35-39	186	72,860	26,831	57,000	69,300	84,800
40 or more	84	74,152	29,435	53,650	68,410	85,000
Government						
Total	346	51,501	12,086	42,360	51,000	60,400
5-9	15	39,487	8,530	34,325	39,780	47,000
10-14	37	41,362	8,360	36,539	41,000	43,500
15-19	53	46,971	11,332	40,800	46,000	53,575
20-24	72	51,976	9,421	44,769	51,352	60,400
25-29	58	52,934	10,672	45,600	55,350	60,000
30-34	38	54,867	12,371	48,000	55,000	66,000
35-39	43	56,151	10,844	50,000	58,000	64,000
40 or more	30	63,176	11,953	59,000	65,944	70,150
Other Nonacademic						
Total	199	58,816	27,082	42,500	55,600	70,000
10-14	22	44,759	12,181	37,000	45,400	50,000
15-19	42	55,517	29,671	36,000	54,500	71,000
20-24	37	59,241	23,418	40,000	58,000	70,000
25-29	25	56,732	15,957	50,000	57,000	61,000
30-34	21	73,180	42,840	55,700	67,680	75,000
35-39	33	68,017	25,095	50,000	64,000	79,000
High School						
Total	18	33,059	9,261	26,500	33,350	38,000
College or University						
Total	1373	43,716	16,037	32,000	40,200	52,000
5-9	64	27,520	6,605	23,675	27,000	30,000
10-14	171	31,921	7,909	27,000	31,000	35,000
15-19	171	36,430	10,248	28,700	34,480	42,000
20-24	245	42,196	14,076	33,000	39,500	48,500
25-29	243	46,741	14,422	36,500	44,000	54,238
30-34	222	49,133	15,277	38,000	47,402	57,000
35-39	158	53,314	17,286	42,000	50,757	61,122
40 or more	99	56,014	19,160	41,500	55,000	70,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.1.1

SALARIES of INDUSTRIAL CHEMISTS employed FULL-TIME
by DEGREE and YEARS SINCE BS
1988 ACS Salary Survey

HIGHEST DEGREE & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
BS						
Total	1490	39,945	16,850	28,507	36,000	47,000
0-1	46	24,122	3,746	21,500	24,250	26,700
2-4	213	26,567	5,146	23,000	26,580	30,000
5-9	350	32,048	8,244	27,000	31,000	35,760
10-14	259	38,591	9,851	32,000	38,000	45,000
15-19	148	44,282	12,277	36,000	42,250	50,650
20-24	118	46,952	12,406	41,000	46,690	55,000
25-29	103	52,348	23,093	39,625	48,500	63,000
30-34	99	55,021	24,629	42,000	50,400	60,000
35-39	114	56,097	17,868	44,343	53,375	64,000
40 or more	40	55,254	22,491	40,500	50,250	64,501
MS						
Total	903	46,063	19,519	34,400	42,300	53,000
2-4	21	29,975	7,193	27,500	30,000	33,000
5-9	152	32,878	6,554	27,525	32,500	37,200
10-14	202	39,940	9,145	34,000	40,000	44,950
15-19	159	44,179	11,585	36,000	42,000	50,800
20-24	115	49,158	14,632	40,500	47,760	55,000
25-29	86	54,280	15,415	45,000	52,250	64,700
30-34	68	60,212	21,392	45,000	59,500	73,000
35-39	73	64,461	38,483	49,000	57,000	67,600
40 or more	27	64,973	28,643	49,000	56,000	70,000
PhD						
Total	2235	59,223	19,543	46,000	55,000	66,800
5-9	211	42,391	4,950	40,000	42,000	45,000
10-14	469	48,688	7,749	43,760	48,000	52,900
15-19	355	54,509	10,235	48,000	53,100	60,000
20-24	421	61,761	15,713	52,500	60,000	69,600
25-29	317	68,467	19,359	56,952	65,508	76,000
30-34	191	71,768	25,382	55,200	67,000	80,000
35-39	186	72,860	26,831	57,000	69,300	84,800
40 or more	84	74,152	29,435	53,650	68,410	85,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.1.2

SALARIES of MEN CHEMISTS employed FULL-TIME in INDUSTRY
by DEGREE and YEARS SINCE BS
1988 ACS Salary Survey

HIGHEST DEGREE & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
BS						
Total	1056	42,606	17,951	30,550	39,870	50,000
0-1	19	24,054	3,981	23,000	24,500	27,000
2-4	116	27,139	5,693	23,138	27,000	30,900
5-9	226	32,793	9,174	27,600	32,000	37,000
10-14	185	39,687	9,476	33,000	39,180	45,600
15-19	120	45,461	12,282	37,350	43,000	51,400
20-24	98	48,644	11,734	42,000	48,000	55,200
25-29	79	53,132	24,683	40,000	48,000	64,000
30-34	85	57,221	25,513	43,000	51,000	61,260
35-39	98	57,043	18,766	44,343	54,766	65,800
40 or more	30	58,659	23,188	45,000	52,500	67,000
MS						
Total	675	48,015	20,708	36,000	44,950	55,000
5-9	100	32,903	6,785	27,500	32,100	37,000
10-14	148	40,813	9,287	35,000	40,000	45,000
15-19	122	44,737	11,607	36,600	42,860	51,950
20-24	84	50,601	13,584	42,800	48,900	57,500
25-29	70	55,575	13,591	48,000	53,045	64,700
30-34	52	62,421	21,759	48,350	60,000	76,000
35-39	63	66,646	40,715	50,000	58,000	69,500
40 or more	25	67,123	28,420	51,000	58,000	70,000
PhD						
Total	1947	59,866	19,371	47,000	56,000	68,000
5-9	160	42,414	4,485	40,000	42,000	45,000
10-14	391	48,960	7,719	43,860	48,000	53,000
15-19	311	54,640	10,280	48,000	53,000	60,000
20-24	384	62,101	15,473	54,000	60,000	69,200
25-29	284	68,339	18,005	57,850	65,404	76,000
30-34	173	72,392	25,599	56,900	68,000	80,000
35-39	171	73,603	27,412	58,000	70,000	85,500
40 or more	73	72,220	26,488	53,300	68,000	82,860

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.1.3

SALARIES of WOMEN CHEMISTS employed FULL-TIME in INDUSTRY
by DEGREE and YEARS SINCE BS
1988 ACS Salary Survey

HIGHEST DEGREE & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
BS						
Total	351	31,610	9,220	25,500	30,000	35,332
0-1	25	24,264	3,737	21,500	24,000	26,100
2-4	86	26,200	4,194	23,920	26,000	29,496
5-9	112	30,138	5,740	26,550	29,752	34,072
10-14	59	34,704	7,572	30,000	35,000	37,606
15-19	17	36,463	9,632	29,100	35,000	43,500
20-24	18	36,651	11,198	25,000	40,750	44,400
25-29	17	47,528	15,296	39,625	49,680	51,733
MS						
Total	195	38,366	12,456	30,000	36,000	43,800
5-9	49	32,348	5,902	27,600	33,000	37,320
10-14	47	37,289	8,793	30,000	37,000	41,500
15-19	35	42,600	11,748	35,000	39,500	48,000
20-24	28	45,423	17,465	35,584	44,500	51,500
PhD						
Total	176	48,597	12,003	42,000	45,500	52,000
5-9	45	41,942	6,193	41,000	42,500	45,000
10-14	59	46,615	8,081	42,000	46,000	50,000
15-19	31	52,977	11,140	46,000	51,000	59,000
20-24	16	57,215	17,780	45,172	48,800	74,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.2.1

SALARIES of BS CHEMISTS employed FULL-TIME in INDUSTRY
by WORK SPECIALTY and YEARS SINCE BS
1988 ACS Salary Survey

WORK SPECIALTY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Biochem/Biotech						
Total	40	36,209	13,593	25,988	33,200	45,300
General chemistry						
Total	83	37,984	13,586	28,000	35,000	49,500
5-9	26	32,250	6,438	26,800	33,200	37,500
Agricultural chemistry						
Total	54	41,628	15,153	31,000	40,650	50,000
10-14	16	36,712	8,167	32,300	36,650	40,650
Analytical chemistry						
Total	428	35,745	10,314	28,000	34,000	42,000
2-4	67	27,273	5,183	23,920	27,000	31,700
5-9	116	31,529	6,212	27,000	30,600	35,000
10-14	85	36,352	7,753	31,000	35,550	42,336
15-19	50	39,043	8,530	33,000	38,560	46,300
20-24	36	43,586	9,216	34,600	45,790	50,000
25-29	28	45,968	13,136	36,500	44,616	51,717
30-34	17	46,876	13,287	38,650	45,450	53,000
Environmental chemistry						
Total	139	35,227	13,158	26,000	32,300	42,000
2-4	29	24,497	5,559	19,500	24,000	27,500
5-9	38	32,805	7,827	26,940	32,050	38,500
10-14	21	39,219	9,088	32,000	38,400	42,700
15-19	17	37,746	6,475	32,000	39,000	42,000
Inorganic chemistry						
Total	46	41,846	18,036	28,507	36,250	50,000
Materials science						
Total	87	43,763	21,343	29,300	41,000	50,800
5-9	17	32,077	7,406	28,300	30,000	37,000
10-14	20	38,616	7,466	36,000	39,200	43,400
Medicinal/Pharmaceutical						
Total	73	38,961	20,791	27,600	32,500	42,224
5-9	21	30,104	5,608	26,000	30,000	32,640
Organic chemistry						
Total	134	40,291	14,656	29,000	36,500	50,500
2-4	20	26,628	5,367	23,500	27,350	30,000
5-9	33	29,888	4,056	28,000	30,000	32,200
10-14	20	41,911	14,510	32,000	40,400	45,972
Physical chemistry						
Total	15	44,144	16,798	30,000	38,000	56,760

Table 2.2.1 Continued

WORK SPECIALTY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Polymer chemistry						
Total	226	44,455	18,872	30,000	42,030	52,000
2-4	37	28,710	4,601	26,000	28,000	30,000
5-9	34	35,844	16,561	27,600	32,526	40,800
10-14	32	42,382	10,447	37,000	42,250	48,350
15-19	20	50,956	16,733	42,301	52,500	55,850
20-24	21	49,320	8,952	43,000	50,000	55,200
25-29	18	51,678	13,174	42,060	50,340	56,760
30-34	20	51,742	18,201	40,600	49,000	60,120
35-39	23	57,687	25,430	44,300	48,000	64,000
Other chemical science						
Total	57	39,504	17,727	27,500	35,000	43,000
Business/Nonchem						
Total	108	51,278	25,909	34,750	46,500	63,024
5-9	20	33,751	11,220	26,500	31,250	40,200
25-29	15	67,193	44,700	42,000	64,000	71,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.2.2

SALARIES of BS CHEMISTS employed FULL-TIME in INDUSTRY
by WORK FUNCTION and YEARS SINCE BS
1988 ACS Salary Survey

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
R&D Mgt						
Total	119	54,240	20,100	42,800	51,870	65,000
10-14	20	47,000	13,898	38,000	45,563	52,790
35-39	19	62,812	11,674	52,000	63,300	75,000
Basic research						
Total	103	32,616	9,863	26,700	30,000	36,000
2-4	26	26,849	4,042	25,000	27,550	28,300
5-9	35	29,224	5,344	26,500	29,500	32,200
Applied research						
Total	448	37,896	12,814	28,397	35,350	44,150
0-1	22	24,985	3,224	23,000	24,950	27,000
2-4	71	27,371	4,192	25,400	27,100	30,000
5-9	107	31,293	5,497	27,000	30,500	35,086
10-14	83	38,266	7,941	32,550	39,100	43,000
15-19	39	44,967	8,795	38,000	44,000	51,012
20-24	30	45,084	11,212	41,000	43,800	51,400
25-29	24	46,149	15,677	36,500	42,280	52,750
30-34	26	54,070	17,440	43,000	51,000	60,000
35-39	32	49,380	9,224	43,500	46,926	55,560
General Mgt						
Total	152	51,545	25,475	36,175	45,350	57,200
5-9	26	36,994	9,551	30,500	37,400	40,000
10-14	35	41,864	10,119	35,000	40,000	47,000
15-19	17	51,579	17,618	40,300	50,000	55,000
20-24	15	54,743	13,956	45,000	55,000	60,000
35-39	22	70,220	25,108	50,160	65,400	87,100
Marketing						
Total	149	45,277	18,326	32,000	42,000	53,000
5-9	34	32,290	7,102	28,000	31,900	37,000
10-14	22	45,639	10,291	36,804	45,800	51,000
15-19	15	46,567	11,466	36,000	48,000	55,000
25-29	22	57,520	19,019	42,000	57,510	71,000
Production						
Total	284	34,989	11,953	26,550	33,000	41,350
2-4	41	24,843	4,365	21,000	26,000	27,000
5-9	82	32,208	11,532	26,500	30,750	35,000
10-14	53	33,961	8,276	27,300	34,000	39,000
15-19	28	41,374	9,580	33,000	40,900	48,000
20-24	23	42,995	11,132	33,000	45,300	53,000
25-29	20	44,344	10,710	37,500	45,000	51,350
30-34	15	44,208	10,300	37,500	44,668	48,000
Forensics						
Total	93	29,364	9,122	23,920	27,417	33,000
2-4	25	23,368	4,983	19,500	23,000	26,000
5-9	23	28,630	7,414	24,000	28,600	32,700
Chem info services						
Total	21	36,696	10,966	30,400	36,000	42,800
Computers						
Total	15	39,913	8,600	32,400	40,100	48,800

Table 2.2.2 Continued

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Consulting						
Total	25	37,549	14,096	29,500	36,565	43,000
Other						
Total	73	38,659	12,856	28,000	37,000	47,000
5-9	17	32,569	5,889	28,500	31,000	37,620

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.2.3

SALARIES of BS CHEMISTS employed FULL-TIME
by INDUSTRY and YEARS SINCE BS
1988 ACS Salary Survey

TYPE OF INDUSTRY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Non-manufacturing						
Total	228	36,019	18,594	26,000	32,000	41,220
2-4	50	25,218	5,804	20,000	25,488	30,000
5-9	57	30,285	6,556	26,000	30,000	34,000
10-14	36	36,171	7,733	30,200	36,000	40,000
15-19	26	40,553	13,045	32,000	39,000	45,000
20-24	16	42,201	8,854	36,600	43,150	48,500
Basic chemicals						
Total	63	50,069	24,689	34,000	46,000	61,080
Specialty chemicals						
Total	220	41,525	15,317	30,000	38,000	50,000
2-4	24	26,326	4,637	22,700	26,600	29,250
5-9	47	31,961	5,592	28,000	31,090	34,000
10-14	38	39,593	14,271	30,000	34,000	45,000
15-19	32	44,376	10,081	37,500	42,750	51,500
20-24	19	47,753	11,396	40,500	48,540	58,000
25-29	20	55,159	15,768	45,318	52,500	68,000
30-34	15	47,623	13,899	39,800	45,000	60,000
35-39	16	55,331	17,264	47,500	52,500	65,500
Agricultural chemicals						
Total	40	38,447	12,451	28,500	36,900	46,200
Biochemical products						
Total	16	38,766	18,607	28,250	33,000	44,800
Coatings						
Total	87	39,144	17,330	27,417	35,086	47,500
2-4	15	25,332	4,085	22,000	25,700	30,000
Electronics						
Total	50	42,284	17,843	33,000	37,560	46,000
Food						
Total	64	35,650	11,080	27,404	33,400	43,000
5-9	15	28,816	5,855	25,050	30,000	33,200
10-14	18	39,104	7,778	33,600	39,150	45,400
Glass						
Total	23	45,862	18,352	32,376	43,300	54,000
Metals, minerals						
Total	33	38,696	26,822	27,600	34,000	38,000
Paper						
Total	15	38,745	17,101	25,916	35,000	47,400
Petroleum						
Total	59	42,212	17,292	28,692	38,040	49,000
5-9	18	33,208	7,326	27,000	31,323	38,500
Pharmaceuticals						
Total	216	36,724	13,787	28,000	33,146	42,000
2-4	40	26,459	4,234	23,752	26,667	29,523
5-9	61	31,047	5,139	28,000	30,000	34,500
10-14	39	36,857	6,546	32,550	36,100	40,400
15-19	22	44,878	13,212	38,000	41,850	49,900

Table 2.2.3 Continued

TYPE OF INDUSTRY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Plastics						
Total	59	44,440	18,687	30,000	41,000	54,000
Rubber						
Total	34	45,069	16,436	33,000	43,000	52,000
Soaps						
Total	22	38,915	11,632	31,000	38,000	50,000
Other manufactures						
Total	261	41,037	14,141	29,900	39,966	50,000
2-4	32	27,669	5,621	25,500	27,000	30,300
5-9	67	33,581	8,329	28,500	30,680	39,000
10-14	41	39,460	9,882	34,500	39,700	46,125
15-19	23	48,057	8,275	45,000	48,000	53,292
20-24	26	48,135	11,382	43,000	50,000	52,000
25-29	20	50,278	18,668	36,738	47,538	65,000
30-34	15	51,854	15,412	46,000	50,400	58,000
35-39	24	51,739	11,829	42,909	50,000	58,722

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.2.4

SALARIES of BS CHEMISTS employed FULL-TIME
by GEOGRAPHIC REGION and YEARS SINCE BS
1988 ACS Salary Survey

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Total	140	41,731	20,928	31,000	38,050	46,300
2-4	21	28,389	5,392	26,000	28,000	32,000
5-9	35	34,199	7,409	28,600	34,500	39,000
10-14	27	38,748	11,206	31,000	36,100	46,000
15-19	16	44,965	11,203	36,750	41,150	51,610
Mountain						
Total	41	41,355	15,458	29,300	39,100	49,500
West North Central						
Total	86	38,270	14,874	27,100	34,015	46,000
5-9	24	29,825	6,118	25,750	30,000	33,350
10-14	19	36,068	9,320	31,000	33,800	40,000
West South Central						
Total	122	40,729	16,703	28,494	37,900	49,000
2-4	16	25,443	3,426	22,470	26,050	27,000
5-9	30	31,781	7,563	27,000	31,500	36,000
10-14	27	39,902	12,463	32,000	37,000	45,400
East North Central						
Total	353	38,944	13,357	28,600	36,000	47,000
2-4	57	26,873	4,479	24,000	27,000	30,000
5-9	67	31,916	5,818	28,000	31,000	35,280
10-14	68	39,271	7,919	33,500	39,975	45,228
15-19	41	43,570	12,872	35,000	42,000	50,000
20-24	31	47,879	13,242	37,500	49,900	55,200
25-29	29	49,235	16,118	36,000	45,156	58,020
30-34	20	49,937	13,179	42,500	51,000	59,000
35-39	18	52,348	15,796	42,990	49,310	64,000
East South Central						
Total	52	37,866	12,476	29,480	35,700	47,500
Middle Atlantic						
Total	396	40,756	17,722	28,700	37,000	47,100
0-1	20	24,470	3,661	21,675	24,750	26,400
2-4	58	26,940	5,626	23,276	27,000	30,000
5-9	88	32,675	6,889	27,300	30,550	37,560
10-14	46	38,445	11,521	31,000	36,250	45,000
15-19	37	44,299	13,996	36,350	41,700	47,200
20-24	28	45,152	11,527	40,620	44,320	49,391
25-29	28	50,761	17,596	38,400	47,250	63,500
30-34	36	57,958	28,687	41,550	50,400	60,750
35-39	47	55,719	17,625	44,000	54,782	62,250

Table 2.2.4 Continued

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
South Atlantic						
Total	190	38,401	15,681	27,000	34,000	47,000
2-4	34	24,786	5,208	20,000	25,085	28,000
5-9	52	30,262	6,419	26,250	29,400	34,000
10-14	32	39,102	9,403	33,000	38,440	42,840
15-19	19	46,036	12,783	35,000	49,320	53,292
New England						
Total	108	40,720	21,568	28,250	35,000	46,750
5-9	32	31,621	5,711	27,700	31,500	35,043
10-14	18	36,209	9,492	28,507	36,303	42,700

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.3.1

SALARIES of MS CHEMISTS employed FULL-TIME in INDUSTRY
by WORK SPECIALTY and YEARS SINCE BS
1988 ACS Salary Survey

WORK SPECIALTY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Biochem/Biotech						
Total	39	46,655	18,830	31,500	42,000	55,400
General chemistry						
Total	27	48,738	27,254	34,000	44,000	51,000
Agricultural chemistry						
Total	41	42,789	15,119	33,000	37,500	53,000
Analytical chemistry						
Total	232	41,558	12,900	33,348	40,000	46,900
5-9	50	33,677	7,318	27,500	33,150	40,000
10-14	57	39,913	6,611	35,700	40,000	44,553
15-19	42	40,921	9,874	35,000	39,400	45,000
20-24	29	45,999	15,827	37,500	44,350	49,000
25-29	23	50,467	13,796	43,000	52,000	57,720
30-34	15	53,893	24,019	39,039	45,000	78,000
Environmental chemistry						
Total	52	42,757	12,581	31,538	41,000	53,300
Inorganic chemistry						
Total	27	42,377	11,904	32,000	41,000	50,000
Materials science						
Total	42	54,965	24,915	40,400	45,750	66,465
Medicinal/Pharmaceutical						
Total	72	41,698	14,887	32,530	38,500	47,400
5-9	17	30,856	4,598	28,000	32,060	34,600
10-14	17	36,841	10,453	29,000	38,000	41,000
15-19	15	42,710	9,380	36,309	41,000	45,120
Organic chemistry						
Total	79	45,739	17,560	33,000	41,950	54,000
10-14	22	35,514	7,298	30,000	34,750	41,200
15-19	15	40,260	10,191	33,000	37,900	42,000
Physical chemistry						
Total	26	49,760	14,580	38,792	48,600	60,000
Polymer chemistry						
Total	135	49,480	15,750	38,070	47,190	60,000
5-9	17	32,877	5,686	30,300	32,100	38,000
10-14	22	39,934	7,190	34,800	40,000	43,500
15-19	19	45,212	10,158	38,070	44,000	52,000
20-24	18	51,117	14,451	42,000	48,000	60,000
25-29	16	60,649	14,959	54,995	62,250	67,000
35-39	23	60,760	15,377	48,750	58,000	69,500
Other chemical science						
Total	42	44,693	13,171	33,720	43,750	51,000
Business/Nonchem						
Total	89	55,296	36,931	38,844	48,800	61,000
15-19	20	50,600	16,285	38,900	52,450	62,500
20-24	19	52,373	14,494	44,000	50,460	58,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.3.2

SALARIES of MS CHEMISTS employed FULL-TIME in INDUSTRY
by WORK FUNCTION and YEARS SINCE BS
1988 ACS Salary Survey

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
R&D Mgt						
Total	109	58,041	19,732	45,000	56,950	68,000
10-14	15	48,260	13,138	40,500	45,000	56,800
15-19	15	47,119	11,649	39,500	45,960	55,000
20-24	17	60,954	15,386	47,008	60,050	70,000
25-29	18	64,047	14,160	60,000	65,350	70,600
30-34	16	67,639	15,856	57,650	67,200	81,675
35-39	15	72,566	30,778	54,700	61,500	87,516
Basic research						
Total	76	39,051	10,943	31,938	36,844	44,250
5-9	17	30,244	4,554	27,000	28,740	33,300
10-14	24	36,154	5,300	32,000	36,350	40,000
Applied research						
Total	307	42,651	11,945	34,000	40,800	49,900
5-9	62	33,799	6,020	30,315	33,025	38,000
10-14	70	39,342	7,393	34,000	39,650	44,300
15-19	57	42,435	8,317	36,309	41,000	46,000
20-24	33	49,127	13,085	41,000	49,000	55,000
25-29	33	48,981	11,131	45,000	49,500	54,000
30-34	19	55,278	19,126	40,000	59,000	74,000
35-39	20	52,675	8,356	47,500	53,500	57,500
General Mgt						
Total	94	61,324	38,347	42,000	56,500	70,000
15-19	21	52,135	15,657	43,000	57,000	60,000
35-39	15	88,310	72,361	57,000	67,200	75,000
Marketing						
Total	88	48,211	15,782	40,000	47,600	55,250
10-14	21	38,205	11,173	36,900	40,000	44,000
15-19	17	51,080	11,960	44,000	53,300	55,500
Production						
Total	122	39,105	14,422	29,094	36,000	45,000
5-9	24	30,672	7,087	25,250	27,750	36,305
10-14	29	37,176	8,036	30,000	36,800	42,000
15-19	23	39,887	12,261	30,400	36,000	47,500
20-24	17	44,529	20,438	33,396	42,900	49,000
Forensics						
Total	27	38,710	7,507	34,000	39,000	44,600
Computers						
Total	16	40,703	7,710	36,200	42,650	45,764
Consulting						
Total	21	40,196	13,983	29,400	37,960	50,000
Other						
Total	41	44,428	11,031	36,000	43,776	50,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.3.3

SALARIES of MS CHEMISTS employed FULL-TIME
by INDUSTRY and YEARS SINCE BS
1988 ACS Salary Survey

TYPE OF INDUSTRY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Non-manufacturing						
Total	116	40,510	14,521	30,000	38,200	47,950
5-9	28	29,254	6,186	24,650	27,750	32,050
10-14	26	40,149	13,436	34,400	38,000	43,000
15-19	24	42,429	12,651	35,150	42,600	50,500
Basic chemicals						
Total	48	53,491	24,014	38,475	48,800	58,000
Specialty chemicals						
Total	117	48,477	18,614	35,900	44,800	58,000
10-14	23	39,604	8,041	35,000	40,000	45,000
15-19	26	41,561	11,060	34,400	40,975	48,000
Agricultural chemicals						
Total	25	44,476	13,758	34,000	40,000	52,000
Biochemical products						
Total	21	46,524	14,261	32,500	48,000	57,000
Coatings						
Total	41	46,285	15,732	36,500	44,900	52,000
Electronics						
Total	29	44,521	13,400	38,000	44,000	50,000
Food						
Total	38	44,882	15,615	35,000	45,000	52,500
Metals, minerals						
Total	22	41,848	9,337	33,400	41,200	48,000
Paper						
Total	16	38,353	11,396	29,700	35,550	45,500
Petroleum						
Total	27	50,822	16,611	37,500	45,000	60,800
Pharmaceuticals						
Total	170	42,995	15,446	33,000	40,000	48,000
5-9	32	31,144	4,464	27,575	32,080	34,200
10-14	42	37,946	8,279	31,000	37,850	41,000
15-19	34	42,920	9,788	38,000	41,000	45,960
20-24	23	51,045	16,576	43,600	49,140	54,600
Plastics						
Total	55	47,959	15,366	33,300	45,500	60,000
Other manufactures						
Total	178	49,550	28,374	36,800	44,325	54,900
5-9	25	35,566	6,519	31,500	35,000	38,600
10-14	40	41,922	10,036	36,750	40,736	44,975
15-19	31	46,331	11,348	37,500	44,000	55,000
20-24	34	48,857	14,984	39,360	46,500	55,000
35-39	19	71,700	65,706	50,000	54,900	65,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.3.4

SALARIES of MS CHEMISTS employed FULL-TIME
by GEOGRAPHIC REGION and YEARS SINCE BS
1988 ACS Salary Survey

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Total	97	43,084	15,442	33,000	39,600	49,000
5-9	24	34,112	6,669	30,000	35,000	37,500
10-14	29	40,130	11,014	35,136	38,000	45,000
Mountain						
Total	20	33,645	8,083	27,500	33,500	36,450
West North Central						
Total	49	47,375	18,621	35,000	44,000	53,000
West South Central						
Total	53	50,265	23,944	33,396	41,400	58,000
East North Central						
Total	221	44,168	14,963	34,000	41,600	50,600
5-9	37	31,983	6,192	27,500	31,000	35,000
10-14	45	40,534	8,817	34,500	40,000	44,553
15-19	47	42,205	11,075	36,000	40,000	45,120
20-24	26	48,489	18,989	37,000	47,504	54,000
25-29	22	51,853	15,168	45,000	51,320	57,400
30-34	15	56,258	18,920	43,550	60,000	65,000
35-39	22	56,180	15,337	48,000	51,000	61,500
East South Central						
Total	29	44,998	12,309	35,000	44,000	53,400
Middle Atlantic						
Total	244	48,426	17,310	37,550	45,000	55,700
5-9	24	34,606	5,121	31,000	35,000	38,000
10-14	58	40,230	8,509	34,000	40,700	45,000
15-19	43	45,749	11,166	37,500	45,060	52,000
20-24	39	48,253	10,035	42,000	46,176	55,000
25-29	25	57,023	18,300	43,200	54,000	67,000
30-34	21	61,284	17,889	49,500	58,000	78,000
35-39	21	62,346	21,345	51,000	59,500	68,000
South Atlantic						
Total	117	43,904	15,765	32,060	41,000	53,200
5-9	27	31,607	6,432	25,550	32,060	37,080
10-14	23	40,397	11,849	34,000	38,400	48,560
15-19	18	42,803	13,887	33,000	39,100	54,900
New England						
Total	72	51,833	38,690	35,150	46,350	55,750
10-14	15	40,091	8,644	32,500	40,000	44,000
15-19	16	47,913	9,615	40,150	49,400	55,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.4.1

SALARIES of PhD CHEMISTS employed FULL-TIME in INDUSTRY
by WORK SPECIALTY and YEARS SINCE BS
1988 ACS Salary Survey

WORK SPECIALTY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Biochemistry						
Total	71	55,895	15,758	46,000	53,000	62,000
10-14	21	46,916	7,887	42,000	47,400	52,000
15-19	15	56,375	8,468	52,500	58,100	62,150
Biotechnology						
Total	77	57,259	16,240	47,000	53,340	64,000
10-14	24	51,802	14,094	44,140	48,540	53,170
15-19	19	55,878	10,371	47,000	54,000	64,000
General chemistry						
Total	32	60,747	17,241	49,750	55,150	70,000
Agricultural chemistry						
Total	110	58,836	22,973	43,000	52,100	66,180
10-14	20	43,509	3,668	41,250	42,350	45,500
15-19	18	53,220	9,550	47,500	50,950	60,000
20-24	26	56,086	16,662	43,056	58,250	64,000
25-29	19	66,023	17,162	58,600	65,700	72,000
Analytical chemistry						
Total	327	53,774	15,201	43,980	51,560	60,300
5-9	37	42,578	3,585	40,100	42,200	44,364
10-14	89	47,398	6,404	42,900	47,520	51,720
15-19	62	53,875	9,191	48,000	52,500	60,000
20-24	61	59,573	13,429	52,500	59,000	65,000
25-29	31	66,990	27,610	55,000	63,000	72,000
30-34	19	59,325	12,987	49,000	60,000	68,500
35-39	21	58,525	24,300	43,152	60,000	67,000
Clinical chemistry						
Total	41	58,676	26,494	45,000	55,000	65,520
Environmental chemistry						
Total	67	60,319	18,894	47,800	56,000	69,000
Inorganic chemistry						
Total	83	56,167	16,710	45,000	51,636	65,000
5-9	15	41,265	4,694	40,000	42,000	44,900
10-14	21	49,389	7,631	45,000	48,000	51,636
Materials science						
Total	160	61,809	19,676	50,000	59,600	68,000
10-14	30	49,976	10,444	43,680	49,970	54,800
20-24	32	61,512	11,754	53,400	59,445	66,620
25-29	27	72,464	18,125	62,100	70,800	75,500
30-34	27	64,583	20,670	53,000	64,320	70,000

Table 2.4.1 Continued

WORK SPECIALTY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Medicinal-Pharmaceutical						
Total	182	62,471	25,215	44,900	54,950	72,000
5-9	23	42,390	3,925	41,000	42,600	45,000
10-14	40	46,968	6,683	43,000	47,450	50,965
15-19	21	56,239	11,003	47,500	55,000	65,000
20-24	30	64,984	18,230	52,000	60,250	75,000
25-29	25	77,246	21,815	70,000	73,000	86,400
30-34	16	71,733	27,027	54,850	63,250	82,308
35-39	16	91,154	37,672	65,232	81,500	105000
Organic chemistry						
Total	330	57,074	15,522	46,000	54,050	65,000
5-9	32	41,605	5,972	39,500	41,750	44,500
10-14	75	48,805	7,169	44,300	47,520	53,000
15-19	58	52,320	9,961	46,268	52,500	57,000
20-24	51	61,264	11,819	53,520	60,000	67,200
25-29	44	67,880	17,437	57,480	65,470	79,500
30-34	31	65,520	15,649	53,000	65,000	78,800
35-39	26	64,247	18,367	51,580	63,000	77,000
Physical chemistry						
Total	140	57,676	13,945	48,440	55,100	65,380
10-14	30	50,251	5,498	45,344	50,000	54,000
15-19	29	57,289	11,232	49,600	56,800	61,000
20-24	30	55,187	13,246	48,000	57,000	62,000
25-29	21	63,134	13,108	54,480	65,000	72,000
Polymer chemistry						
Total	415	59,346	16,025	47,000	55,500	68,500
5-9	43	43,074	3,689	40,800	42,000	45,900
10-14	82	48,824	6,168	45,000	48,550	52,000
15-19	60	54,108	9,685	47,850	53,000	60,150
20-24	68	64,090	12,780	55,000	64,100	72,000
25-29	66	69,080	14,932	59,124	65,500	78,300
30-34	28	70,393	17,828	59,930	69,800	80,500
35-39	48	67,457	17,197	55,000	69,300	79,525
40 or more	20	70,004	23,468	57,728	67,300	79,190
Other chemical science						
Total	63	64,885	20,950	52,000	62,400	71,000
20-24	18	65,309	13,960	57,800	63,150	70,000
Business Administration						
Total	65	84,557	35,340	58,000	78,000	98,000
20-24	18	76,998	22,167	58,000	77,750	85,000
Other non-chem						
Total	72	62,452	24,239	44,525	59,000	75,800
20-24	20	61,308	19,893	48,150	60,525	73,250

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.4.2

SALARIES of PhD CHEMISTS employed FULL-TIME in INDUSTRY
by WORK FUNCTION and YEARS SINCE BS
1988 ACS Salary Survey

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
R&D Mgt						
Total	544	71,636	22,641	57,350	67,875	80,000
10-14	65	54,517	8,308	49,000	54,000	60,632
15-19	89	60,404	10,199	52,800	59,000	66,000
20-24	138	70,771	15,966	61,000	68,988	79,400
25-29	105	78,341	22,205	66,000	75,000	86,100
30-34	53	83,789	28,978	67,300	78,800	90,000
35-39	55	86,871	30,130	70,000	81,000	100000
40 or more	29	82,375	26,381	59,000	80,000	97,000
Basic research						
Total	300	53,441	13,089	43,700	50,718	60,700
5-9	47	42,754	4,246	40,500	42,800	45,500
10-14	84	48,426	6,852	42,800	48,000	53,070
15-19	50	51,132	9,179	44,000	49,750	56,500
20-24	52	58,027	11,914	52,000	58,000	65,000
25-29	32	60,769	12,646	53,240	59,050	69,000
30-34	19	67,641	14,553	54,700	68,000	75,000
Applied research						
Total	996	53,064	12,094	44,280	50,170	60,000
5-9	133	42,391	4,103	40,000	42,000	45,000
10-14	269	47,331	6,142	43,600	47,000	50,500
15-19	157	51,647	7,862	46,268	51,700	57,900
20-24	144	55,239	10,085	48,100	55,300	61,800
25-29	123	62,833	11,691	55,000	63,600	70,000
30-34	69	61,483	15,044	51,000	61,000	70,000
35-39	80	64,017	15,572	54,500	62,000	75,300
40 or more	21	63,183	14,866	55,108	65,000	75,520
General Mgt						
Total	117	77,409	32,578	57,000	68,700	90,000
15-19	20	63,240	13,057	57,200	60,000	71,850
20-24	20	70,770	21,960	56,720	61,700	81,750
25-29	25	77,281	25,033	58,000	70,000	90,000
30-34	17	98,529	36,462	75,000	90,000	110000
35-39	16	85,506	43,978	56,000	77,500	115000
Marketing						
Total	86	59,554	14,030	50,300	57,500	65,000
10-14	15	49,448	7,864	43,000	47,000	56,000
20-24	25	60,500	10,951	52,800	58,000	66,000
Production						
Total	51	52,996	19,073	42,000	51,700	61,200
Forensics						
Total	29	50,942	9,264	43,000	52,000	57,000
Chem info services						
Total	18	54,392	14,281	42,000	54,000	60,050

Table 2.4.2 Continued

YEARS SINCE BS WORK FUNCTION	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Computers						
Total	20	47,850	10,997	40,880	46,774	55,700
Consulting						
Total	22	56,266	24,546	45,000	48,500	65,000
Other						
Total	48	57,034	21,106	44,375	50,000	69,500

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.4.3

SALARIES of PhD CHEMISTS employed FULL-TIME
by INDUSTRY and YEARS SINCE BS
1988 ACS Salary Survey

INDUSTRY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Non-manufacturing						
Total	209	55,863	20,747	43,600	51,000	65,000
5-9	23	40,439	8,292	36,000	40,000	45,000
10-14	34	47,413	8,320	43,000	46,500	52,000
15-19	41	50,234	11,463	43,980	49,000	57,000
20-24	38	57,821	19,067	43,056	58,692	71,000
25-29	28	60,876	19,058	46,500	56,500	71,000
30-34	22	72,418	33,734	48,000	65,000	84,000
Basic chemicals						
Total	194	62,548	22,904	47,600	58,000	69,000
5-9	18	42,280	2,337	40,200	41,970	43,500
10-14	43	47,998	5,202	44,750	48,000	52,000
15-19	20	54,347	9,114	48,952	54,500	60,200
20-24	41	68,022	14,098	60,900	65,000	72,000
25-29	32	73,136	32,235	55,610	63,500	85,500
30-34	18	74,644	20,258	64,800	69,000	80,000
35-39	17	79,935	28,858	60,000	75,600	88,200
Specialty chemicals						
Total	340	57,089	17,899	45,000	52,250	65,150
5-9	36	41,403	4,450	39,620	41,500	43,780
10-14	79	47,218	6,218	43,000	46,400	50,000
15-19	57	52,791	8,578	48,000	51,560	57,000
20-24	56	60,864	15,583	52,500	59,068	68,850
25-29	38	65,813	16,680	55,000	65,620	75,000
30-34	32	70,474	21,126	54,100	69,250	79,150
35-39	29	68,403	25,813	51,580	62,000	77,000
Agricultural chemicals						
Total	102	60,441	20,850	46,000	56,000	70,000
10-14	24	45,790	4,327	42,400	45,000	49,500
15-19	22	56,811	10,943	48,480	54,401	60,200
20-24	21	59,244	12,432	49,100	61,000	65,000
Biochemical products						
Total	55	54,024	13,556	46,000	52,450	60,000
15-19	19	54,206	7,452	50,000	53,880	60,000
Coatings						
Total	54	55,314	13,487	45,000	53,160	61,500
20-24	16	53,545	8,517	47,500	54,510	59,050
Electronics						
Total	96	57,962	13,718	49,160	54,400	64,100
10-14	28	53,168	7,047	48,700	53,000	57,000
15-19	19	55,831	7,924	49,320	52,800	62,000
20-24	16	64,068	12,370	54,900	62,750	71,250
25-29	15	57,931	14,467	43,200	58,000	72,450
Food						
Total	67	58,104	19,286	44,400	55,000	65,000
20-24	16	56,635	17,583	47,100	57,750	64,000
25-29	15	64,585	17,849	58,000	63,000	66,180

Table 2.4.3 Continued

INDUSTRY & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Glass						
Total	26	60,416	25,331	43,896	52,500	65,508
Metals, minerals						
Total	24	56,146	16,473	44,900	54,650	64,714
Paper						
Total	31	62,098	21,071	46,000	60,000	75,000
Petroleum						
Total	99	64,451	19,687	50,040	60,500	79,000
10-14	32	51,852	7,972	46,550	51,250	57,700
20-24	17	70,735	22,094	65,000	70,000	76,300
Pharmaceuticals						
Total	367	59,881	22,098	45,100	54,100	67,000
5-9	42	43,262	3,519	41,000	43,000	45,100
10-14	94	48,678	7,234	43,956	48,760	52,000
15-19	59	55,315	9,233	48,720	55,000	60,500
20-24	67	62,782	16,994	52,000	59,000	70,000
25-29	41	77,038	21,918	60,900	71,500	86,400
30-34	27	75,939	36,216	55,000	66,900	80,000
35-39	25	83,102	36,298	56,850	79,200	96,000
Plastics						
Total	133	63,730	17,784	50,500	61,000	72,900
10-14	28	49,705	6,834	44,300	49,000	52,000
20-24	22	64,504	12,511	58,000	64,370	70,000
25-29	30	77,357	15,130	65,000	75,950	85,000
Rubber						
Total	26	57,200	13,912	47,500	53,500	66,000
Soaps						
Total	36	59,783	14,517	49,050	56,750	70,500
Other manufactures						
Total	376	59,169	18,382	46,580	57,000	66,550
5-9	34	42,755	4,705	40,664	42,450	46,000
10-14	63	49,492	8,213	43,186	48,000	57,000
15-19	60	55,962	11,966	48,000	54,500	63,425
20-24	73	60,389	14,611	52,000	58,000	68,000
25-29	61	65,860	15,030	55,260	65,000	71,000
30-34	36	64,355	17,439	53,678	63,750	72,000
35-39	31	67,083	23,606	51,000	65,160	75,000
40 or more	18	83,110	38,595	60,000	79,200	92,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 2.4.4

SALARIES of PhD CHEMISTS employed FULL-TIME in INDUSTRY
by GEOGRAPHIC REGION and YEARS SINCE BS
1988 ACS Salary Survey

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Total	231	59,231	19,525	47,000	56,500	66,180
5-9	21	40,110	7,841	36,000	41,500	45,000
10-14	51	51,017	11,035	44,500	47,400	56,000
15-19	50	56,595	10,870	49,252	57,300	64,000
20-24	38	63,201	16,085	49,600	62,900	71,500
25-29	30	63,819	13,822	56,100	64,175	73,000
30-34	16	68,333	19,632	51,550	72,500	82,000
35-39	18	79,185	26,321	62,000	76,500	89,000
Mountain						
Total	40	54,647	13,695	45,000	52,000	60,000
West North Central						
Total	134	55,166	17,186	43,200	51,000	60,400
10-14	31	45,925	5,908	42,000	45,000	51,000
15-19	28	50,511	9,317	44,800	49,750	53,320
20-24	27	57,051	13,960	50,000	56,000	59,136
25-29	18	68,808	21,624	60,400	65,000	72,450
West South Central						
Total	155	63,004	26,127	47,100	56,000	70,000
10-14	40	50,182	6,659	45,000	49,200	54,050
15-19	19	51,896	10,198	42,600	52,020	57,216
20-24	35	59,058	15,028	51,000	62,000	69,000
25-29	18	84,809	33,392	65,000	75,050	95,040
30-34	16	85,401	36,919	63,500	74,700	99,000
East North Central						
Total	468	57,048	18,220	44,120	53,000	65,610
5-9	44	41,675	4,013	39,500	42,000	43,000
10-14	98	46,440	7,161	42,000	45,000	50,200
15-19	67	52,999	9,355	47,500	52,450	58,100
20-24	86	60,970	16,646	52,000	58,214	69,000
25-29	88	67,633	18,981	55,000	65,404	72,500
30-34	32	65,548	23,342	48,850	59,930	77,750
35-39	41	66,163	26,083	49,300	64,000	81,096
East South Central						
Total	42	60,845	14,628	50,000	58,000	67,650
Middle Atlantic						
Total	662	59,943	18,039	47,200	55,750	68,500
5-9	72	42,979	4,324	40,582	42,000	45,050
10-14	147	49,936	7,198	44,900	49,000	54,000
15-19	97	55,392	10,658	48,000	54,610	60,000
20-24	132	63,343	14,389	54,900	62,000	70,275
25-29	71	70,087	14,675	60,000	71,325	80,000
30-34	64	72,228	21,317	59,700	67,500	80,000
35-39	53	74,382	24,126	58,300	70,000	85,000
40 or more	26	75,844	28,726	53,300	71,000	100000

Table 2.4.4 Continued

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
South Atlantic						
Total	321	60,014	19,594	47,000	57,000	66,500
5-9	33	43,072	4,245	41,000	42,600	46,000
10-14	50	47,459	6,488	43,680	47,510	50,880
15-19	55	54,850	9,629	48,500	53,880	60,000
20-24	48	60,858	19,587	51,500	59,877	65,620
25-29	55	65,978	16,166	56,220	63,000	72,300
30-34	29	66,412	15,238	56,900	65,000	76,000
35-39	36	77,045	28,953	59,968	69,800	89,000
40 or more	15	80,257	24,841	66,600	75,000	82,000
New England						
Total	180	61,289	23,881	46,750	56,750	67,350
5-9	17	44,235	7,483	41,500	45,100	46,500
10-14	36	48,304	7,660	44,700	48,000	51,500
15-19	27	54,919	11,287	48,500	57,000	61,500
20-24	32	65,162	13,585	55,100	61,100	73,000
25-29	23	71,458	25,161	59,000	63,000	85,000
30-34	15	84,858	45,958	53,000	75,000	90,000
35-39	15	69,586	28,340	51,000	70,000	81,217
40 or more	15	67,530	27,309	45,000	60,000	85,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 3.1.1

SALARIES of GOVERNMENTAL CHEMISTS employed FULL-TIME
by DEGREE and YEARS SINCE BS
1988 ACS Salary Survey

HIGHEST DEGREE & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
BS						
Total	174	35,580	10,918	27,000	33,532	42,500
5-9	30	28,188	4,728	25,000	27,358	31,400
10-14	22	33,206	8,517	25,500	33,468	37,800
15-19	27	35,002	10,355	28,000	34,000	42,000
20-24	20	37,476	9,950	29,892	39,500	43,298
25-29	24	39,044	7,505	32,000	39,250	43,451
35-39	19	45,381	11,866	39,000	48,000	54,672
MS						
Total	129	40,993	12,062	33,000	41,000	47,000
10-14	16	33,950	10,193	27,047	33,109	38,909
15-19	25	37,604	10,028	31,412	37,300	44,000
20-24	26	42,884	8,230	35,400	42,750	47,000
25-29	15	48,277	7,938	43,181	47,403	52,580
30-34	18	42,922	13,414	34,325	41,866	47,184
PhD						
Total	346	51,501	12,086	42,360	51,000	60,400
5-9	15	39,487	8,530	34,325	39,780	47,000
10-14	37	41,362	8,360	36,539	41,000	43,500
15-19	53	46,971	11,332	40,800	46,000	53,575
20-24	72	51,976	9,421	44,769	51,352	60,400
25-29	58	52,934	10,672	45,600	55,350	60,000
30-34	38	54,867	12,371	48,000	55,000	66,000
35-39	43	56,151	10,844	50,000	58,000	64,000
40 or more	30	63,176	11,953	59,000	65,944	70,150

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.1.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by CONTRACT STATUS and RANK
1988 ACS Salary Survey

CONTRACT STATUS & ACADEMIC RANK	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
9-10 month						
Full professor	517	47,391	13,632	38,600	45,000	53,525
Assoc professor	183	34,759	7,244	30,000	34,000	39,000
Asst professor	147	28,819	4,555	26,000	28,728	31,300
Instructor	27	26,216	4,419	23,000	25,500	28,000
Total	889	40,842	13,687	31,000	38,600	47,400
11-12 month						
Full professor	190	62,697	16,234	53,057	60,629	72,000
Assoc professor	83	47,549	12,597	40,000	47,250	54,238
Asst professor	61	34,674	7,252	30,000	35,000	40,000
Instructor	35	36,278	12,127	28,000	34,000	41,208
Research assoc	77	34,617	12,207	26,000	32,000	43,000
Total	454	49,240	18,551	35,000	48,000	60,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.2.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and YEARS SINCE BS - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Full professor						
15-19	28	42,862	11,099	34,856	42,800	50,500
20-24	92	42,494	9,741	35,600	41,500	48,000
25-29	123	45,058	10,772	38,000	43,000	50,000
30-34	125	46,990	13,537	38,592	45,000	52,968
35-39	89	51,058	12,643	42,000	50,000	55,000
40 or more	60	57,193	19,550	43,059	54,250	68,500
Total	517	47,391	13,632	38,600	45,000	53,525
Assoc professor						
10-14	21	33,546	7,514	29,428	34,000	36,500
15-19	51	33,889	6,739	29,056	32,000	37,920
20-24	51	33,460	5,522	30,000	33,000	38,000
25-29	36	37,507	9,936	31,816	37,249	39,950
Total	183	34,759	7,244	30,000	34,000	39,000
Asst professor						
5-9	26	28,056	4,730	25,200	28,050	30,000
10-14	72	29,946	3,923	27,250	29,850	32,000
15-19	26	29,782	4,956	26,500	28,850	33,000
20-24	17	25,517	4,023	23,000	24,000	27,800
Total	147	28,819	4,555	26,000	28,728	31,300
Instructor						
Total	27	26,216	4,419	23,000	25,500	28,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.2.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and YEARS SINCE BS - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Full professor						
20-24	29	62,806	18,077	48,000	57,000	70,000
25-29	42	62,535	12,615	53,488	61,750	73,000
30-34	49	62,640	14,438	53,057	60,000	72,000
35-39	43	64,246	19,653	55,000	61,500	72,000
40 or more	24	60,748	18,212	54,500	64,000	73,500
Total	190	62,697	16,234	53,057	60,629	72,000
Assoc professor						
15-19	21	44,807	9,684	40,000	43,000	53,000
20-24	20	51,060	10,426	43,450	50,000	55,000
Total	83	47,549	12,597	40,000	47,250	54,238
Asst professor						
5-9	15	30,294	5,209	26,500	30,000	35,410
10-14	26	35,646	6,134	34,000	36,000	40,000
Total	61	34,674	7,252	30,000	35,000	40,000
Instructor						
Total	35	36,278	12,127	28,000	34,000	41,208
Research assoc						
10-14	23	31,387	7,069	26,000	30,100	37,000
Total	76	34,658	12,283	25,500	32,200	43,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.3.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and ACADEMIC WORK FUNCTION - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & WORK FUNCTION	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Teaching						
Full professor	305	43,025	9,508	36,500	42,000	49,000
Assoc professor	111	33,207	5,777	29,056	32,211	38,000
Asst professor	88	27,631	4,102	24,100	27,500	30,000
Instructor	22	26,174	4,884	23,000	24,700	28,000
Research						
Full professor	70	54,919	18,346	42,000	52,000	64,200
Assoc professor	21	35,918	5,831	31,000	35,000	40,000
Asst professor	31	31,140	4,310	28,600	31,000	34,000
Administration						
Full professor	21	47,438	17,086	35,000	49,000	57,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.3.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and ACADEMIC WORK FUNCTION - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & WORK FUNCTION	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Teaching						
Full professor	44	53,750	14,110	45,000	53,029	60,700
Assoc professor	25	41,990	10,288	33,511	41,610	48,600
Asst professor	19	28,175	4,958	24,000	28,000	32,000
Research assoc	15	28,790	8,787	20,500	28,500	35,500
Research						
Full professor	48	67,453	17,149	56,500	65,000	74,440
Assoc professor	31	48,049	13,655	40,000	48,500	54,000
Asst professor	23	37,727	4,934	34,500	36,800	40,000
Instructor	16	36,037	11,378	28,175	34,500	39,200
Research assoc	48	33,971	12,536	25,000	31,050	40,550
Administration						
Full professor	44	63,035	18,123	51,300	60,000	73,630

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.4.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and WORK SPECIALTY - 9 or 10 month Contract
1988 ACS Salary Survey

ACADEMIC RANK & WORK SPECIALTY	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Biochem/Biotech						
Full professor	58	49,847	14,673	41,000	48,500	59,300
Assoc professor	29	34,442	7,410	30,000	34,000	39,500
Asst professor	18	31,350	5,591	27,000	30,350	35,000
General chemistry						
Full professor	46	39,183	8,617	33,300	39,800	45,000
Assoc professor	17	34,645	6,570	30,000	35,000	37,920
Analytical chemistry						
Full professor	49	44,742	10,096	36,500	44,000	50,000
Assoc professor	28	33,042	5,089	29,273	32,525	35,854
Asst professor	19	28,045	4,859	23,850	29,000	32,000
Inorganic chemistry						
Full professor	76	47,398	13,799	40,000	43,287	54,113
Assoc professor	16	36,276	7,382	33,000	37,050	39,600
Asst professor	16	27,797	3,928	24,750	29,125	30,000
Organic chemistry						
Full professor	135	45,753	10,733	38,000	44,975	52,000
Assoc professor	39	34,062	5,653	30,235	33,000	38,793
Asst professor	36	28,261	3,977	25,600	28,500	30,800
Physical chemistry						
Full professor	92	49,980	16,300	40,174	45,200	55,000
Assoc professor	34	34,570	5,662	30,247	34,718	39,600
Asst professor	28	29,798	4,855	27,000	29,697	32,150
Polymer chemistry						
Full professor	19	55,838	18,740	41,400	50,000	65,000
Other chemical science						
Full professor	32	54,548	14,730	44,411	53,750	62,000
Asst professor	20	28,769	3,742	26,500	28,350	31,500

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.4.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and WORK SPECIALTY - 11 or 12 month Contract
1988 ACS Salary Survey

ACADEMIC RANK & WORK SPECIALTY	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Biochemistry						
Full professor	58	64,391	14,878	53,600	63,250	72,000
Assoc professor	42	46,935	12,207	40,000	48,250	54,000
Asst professor	16	34,238	7,080	30,000	36,800	40,000
Medicinal/Pharma-ceutical						
Full professor	17	62,908	17,093	60,000	64,000	73,000
Physical chemistry						
Full professor	19	56,001	13,534	45,500	57,000	65,000
Other chemical science						
Full professor	78	63,765	16,961	54,700	60,000	72,400
Assoc professor	25	48,000	15,243	36,000	43,900	58,000
Asst professor	29	34,718	7,513	30,000	35,000	37,200
Instructor	16	35,121	11,463	27,000	31,750	39,604
Research assoc	46	35,538	11,805	28,000	34,250	44,000
Other non-chem						
Full professor	18	59,478	18,424	47,925	54,000	74,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.5.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and TENURE - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & TENURE STATUS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Tenured						
Full professor	503	47,516	13,495	38,750	45,000	53,525
Assoc professor	157	35,515	7,218	30,800	35,000	39,600
Not tenured						
Assoc professor	25	30,429	5,611	28,000	30,000	33,000
Asst professor	132	28,722	4,479	25,600	28,714	31,250
Instructor	26	26,147	4,492	23,000	25,250	27,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.5.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and TENURE - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & TENURE STATUS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Tenured						
Full professor	173	62,800	16,541	53,057	60,000	72,000
Assoc professor	58	45,851	11,228	40,000	46,625	53,000
Not Tenured						
Full professor	15	62,940	13,309	58,000	65,000	73,000
Assoc professor	24	52,040	14,876	42,750	48,500	61,800
Asst professor	57	34,353	7,172	29,000	35,000	38,800
Instructor	33	36,707	12,341	28,350	34,000	41,208
Research assoc	66	34,363	11,630	26,000	33,000	42,100

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.6.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and INSTITUTIONAL CONTROL - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & INST CONTROL	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Public						
Full professor	330	48,702	13,650	39,500	45,000	54,000
Assoc professor	110	35,708	7,207	31,000	35,000	39,600
Asst professor	77	29,764	4,101	27,000	30,000	32,000
Instructor	15	27,181	5,406	23,000	26,700	28,016
Private						
Full professor	179	45,020	13,339	35,000	44,000	52,500
Assoc professor	70	33,338	7,195	28,800	33,000	37,920
Asst professor	68	27,635	4,788	23,925	27,600	30,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.6.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and INSTITUTIONAL CONTROL - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & INST CONTROL	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Public						
Full professor	132	63,176	13,377	54,614	61,500	72,200
Assoc professor	48	47,223	9,071	40,300	46,750	53,500
Asst professor	35	35,935	5,467	33,000	35,410	40,000
Instructor	20	35,961	11,915	29,000	33,500	39,604
Research assoc	47	37,193	13,194	28,500	35,500	45,000
Private						
Full professor	51	61,748	22,710	48,300	59,400	75,000
Assoc professor	29	50,112	16,112	35,000	49,500	60,000
Asst professor	22	32,838	8,894	26,625	30,500	40,000
Instructor	15	36,700	12,812	26,000	34,000	44,400
Research assoc	27	29,997	9,343	22,260	28,000	36,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.7.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and TYPE OF INSTITUTION - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & TYPE OF INST	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
AA-granting						
Full professor	23	38,243	8,220	33,363	38,000	42,000
BS-granting						
Full professor	162	39,866	7,715	34,000	39,200	45,000
Assoc professor	62	30,860	5,139	28,000	30,000	34,000
Asst professor	54	26,044	3,457	23,500	26,688	28,500
Instructor	15	25,775	3,536	24,000	25,500	26,500
MS-granting						
Full professor	84	43,606	6,536	39,000	43,690	48,342
Assoc professor	22	35,289	5,182	32,211	35,803	39,360
PhD-granting						
Full professor	240	54,419	15,160	43,925	52,000	61,250
Assoc professor	87	36,896	7,998	31,500	36,000	40,000
Asst professor	71	31,333	4,128	29,000	31,000	33,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.7.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and TYPE OF INSTITUTION - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & TYPE OF INST	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Medical school						
Full professor	46	65,318	14,277	59,000	66,750	72,600
Assoc professor	40	49,611	14,679	40,500	48,550	56,000
Asst professor	20	39,310	6,059	34,800	39,100	43,750
BS-granting						
Full professor	23	48,963	14,090	35,570	53,000	58,100
MS-granting						
Full professor	15	54,190	11,444	47,000	52,000	61,400
PhD-granting						
Full professor	102	66,169	16,316	56,000	63,450	74,600
Assoc professor	33	47,465	8,104	41,610	47,250	51,000
Asst professor	26	36,185	4,641	33,000	35,750	38,800
Instructor	22	36,273	14,129	26,000	32,500	44,400
Research assoc	61	34,596	11,885	26,000	32,400	43,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.8.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and SEX - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & SEX	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Men						
Full professor	439	47,953	13,900	38,600	45,000	54,000
Assoc professor	141	34,800	7,377	30,000	34,000	39,000
Asst professor	115	29,189	4,484	26,600	29,249	31,300
Instructor	16	26,326	4,946	23,250	24,450	28,008
Women						
Full professor	31	41,464	8,782	35,200	42,000	47,000
Assoc professor	28	33,544	6,337	29,865	34,500	37,199
Asst professor	21	27,036	4,458	23,007	27,000	30,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.8.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and SEX - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & SEX	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Men						
Full professor	171	62,949	15,545	54,000	61,044	73,000
Assoc professor	69	48,032	12,103	41,000	48,500	54,000
Asst professor	40	36,156	6,829	32,950	36,000	39,400
Instructor	23	34,496	10,858	26,000	32,400	40,400
Research assoc	65	34,874	12,636	25,000	31,500	44,000
Women						
Asst professor	18	31,267	7,532	26,500	31,400	40,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.9.1

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and GEOGRAPHIC REGION - 9 or 10 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & GEOGRAPHIC REGION	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Full professor	68	50,497	14,938	40,000	50,000	57,500
Assoc professor	15	36,903	7,749	30,800	37,000	44,000
Mountain						
Full professor	34	47,004	9,786	40,050	46,950	55,000
West North Central						
Full professor	38	39,965	9,171	33,000	37,250	45,400
Assoc professor	18	31,325	5,232	30,000	31,298	35,000
West South Central						
Full professor	44	43,292	16,584	33,525	39,000	45,700
East North Central						
Full professor	97	47,577	15,848	38,000	44,000	51,000
Assoc professor	38	33,022	5,755	29,000	32,124	38,000
Asst professor	24	28,586	3,929	26,250	27,605	30,500
East South Central						
Full professor	26	41,602	10,081	34,980	38,796	45,500
Middle Atlantic						
Full professor	105	50,300	11,554	43,000	50,000	56,000
Assoc professor	31	37,483	5,833	35,000	38,793	40,971
Asst professor	34	28,679	5,181	25,000	28,600	31,000
South Atlantic						
Full professor	63	45,842	11,572	39,500	45,000	50,400
Assoc professor	27	34,913	6,368	31,000	34,000	40,000
Asst professor	24	29,248	5,750	24,846	29,250	32,000
New England						
Full professor	42	51,896	13,738	44,000	50,000	55,000
Assoc professor	19	38,023	6,189	34,900	37,397	40,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 4.9.2

SALARIES of PhD ACADEMIC CHEMISTS employed FULL-TIME
by RANK and GEOGRAPHIC REGION - 11 or 12 Month Contract
1988 ACS Salary Survey

ACADEMIC RANK & GEOGRAPHIC REGION	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Full professor	27	63,624	18,847	56,000	61,044	70,000
West North Central						
Full professor	23	62,248	16,390	50,000	59,000	72,000
East North Central						
Full professor	43	65,758	16,770	54,000	64,000	76,000
Middle Atlantic						
Full professor	28	64,067	15,359	58,000	61,500	70,000
Assoc professor	15	47,866	14,219	43,900	52,000	57,500
Asst professor	19	34,507	8,178	28,200	33,000	40,000
South Atlantic						
Full professor	38	62,311	14,239	54,700	59,700	72,400
Assoc professor	24	48,751	9,934	42,000	48,250	52,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 5.1.1

STIPENDS of POSTDOCTORAL FELLOWS
by INSTITUTIONAL CONTROL and WORK SPECIALTY
1988 ACS Salary Survey

INST CONTROL & WORK SPECIALTY	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Biochemistry						
Total	29	19,860	2,537	18,000	20,000	22,000
Private	18	19,509	2,281	18,000	19,660	21,000
Chemistry						
Total	76	20,221	5,411	17,000	19,000	21,500
Public	56	19,659	3,825	17,000	19,721	21,000
Private	20	21,795	8,348	17,250	18,500	22,500

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.1.1

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by DEGREE and YEARS SINCE BS
1988 ACS Salary Survey

HIGHEST DEGREE & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
BS						
Total	729	52,803	24,815	35,000	47,736	63,000
0-1	17	29,629	4,887	27,000	29,100	31,000
2-4	102	30,839	4,824	28,000	30,800	33,000
5-9	107	36,730	7,452	31,000	37,000	41,000
10-14	63	45,721	10,427	40,700	46,000	52,150
15-19	38	51,803	13,452	40,600	51,350	59,000
20-24	45	57,866	22,854	45,800	54,000	60,300
25-29	61	66,948	30,485	45,000	63,000	77,220
30-34	94	66,204	24,097	52,000	60,120	75,000
35-39	141	66,630	28,105	48,000	60,000	75,000
40 or more	61	61,623	23,011	45,000	60,000	71,000
MS						
Total	604	56,761	24,436	40,400	50,925	66,250
2-4	31	33,101	2,691	31,200	33,500	34,000
5-9	110	39,736	6,599	35,900	39,310	43,260
10-14	90	47,608	11,092	39,000	47,000	52,000
15-19	59	56,124	18,666	45,500	52,200	61,000
20-24	48	61,718	17,819	50,000	60,000	69,750
25-29	68	65,076	23,735	49,500	60,200	79,500
30-34	62	72,841	32,367	52,700	65,000	81,600
35-39	88	66,314	25,883	50,000	62,500	78,000
40 or more	48	73,988	31,992	55,350	64,050	82,000
PhD						
Total	654	67,842	24,327	51,000	62,880	78,000
5-9	75	46,580	7,307	44,400	46,000	47,632
10-14	94	52,997	7,978	47,400	52,100	59,650
15-19	108	61,978	16,593	52,150	59,850	67,200
20-24	101	70,629	17,323	60,000	69,600	80,800
25-29	101	73,848	21,926	61,000	70,000	80,000
30-34	81	81,247	25,699	66,000	78,500	90,000
35-39	61	86,040	27,278	66,900	80,000	100000
40 or more	33	84,193	45,136	60,000	70,000	84,800

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.2.1

SALARIES of BS CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by WORK FUNCTION and YEARS SINCE BS
1988 ACS Salary Survey

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
R&D Mgt						
Total	67	66,410	22,901	51,000	63,500	79,000
35-39	20	77,125	22,367	63,200	70,650	86,100
Applied research						
Total	212	45,860	17,154	32,250	42,000	54,125
2-4	51	30,935	4,204	28,050	31,000	33,300
5-9	35	36,278	8,131	30,300	36,500	40,000
10-14	22	47,395	9,139	42,000	46,500	53,666
30-34	25	59,341	14,568	50,500	54,261	66,000
35-39	30	61,271	18,378	47,736	55,000	72,000
General Mgt						
Total	113	69,502	33,309	47,500	60,000	78,000
30-34	17	71,918	24,424	55,000	71,000	77,600
35-39	34	80,083	38,542	57,000	70,500	100000
40 or more	19	63,498	23,582	50,000	60,000	84,000
Marketing						
Total	92	56,757	27,032	40,210	50,000	65,000
35-39	20	63,921	26,663	46,400	57,174	74,600
Production						
Total	105	41,950	15,753	30,000	39,840	51,000
2-4	17	29,700	2,729	28,205	30,000	31,000
5-9	27	36,412	6,976	30,400	37,700	42,000
Consulting						
Total	44	49,055	24,406	30,500	40,650	60,000
Other						
Total	93	49,098	20,568	35,000	43,200	58,860
5-9	15	36,747	6,324	31,000	38,000	42,000
35-39	20	51,649	18,751	39,100	50,000	62,300

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.2.2

SALARIES of BS CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by REGION and YEARS SINCE BS
1988 ACS Salary Survey

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Total	86	48,174	21,927	31,800	42,750	57,960
5-9	16	38,623	9,209	32,400	40,500	46,500
West North Central						
Total	43	51,053	27,264	31,000	40,000	70,000
West South Central						
Total	61	56,625	22,773	39,000	55,200	70,000
East North Central						
Total	161	52,044	22,939	35,000	47,000	63,000
2-4	26	30,913	3,877	28,500	31,000	33,600
5-9	16	35,903	5,342	34,000	36,500	39,920
25-29	18	60,889	21,591	42,000	59,620	73,000
30-34	24	63,256	13,483	54,890	61,120	73,500
35-39	34	68,058	31,390	42,000	63,250	75,000
East South Central						
Total	23	45,044	17,285	31,000	46,500	53,750
Middle Atlantic						
Total	180	55,062	28,411	34,950	49,500	62,820
2-4	29	30,822	5,174	27,500	31,000	32,000
5-9	22	36,871	7,555	33,000	36,800	41,000
30-34	26	74,305	34,408	52,520	64,620	84,000
35-39	41	64,375	25,005	50,000	57,000	75,000
40 or more	19	58,276	24,942	41,000	56,000	62,640
South Atlantic						
Total	101	53,706	26,400	36,600	47,195	62,300
5-9	20	35,309	7,264	28,800	35,800	41,050
35-39	22	71,017	34,513	53,900	63,500	74,200
New England						
Total	57	49,570	17,629	36,400	47,736	58,008

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.3.1

SALARIES of MS CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by WORK FUNCTION and YEARS SINCE BS
1988 ACS Salary Survey

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
R&D Mgt						
Total	53	77,313	30,141	60,000	74,000	85,350
Applied research						
Total	227	46,884	11,915	38,000	45,200	53,460
5-9	67	39,964	6,625	35,900	40,000	43,500
10-14	47	46,093	7,924	40,900	46,800	51,000
15-19	21	48,878	9,049	44,900	49,300	54,000
20-24	17	56,714	11,894	50,000	52,500	64,400
25-29	20	52,400	13,461	42,508	51,208	59,250
35-39	24	51,659	14,940	38,080	49,000	62,000
General Mgt						
Total	95	78,855	31,137	58,000	70,000	93,000
25-29	16	78,738	23,089	61,200	77,000	84,500
30-34	19	79,530	32,427	55,775	70,000	98,000
35-39	22	82,489	29,792	61,000	78,702	105000
40 or more	16	91,725	41,315	66,000	82,000	103000
Marketing						
Total	54	54,854	21,494	37,800	52,350	61,440
Production						
Total	44	46,460	16,267	35,200	43,800	57,500
Computers						
Total	17	44,770	11,815	34,980	41,000	54,000
Consulting						
Total	48	54,800	19,696	40,500	51,450	62,480
Other						
Total	61	54,005	22,860	41,600	48,000	64,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.3.2

SALARIES of MS CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by REGION and YEARS SINCE BS
1988 ACS Salary Survey

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Total	60	51,176	14,952	39,500	50,100	61,000
West North Central						
Total	44	53,373	23,237	38,500	45,600	56,888
5-9	15	42,161	4,964	37,080	43,000	43,500
West South Central						
Total	55	59,208	21,672	44,600	55,000	70,560
East North Central						
Total	99	55,576	23,525	38,000	49,000	67,000
30-34	15	63,537	24,996	47,300	61,360	75,000
35-39	15	54,665	21,713	38,000	48,750	67,380
East South Central						
Total	15	49,429	14,932	37,500	49,200	63,300
Middle Atlantic						
Total	180	59,393	28,019	42,050	52,600	68,814
5-9	29	40,357	8,374	34,000	38,800	47,100
10-14	29	49,607	11,656	43,000	47,200	55,000
15-19	16	56,500	10,307	48,800	55,000	60,500
20-24	16	61,199	10,868	50,000	63,500	69,750
25-29	15	64,589	29,711	50,000	57,060	83,000
30-34	17	81,216	39,554	60,904	69,000	85,350
35-39	28	66,974	27,627	49,500	62,500	77,000
40 or more	19	84,787	40,729	60,000	70,000	97,600
South Atlantic						
Total	79	54,025	19,251	41,000	50,000	62,400
5-9	18	38,952	3,905	37,080	39,560	42,000
35-39	15	62,237	17,240	51,000	60,000	72,000
New England						
Total	58	63,937	31,959	42,000	51,200	80,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.4.1

SALARIES of PhD CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by WORK FUNCTION and YEARS SINCE BS
1988 ACS Salary Survey

WORK FUNCTION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
R&D Mgt						
Total	121	79,090	24,516	61,500	73,000	90,000
15-19	19	70,473	22,532	57,000	67,400	72,000
20-24	24	78,714	19,832	64,850	81,900	91,500
25-29	26	73,486	16,328	61,500	72,500	85,000
30-34	15	86,717	21,129	72,000	82,000	102000
Basic research						
Total	27	62,165	19,975	49,000	55,000	75,500
Applied research						
Total	342	58,764	14,615	47,250	56,000	66,300
5-9	59	45,216	3,181	44,000	45,180	47,200
10-14	73	51,374	7,947	46,000	49,500	56,500
15-19	60	57,792	12,637	51,000	55,850	63,900
20-24	46	62,720	10,358	55,000	62,260	70,000
25-29	44	65,334	10,776	60,000	65,500	70,350
30-34	33	73,968	14,625	66,000	70,000	84,000
35-39	18	73,855	17,652	60,000	75,200	85,000
General Mgt						
Total	68	95,534	38,773	73,400	86,000	103500
Marketing						
Total	30	70,492	17,304	61,000	69,550	75,000
Consulting						
Total	26	73,188	20,428	62,500	70,000	78,000
Other						
Total	39	61,816	17,345	50,000	60,000	71,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 6.4.2

SALARIES of PhD CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by REGION and YEARS SINCE BS
1988 ACS Salary Survey

REGION & YEARS SINCE BS	Count	Mean	Std Dev	25th %-ile	50th %-ile	75th %-ile
Pacific						
Total	81	65,976	20,346	52,000	64,000	75,000
25-29	16	69,250	13,648	59,000	64,150	80,500
West North Central						
Total	21	63,250	17,683	46,500	64,200	75,000
West South Central						
Total	87	70,790	23,981	54,000	63,500	80,000
20-24	18	70,715	23,394	60,000	66,890	82,500
25-29	16	82,069	25,714	62,000	76,000	103500
East North Central						
Total	106	65,304	24,944	51,000	60,000	71,000
10-14	19	51,890	7,089	45,000	49,500	56,500
15-19	21	61,255	21,094	52,450	56,000	63,800
20-24	15	73,463	20,479	60,240	70,000	84,000
25-29	19	75,803	31,000	60,900	71,000	75,000
Middle Atlantic						
Total	209	67,167	19,739	50,352	64,600	79,000
5-9	28	46,552	3,932	45,000	46,900	48,900
10-14	30	53,171	8,485	47,600	51,000	59,650
15-19	32	58,338	9,858	50,500	55,200	67,250
20-24	39	71,920	14,471	60,500	70,000	82,500
25-29	27	70,076	15,571	62,500	70,000	79,000
30-34	22	89,693	12,737	83,400	89,500	95,000
35-39	20	92,100	24,772	70,300	89,950	110000
South Atlantic						
Total	71	70,448	34,954	50,500	59,700	75,000
New England						
Total	55	77,669	30,244	58,600	70,500	89,000

Note: Cells with fewer than 15 cases have been suppressed.

Table 7.1.1

EMPLOYMENT STATUS OF ALL RESPONDENTS
by WORK SPECIALTY
1988 Survey of ACS Members

WORK SPECIALTY	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Chemical engineering	577	11	3	8	10	2	611
Row Percent	94.4%	1.7%	.5%	1.3%	1.7%	.3%	100.0%
Column Percent	6.6%	7.0%	2.0%	8.0%	8.6%	7.9%	6.6%
Biochemistry	460	3	38	3	4	0	508
Row Percent	90.5%	.6%	7.5%	.6%	.8%	.0%	100.0%
Column Percent	5.3%	2.0%	22.3%	3.0%	3.4%	.0%	5.5%
Biotechnology	171	1	5	2	1	0	181
Row Percent	94.8%	.7%	2.9%	1.3%	.3%	.0%	100.0%
Column Percent	2.0%	.8%	3.1%	2.2%	.5%	.0%	2.0%
General chemistry	405	19	2	5	8	1	440
Row Percent	92.0%	4.4%	.5%	1.1%	1.8%	.2%	100.0%
Column Percent	4.7%	12.7%	1.2%	4.9%	6.8%	3.8%	4.8%
Agricultural chemistry	267	2	1	3	4	0	276
Row Percent	96.5%	.8%	.4%	1.1%	1.3%	.0%	100.0%
Column Percent	3.1%	1.5%	.6%	3.0%	3.0%	.0%	3.0%
Analytical chemistry	1417	14	9	16	13	1	1470
Row Percent	96.4%	1.0%	.6%	1.1%	.9%	.1%	100.0%
Column Percent	16.3%	9.4%	5.3%	15.3%	11.1%	4.8%	15.9%
Clinical chemistry	99	1	2	1	2	0	105
Row Percent	94.3%	1.0%	1.9%	1.0%	1.9%	.0%	100.0%
Column Percent	1.1%	.7%	1.2%	1.0%	1.7%	.0%	1.1%
Environmental chemistry	536	17	1	9	14	2	579
Row Percent	92.5%	2.9%	.2%	1.6%	2.4%	.3%	100.0%
Column Percent	6.2%	11.3%	.7%	9.2%	11.6%	7.6%	6.3%
Inorganic chemistry	350	8	11	4	2	0	375
Row Percent	93.3%	2.1%	3.0%	.9%	.6%	.0%	100.0%
Column Percent	4.0%	5.3%	6.6%	3.5%	1.9%	.0%	4.0%
Materials science	379	8	8	4	1	2	402
Row Percent	94.2%	2.0%	2.0%	1.1%	.3%	.4%	100.0%
Column Percent	4.4%	5.3%	4.7%	4.2%	.9%	6.9%	4.3%
Medicinal/Pharmaceutical	441	4	12	2	9	0	469
Row Percent	94.2%	.9%	2.6%	.4%	2.0%	.0%	100.0%
Column Percent	5.1%	2.6%	7.0%	2.0%	7.9%	.0%	5.1%

Table 7.1.1 Continued

WORK SPECIALTY	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Organic chemistry	897	7	26	7	8	0	945
Row Percent	94.9%	.8%	2.8%	.7%	.8%	.0%	100.0%
Column Percent	10.3%	4.8%	15.3%	6.9%	6.4%	1.0%	10.2%
Physical chemistry	495	8	27	7	6	2	545
Row Percent	90.8%	1.5%	5.0%	1.3%	1.0%	.4%	100.0%
Column Percent	5.7%	5.4%	15.9%	6.9%	4.7%	7.6%	5.9%
Polymer chemistry	861	13	11	8	11	2	905
Row Percent	95.1%	1.5%	1.2%	.9%	1.2%	.2%	100.0%
Column Percent	9.9%	8.7%	6.2%	7.7%	9.2%	7.6%	9.8%
Other chemical science	237	6	3	2	2	0	250
Row Percent	95.1%	2.3%	1.2%	.8%	.6%	.0%	100.0%
Column Percent	2.7%	3.8%	1.8%	2.0%	1.3%	.0%	2.7%
Business Administration	290	8	1	7	5	1	311
Row Percent	93.3%	2.5%	.3%	2.3%	1.5%	.2%	100.0%
Column Percent	3.3%	5.1%	.6%	7.0%	3.9%	2.0%	3.4%
Other non-chem	495	14	2	6	8	2	526
Row Percent	94.1%	2.7%	.3%	1.1%	1.6%	.3%	100.0%
Column Percent	5.7%	9.3%	.9%	5.5%	7.1%	5.8%	5.7%
No Answer	320	7	8	8	12	12	367
Row Percent	87.3%	1.8%	2.3%	2.2%	3.2%	3.2%	100.0%
Column Percent	3.7%	4.4%	4.8%	8.0%	10.1%	45.0%	4.0%
Total	8696	152	171	102	118	26	9265
Row Percent	93.9%	1.6%	1.8%	1.1%	1.3%	.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.1.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by HIGHEST DEGREE
1988 Survey of ACS Members

HIGHEST DEGREE	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
BS	1830	28	3	20	41	3	1925
Row Percent	95.1%	1.5%	.2%	1.0%	2.1%	.2%	100.0%
Column Percent	24.2%	22.6%	1.9%	25.0%	44.6%	25.0%	24.0%
MS	1307	29	2	12	15	3	1368
Row Percent	95.5%	2.1%	.1%	.9%	1.1%	.2%	100.0%
Column Percent	17.3%	23.4%	1.3%	15.0%	16.3%	25.0%	17.1%
PhD	4413	67	153	48	36	6	4723
Row Percent	93.4%	1.4%	3.2%	1.0%	.8%	.1%	100.0%
Column Percent	58.5%	54.0%	96.8%	60.0%	39.1%	50.0%	58.9%
Total	7550	124	158	80	92	12	8016
Row Percent	94.2%	1.5%	2.0%	1.0%	1.1%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.1.2

EMPLOYMENT STATUS OF MEN CHEMISTS
by HIGHEST DEGREE
1988 Survey of ACS Members

HIGHEST DEGREE	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
BS	1284	15	3	12	30	2	1346
Row Percent	95.4%	1.1%	.2%	.9%	2.2%	.1%	100.0%
Column Percent	21.5%	22.1%	2.7%	20.3%	46.2%	28.6%	21.4%
MS	971	12	1	9	10	2	1005
Row Percent	96.6%	1.2%	.1%	.9%	1.0%	.2%	100.0%
Column Percent	16.2%	17.6%	.9%	15.3%	15.4%	28.6%	16.0%
PhD	3722	41	109	38	25	3	3938
Row Percent	94.5%	1.0%	2.8%	1.0%	.6%	.1%	100.0%
Column Percent	62.3%	60.3%	96.5%	64.4%	38.5%	42.9%	62.6%
Total	5977	68	113	59	65	7	6289
Row Percent	95.0%	1.1%	1.8%	.9%	1.0%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.1.3

EMPLOYMENT STATUS OF WOMEN CHEMISTS
by HIGHEST DEGREE
1988 Survey of ACS Members

HIGHEST DEGREE	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
BS	450	11	0	7	9	1	478
Row Percent	94.1%	2.3%	.0%	1.5%	1.9%	.2%	100.0%
Column Percent	39.1%	25.0%	.0%	41.2%	45.0%	33.3%	37.7%
MS	278	13	1	3	4	1	300
Row Percent	92.7%	4.3%	.3%	1.0%	1.3%	.3%	100.0%
Column Percent	24.2%	29.5%	3.1%	17.6%	20.0%	33.3%	23.7%
PhD	423	20	31	7	7	1	489
Row Percent	86.5%	4.1%	6.3%	1.4%	1.4%	.2%	100.0%
Column Percent	36.8%	45.5%	96.9%	41.2%	35.0%	33.3%	38.6%
Total	1151	44	32	17	20	3	1267
Row Percent	90.8%	3.5%	2.5%	1.3%	1.6%	.2%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.2.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by AGE
1988 Survey of ACS Members

AGE	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
20-24	122	0	0	2	0	0	124
Row Percent	98.4%	.0%	.0%	1.6%	.0%	.0%	100.0%
Column Percent	1.6%	.0%	.0%	2.5%	.0%	.0%	1.5%
25-29	644	6	73	9	3	0	735
Row Percent	87.6%	.8%	9.9%	1.2%	.4%	.0%	100.0%
Column Percent	8.5%	4.7%	46.2%	11.3%	3.2%	.0%	9.1%
30-34	1279	15	60	10	10	1	1375
Row Percent	93.0%	1.1%	4.4%	.7%	.7%	.1%	100.0%
Column Percent	16.9%	11.8%	38.0%	12.5%	10.8%	8.3%	17.1%
35-39	1112	17	15	14	7	1	1166
Row Percent	95.4%	1.5%	1.3%	1.2%	.6%	.1%	100.0%
Column Percent	14.7%	13.4%	9.5%	17.5%	7.5%	8.3%	14.5%
40-44	1113	14	4	9	3	1	1144
Row Percent	97.3%	1.2%	.3%	.8%	.3%	.1%	100.0%
Column Percent	14.7%	11.0%	2.5%	11.3%	3.2%	8.3%	14.2%
45-49	1138	12	1	12	4	0	1167
Row Percent	97.5%	1.0%	.1%	1.0%	.3%	.0%	100.0%
Column Percent	15.0%	9.4%	.6%	15.0%	4.3%	.0%	14.5%
50-54	764	11	1	10	5	1	792
Row Percent	96.5%	1.4%	.1%	1.3%	.6%	.1%	100.0%
Column Percent	10.1%	8.7%	.6%	12.5%	5.4%	8.3%	9.8%
55-59	776	14	3	9	17	3	822
Row Percent	94.4%	1.7%	.4%	1.1%	2.1%	.4%	100.0%
Column Percent	10.2%	11.0%	1.9%	11.3%	18.3%	25.0%	10.2%
60-64	438	21	0	3	28	3	493
Row Percent	88.8%	4.3%	.0%	.6%	5.7%	.6%	100.0%
Column Percent	5.8%	16.5%	.0%	3.8%	30.1%	25.0%	6.1%
65-69	142	15	0	2	15	2	176
Row Percent	80.7%	8.5%	.0%	1.1%	8.5%	1.1%	100.0%
Column Percent	1.9%	11.8%	.0%	2.5%	16.1%	16.7%	2.2%
70 or more	1	2	0	0	1	0	4
Row Percent	25.0%	50.0%	.0%	.0%	25.0%	.0%	100.0%
Column Percent	.0%	1.6%	.0%	.0%	1.1%	.0%	.0%
No Answer	44	0	1	0	0	0	45
Row Percent	97.8%	.0%	2.2%	.0%	.0%	.0%	100.0%
Column Percent	.6%	.0%	.6%	.0%	.0%	.0%	.6%

Table 8.2.1 Continued

AGE	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Total	7573	127	158	80	93	12	8043
Row Percent	94.2%	1.6%	2.0%	1.0%	1.2%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.3.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by RACE-ETHNICITY
1988 Survey of ACS Members

RACE OR ETHNIC GROUP	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
American Indian	34	1	0	0	0	0	35
Row Percent	97.1%	2.9%	.0%	.0%	.0%	.0%	100.0%
Column Percent	.4%	.8%	.0%	.0%	.0%	.0%	.4%
Asian	467	6	28	6	2	1	510
Row Percent	91.6%	1.2%	5.5%	1.2%	.4%	.2%	100.0%
Column Percent	6.2%	4.7%	17.7%	7.5%	2.2%	8.3%	6.3%
Black	84	1	0	1	1	0	87
Row Percent	96.6%	1.1%	.0%	1.1%	1.1%	.0%	100.0%
Column Percent	1.1%	.8%	.0%	1.3%	1.1%	.0%	1.1%
Hispanic	72	0	7	1	2	0	82
Row Percent	87.8%	.0%	8.5%	1.2%	2.4%	.0%	100.0%
Column Percent	1.0%	.0%	4.4%	1.3%	2.2%	.0%	1.0%
White	6838	117	120	70	88	11	7244
Row Percent	94.4%	1.6%	1.7%	1.0%	1.2%	.2%	100.0%
Column Percent	90.3%	92.1%	75.9%	87.5%	94.6%	91.7%	90.1%
Other	38	2	3	2	0	0	45
Row Percent	84.4%	4.4%	6.7%	4.4%	.0%	.0%	100.0%
Column Percent	.5%	1.6%	1.9%	2.5%	.0%	.0%	.6%
No Answer	40	0	0	0	0	0	40
Row Percent	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%
Column Percent	.5%	.0%	.0%	.0%	.0%	.0%	.5%
Total	7573	127	158	80	93	12	8043
Row Percent	94.2%	1.6%	2.0%	1.0%	1.2%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.4.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by CITIZENSHIP
1988 Survey of ACS Members

CITIZENSHIP	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Native	6587	116	108	70	86	9	6976
Row Percent	94.4%	1.7%	1.5%	1.0%	1.2%	.1%	100.0%
Column Percent	87.0%	91.3%	68.4%	87.5%	92.5%	75.0%	86.7%
Naturalized	631	9	5	6	5	1	657
Row Percent	96.0%	1.4%	.8%	.9%	.8%	.2%	100.0%
Column Percent	8.3%	7.1%	3.2%	7.5%	5.4%	8.3%	8.2%
Permanent resident	306	1	9	4	2	1	323
Row Percent	94.7%	.3%	2.8%	1.2%	.6%	.3%	100.0%
Column Percent	4.0%	.8%	5.7%	5.0%	2.2%	8.3%	4.0%
Other visa	40	1	36	0	0	1	78
Row Percent	51.3%	1.3%	46.2%	.0%	.0%	1.3%	100.0%
Column Percent	.5%	.8%	22.8%	.0%	.0%	8.3%	1.0%
No Answer	9	0	0	0	0	0	9
Row Percent	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%
Column Percent	.1%	.0%	.0%	.0%	.0%	.0%	.1%
Total	7573	127	158	80	93	12	8043
Row Percent	94.2%	1.6%	2.0%	1.0%	1.2%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.5.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by EMPLOYER
1988 Survey of ACS Members

EMPLOYER TYPE	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Industry	4679	32	5	50	47	6	4819
Row Percent	97.1%	.7%	.1%	1.0%	1.0%	.1%	100.0%
Column Percent	63.5%	26.2%	3.4%	64.9%	53.4%	50.0%	61.6%
Government	660	10	14	8	12	0	704
Row Percent	93.8%	1.4%	2.0%	1.1%	1.7%	.0%	100.0%
Column Percent	9.0%	8.2%	9.5%	10.4%	13.6%	.0%	9.0%
Other Nonacademic	400	35	6	10	9	3	463
Row Percent	86.4%	7.6%	1.3%	2.2%	1.9%	.6%	100.0%
Column Percent	5.4%	28.7%	4.1%	13.0%	10.2%	25.0%	5.9%
High School	95	2	0	0	0	0	97
Row Percent	97.9%	2.1%	.0%	.0%	.0%	.0%	100.0%
Column Percent	1.3%	1.6%	.0%	.0%	.0%	.0%	1.2%
College or University	1539	43	123	9	20	3	1737
Row Percent	88.6%	2.5%	7.1%	.5%	1.2%	.2%	100.0%
Column Percent	20.9%	35.2%	83.1%	11.7%	22.7%	25.0%	22.2%
Total	7373	122	148	77	88	12	7820
Row Percent	94.3%	1.6%	1.9%	1.0%	1.1%	.2%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.5.2

EMPLOYMENT STATUS OF INDUSTRIAL CHEMISTS
by EMPLOYER
1988 Survey of ACS Members

EMPLOYER	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Non-manufacturing	561	8	1	14	7	0	591
Row Percent	94.9%	1.4%	.2%	2.4%	1.2%	.0%	100.0%
Column Percent	12.0%	25.0%	20.0%	28.0%	14.9%	.0%	12.3%
Basic chemicals	307	2	0	1	2	0	312
Row Percent	98.4%	.6%	.0%	.3%	.6%	.0%	100.0%
Column Percent	6.6%	6.3%	.0%	2.0%	4.3%	.0%	6.5%
Specialty chemicals	682	3	0	5	5	1	696
Row Percent	98.0%	.4%	.0%	.7%	.7%	.1%	100.0%
Column Percent	14.6%	9.4%	.0%	10.0%	10.6%	16.7%	14.4%
Agricultural chemicals	167	0	0	4	2	0	173
Row Percent	96.5%	.0%	.0%	2.3%	1.2%	.0%	100.0%
Column Percent	3.6%	.0%	.0%	8.0%	4.3%	.0%	3.6%
Biochemical products	92	0	0	1	1	0	94
Row Percent	97.9%	.0%	.0%	1.1%	1.1%	.0%	100.0%
Column Percent	2.0%	.0%	.0%	2.0%	2.1%	.0%	2.0%
Coatings	186	0	0	4	4	0	194
Row Percent	95.9%	.0%	.0%	2.1%	2.1%	.0%	100.0%
Column Percent	4.0%	.0%	.0%	8.0%	8.5%	.0%	4.0%
Electronics	175	1	1	3	2	0	182
Row Percent	96.2%	.5%	.5%	1.6%	1.1%	.0%	100.0%
Column Percent	3.7%	3.1%	20.0%	6.0%	4.3%	.0%	3.8%
Food	170	0	0	1	2	0	173
Row Percent	98.3%	.0%	.0%	.6%	1.2%	.0%	100.0%
Column Percent	3.6%	.0%	.0%	2.0%	4.3%	.0%	3.6%
Glass	55	0	0	1	0	0	56
Row Percent	98.2%	.0%	.0%	1.8%	.0%	.0%	100.0%
Column Percent	1.2%	.0%	.0%	2.0%	.0%	.0%	1.2%
Paper	62	0	0	1	0	0	63
Row Percent	98.4%	.0%	.0%	1.6%	.0%	.0%	100.0%
Column Percent	1.3%	.0%	.0%	2.0%	.0%	.0%	1.3%
Petroleum	189	2	0	1	2	1	195
Row Percent	96.9%	1.0%	.0%	.5%	1.0%	.5%	100.0%
Column Percent	4.0%	6.3%	.0%	2.0%	4.3%	16.7%	4.0%
Pharmaceuticals	765	0	3	3	5	1	777
Row Percent	98.5%	.0%	.4%	.4%	.6%	.1%	100.0%
Column Percent	16.3%	.0%	60.0%	6.0%	10.6%	16.7%	16.1%

Table 8.5.2 Continued

EMPLOYER	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Plastics	251	2	0	1	3	2	259
Row Percent	96.9%	.8%	.0%	.4%	1.2%	.8%	100.0%
Column Percent	5.4%	6.3%	.0%	2.0%	6.4%	33.3%	5.4%
Rubber	71	0	0	0	1	0	72
Row Percent	98.6%	.0%	.0%	.0%	1.4%	.0%	100.0%
Column Percent	1.5%	.0%	.0%	.0%	2.1%	.0%	1.5%
Soaps	68	1	0	1	0	0	70
Row Percent	97.1%	1.4%	.0%	1.4%	.0%	.0%	100.0%
Column Percent	1.5%	3.1%	.0%	2.0%	.0%	.0%	1.5%
Steel	24	0	0	0	0	0	24
Row Percent	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%
Column Percent	.5%	.0%	.0%	.0%	.0%	.0%	.5%
Other metals	56	0	0	0	2	0	58
Row Percent	96.6%	.0%	.0%	.0%	3.4%	.0%	100.0%
Column Percent	1.2%	.0%	.0%	.0%	4.3%	.0%	1.2%
Other manufactures	798	13	0	9	9	1	830
Row Percent	96.1%	1.6%	.0%	1.1%	1.1%	.1%	100.0%
Column Percent	17.1%	40.6%	.0%	18.0%	19.1%	16.7%	17.2%
Total	4679	32	5	50	47	6	4819
Row Percent	97.1%	.7%	.1%	1.0%	1.0%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.5.3

EMPLOYMENT STATUS OF ACADEMIC CHEMISTS
by PRINCIPAL EMPLOYER
1988 Survey of ACS Members

INSTITUTION	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Medical school	167	1	23	2	3	0	196
Row Percent	85.2%	.5%	11.7%	1.0%	1.5%	.0%	100.0%
Column Percent	10.9%	2.3%	18.7%	22.2%	15.0%	.0%	11.3%
AA Degree	115	4	0	1	3	0	123
Row Percent	93.5%	3.3%	.0%	.8%	2.4%	.0%	100.0%
Column Percent	7.5%	9.3%	.0%	11.1%	15.0%	.0%	7.1%
BS Degree	368	10	3	3	2	1	387
Row Percent	95.1%	2.6%	.8%	.8%	.5%	.3%	100.0%
Column Percent	23.9%	23.3%	2.4%	33.3%	10.0%	33.3%	22.3%
MS Degree	167	7	3	0	0	1	178
Row Percent	93.8%	3.9%	1.7%	.0%	.0%	.6%	100.0%
Column Percent	10.9%	16.3%	2.4%	.0%	.0%	33.3%	10.2%
PhD Degree	722	21	94	3	12	1	853
Row Percent	84.6%	2.5%	11.0%	.4%	1.4%	.1%	100.0%
Column Percent	46.9%	48.8%	76.4%	33.3%	60.0%	33.3%	49.1%
Total	1539	43	123	9	20	3	1737
Row Percent	88.6%	2.5%	7.1%	.5%	1.2%	.2%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.6.1

EMPLOYMENT STATUS OF NON-ACADEMIC CHEMISTS
by WORK FUNCTION
1988 Survey of ACS Members

WORK FUNCTION	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
R&D Mgt	917	5	0	7	10	2	941
Row Percent	97.4%	.5%	.0%	.7%	1.1%	.2%	100.0%
Column Percent	16.0%	6.5%	.0%	10.3%	14.7%	22.2%	15.7%
Basic research	672	6	22	6	5	2	713
Row Percent	94.2%	.8%	3.1%	.8%	.7%	.3%	100.0%
Column Percent	11.7%	7.8%	88.0%	8.8%	7.4%	22.2%	11.9%
Applied research	1957	16	2	27	18	0	2020
Row Percent	96.9%	.8%	.1%	1.3%	.9%	.0%	100.0%
Column Percent	34.1%	20.8%	8.0%	39.7%	26.5%	.0%	33.7%
General Mgt	523	6	0	5	6	1	541
Row Percent	96.7%	1.1%	.0%	.9%	1.1%	.2%	100.0%
Column Percent	9.1%	7.8%	.0%	7.4%	8.8%	11.1%	9.0%
Marketing	353	2	0	3	3	0	361
Row Percent	97.8%	.6%	.0%	.8%	.8%	.0%	100.0%
Column Percent	6.2%	2.6%	.0%	4.4%	4.4%	.0%	6.0%
Production	495	1	0	6	12	0	514
Row Percent	96.3%	.2%	.0%	1.2%	2.3%	.0%	100.0%
Column Percent	8.6%	1.3%	.0%	8.8%	17.6%	.0%	8.6%
Forensics	279	2	0	7	3	0	291
Row Percent	95.9%	.7%	.0%	2.4%	1.0%	.0%	100.0%
Column Percent	4.9%	2.6%	.0%	10.3%	4.4%	.0%	4.9%
Writing	54	4	0	1	2	1	62
Row Percent	87.1%	6.5%	.0%	1.6%	3.2%	1.6%	100.0%
Column Percent	.9%	5.2%	.0%	1.5%	2.9%	11.1%	1.0%
Chem info services	68	3	0	0	0	0	71
Row Percent	95.8%	4.2%	.0%	.0%	.0%	.0%	100.0%
Column Percent	1.2%	3.9%	.0%	.0%	.0%	.0%	1.2%
Computers	59	1	0	0	0	0	60
Row Percent	98.3%	1.7%	.0%	.0%	.0%	.0%	100.0%
Column Percent	1.0%	1.3%	.0%	.0%	.0%	.0%	1.0%
Consulting	136	24	0	5	2	2	169
Row Percent	80.5%	14.2%	.0%	3.0%	1.2%	1.2%	100.0%
Column Percent	2.4%	31.2%	.0%	7.4%	2.9%	22.2%	2.8%
Other	207	7	0	1	4	1	220
Row Percent	94.1%	3.2%	.0%	.5%	1.8%	.5%	100.0%
Column Percent	3.6%	9.1%	.0%	1.5%	5.9%	11.1%	3.7%

Table 8.6.1 Continued

WORK FUNCTION	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
No Answer	19	0	1	0	3	0	23
Row Percent	82.6%	.0%	4.3%	.0%	13.0%	.0%	100.0%
Column Percent	.3%	.0%	4.0%	.0%	4.4%	.0%	.4%
Total	5739	77	25	68	68	9	5986
Row Percent	95.9%	1.3%	.4%	1.1%	1.1%	.2%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.7.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by SPECIALTY
1988 Survey of ACS Members

WORK SPECIALTY	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Biochemistry	458	3	38	3	4	0	506
Row Percent	90.5%	.6%	7.5%	.6%	.8%	.0%	100.0%
Column Percent	6.0%	2.4%	24.1%	3.8%	4.3%	.0%	6.3%
Biotechnology	171	2	5	2	1	0	181
Row Percent	94.5%	1.1%	2.8%	1.1%	.6%	.0%	100.0%
Column Percent	2.3%	1.6%	3.2%	2.5%	1.1%	.0%	2.3%
General chemistry	406	19	2	5	8	1	441
Row Percent	92.1%	4.3%	.5%	1.1%	1.8%	.2%	100.0%
Column Percent	5.4%	15.0%	1.3%	6.3%	8.6%	8.3%	5.5%
Agricultural chemistry	266	2	1	3	3	0	275
Row Percent	96.7%	.7%	.4%	1.1%	1.1%	.0%	100.0%
Column Percent	3.5%	1.6%	.6%	3.8%	3.2%	.0%	3.4%
Analytical chemistry	1427	14	9	15	13	1	1479
Row Percent	96.5%	.9%	.6%	1.0%	.9%	.1%	100.0%
Column Percent	18.8%	11.0%	5.7%	18.8%	14.0%	8.3%	18.4%
Clinical chemistry	99	1	2	1	2	0	105
Row Percent	94.3%	1.0%	1.9%	1.0%	1.9%	.0%	100.0%
Column Percent	1.3%	.8%	1.3%	1.3%	2.2%	.0%	1.3%
Environmental chemistry	535	16	2	9	14	2	578
Row Percent	92.6%	2.8%	.3%	1.6%	2.4%	.3%	100.0%
Column Percent	7.1%	12.6%	1.3%	11.3%	15.1%	16.7%	7.2%
Inorganic chemistry	352	8	11	4	3	0	378
Row Percent	93.1%	2.1%	2.9%	1.1%	.8%	.0%	100.0%
Column Percent	4.6%	6.3%	7.0%	5.0%	3.2%	.0%	4.7%
Materials science	387	8	8	4	2	2	411
Row Percent	94.2%	1.9%	1.9%	1.0%	.5%	.5%	100.0%
Column Percent	5.1%	6.3%	5.1%	5.0%	2.2%	16.7%	5.1%
Medicinal/Pharmaceutical	442	4	12	2	9	0	469
Row Percent	94.2%	.9%	2.6%	.4%	1.9%	.0%	100.0%
Column Percent	5.8%	3.1%	7.6%	2.5%	9.7%	.0%	5.8%
Organic chemistry	897	8	26	7	8	1	947
Row Percent	94.7%	.8%	2.7%	.7%	.8%	.1%	100.0%
Column Percent	11.8%	6.3%	16.5%	8.8%	8.6%	8.3%	11.8%

Table 8.7.1 Continued

WORK SPECIALTY	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Physical chemistry	490	8	28	7	5	2	540
Row Percent	90.7%	1.5%	5.2%	1.3%	.9%	.4%	100.0%
Column Percent	6.5%	6.3%	17.7%	8.8%	5.4%	16.7%	6.7%
Polymer chemistry	868	12	11	8	13	2	914
Row Percent	95.0%	1.3%	1.2%	.9%	1.4%	.2%	100.0%
Column Percent	11.5%	9.4%	7.0%	10.0%	14.0%	16.7%	11.4%
Other chemical science	241	6	3	2	2	0	254
Row Percent	94.9%	2.4%	1.2%	.8%	.8%	.0%	100.0%
Column Percent	3.2%	4.7%	1.9%	2.5%	2.2%	.0%	3.2%
Business Administration	186	5	0	4	3	0	198
Row Percent	93.9%	2.5%	.0%	2.0%	1.5%	.0%	100.0%
Column Percent	2.5%	3.9%	.0%	5.0%	3.2%	.0%	2.5%
Other non-chem	348	11	0	4	3	1	367
Row Percent	94.8%	3.0%	.0%	1.1%	.8%	.3%	100.0%
Column Percent	4.6%	8.7%	.0%	5.0%	3.2%	8.3%	4.6%
Total	7573	127	158	80	93	12	8043
Row Percent	94.2%	1.6%	2.0%	1.0%	1.2%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8.8.1

EMPLOYMENT STATUS OF ALL CHEMISTS
by GEOGRAPHIC REGION
1988 Survey of ACS Members

GEOGRAPHIC REGION	EMPLOYMENT STATUS						Total
	Full-time	Part-time	Postdoc	Seeking empl	Not seeking empl	No Answer	
Pacific	861	23	30	11	10	0	935
Row Percent	92.1%	2.5%	3.2%	1.2%	1.1%	.0%	100.0%
Column Percent	11.4%	18.1%	19.0%	13.8%	10.8%	.0%	11.6%
Mountain	280	4	12	4	6	2	308
Row Percent	90.9%	1.3%	3.9%	1.3%	1.9%	.6%	100.0%
Column Percent	3.7%	3.1%	7.6%	5.0%	6.5%	16.7%	3.8%
West North Central	487	11	12	7	6	0	523
Row Percent	93.1%	2.1%	2.3%	1.3%	1.1%	.0%	100.0%
Column Percent	6.4%	8.7%	7.6%	8.8%	6.5%	.0%	6.5%
West South Central	542	9	17	4	7	2	581
Row Percent	93.3%	1.5%	2.9%	.7%	1.2%	.3%	100.0%
Column Percent	7.2%	7.1%	10.8%	5.0%	7.5%	16.7%	7.2%
East North Central	1548	18	23	9	15	3	1616
Row Percent	95.8%	1.1%	1.4%	.6%	.9%	.2%	100.0%
Column Percent	20.4%	14.2%	14.6%	11.3%	16.1%	25.0%	20.1%
East South Central	243	2	5	1	7	1	259
Row Percent	93.8%	.8%	1.9%	.4%	2.7%	.4%	100.0%
Column Percent	3.2%	1.6%	3.2%	1.3%	7.5%	8.3%	3.2%
Middle Atlantic	1818	28	29	24	18	2	1919
Row Percent	94.7%	1.5%	1.5%	1.3%	.9%	.1%	100.0%
Column Percent	24.0%	22.0%	18.4%	30.0%	19.4%	16.7%	23.9%
South Atlantic	1219	19	10	11	16	1	1276
Row Percent	95.5%	1.5%	.8%	.9%	1.3%	.1%	100.0%
Column Percent	16.1%	15.0%	6.3%	13.8%	17.2%	8.3%	15.9%
New England	561	12	18	9	8	0	608
Row Percent	92.3%	2.0%	3.0%	1.5%	1.3%	.0%	100.0%
Column Percent	7.4%	9.4%	11.4%	11.3%	8.6%	.0%	7.6%
No Answer	14	1	2	0	0	1	19
Row Percent	76.5%	5.9%	11.8%	.0%	.0%	5.9%	100.0%
Column Percent	.2%	.8%	1.3%	.0%	.0%	8.3%	.2%
Total	7573	127	158	80	93	12	8043
Row Percent	94.2%	1.6%	2.0%	1.0%	1.2%	.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.1.1

LENGTH OF UNEMPLOYMENT OF CHEMISTS UNEMPLOYED on MARCH 1, 1988
by HIGHEST DEGREE
1988 Survey of ACS Members

HIGHEST DEGREE	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
BS	1	7	7	2	3	0	20
Row Percent	5.0%	35.0%	35.0%	10.0%	15.0%	.0%	100.0%
Column Percent	6.7%	33.3%	38.9%	25.0%	17.6%	.0%	25.0%
MS	3	1	3	1	4	0	12
Row Percent	25.0%	8.3%	25.0%	8.3%	33.3%	.0%	100.0%
Column Percent	20.0%	4.8%	16.7%	12.5%	23.5%	.0%	15.0%
PhD	11	13	8	5	10	1	48
Row Percent	22.9%	27.1%	16.7%	10.4%	20.8%	2.1%	100.0%
Column Percent	73.3%	61.9%	44.4%	62.5%	58.8%	100.0%	60.0%
Total	15	21	18	8	17	1	80
Row Percent	18.8%	26.3%	22.5%	10.0%	21.3%	1.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.1.2

LENGTH OF UNEMPLOYMENT OF MEN CHEMISTS UNEMPLOYED on MARCH 1, 1988
by HIGHEST DEGREE and SEX
1988 Survey of ACS Members

HIGHEST DEGREE	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
BS	1	4	4	0	3	0	12
Row Percent	8.3%	33.3%	33.3%	.0%	25.0%	.0%	100.0%
Column Percent	7.7%	25.0%	33.3%	.0%	21.4%	.0%	20.3%
MS	3	1	2	0	3	0	9
Row Percent	33.3%	11.1%	22.2%	.0%	33.3%	.0%	100.0%
Column Percent	23.1%	6.3%	16.7%	.0%	21.4%	.0%	15.3%
PhD	9	11	6	4	8	0	38
Row Percent	23.7%	28.9%	15.8%	10.5%	21.1%	.0%	100.0%
Column Percent	69.2%	68.8%	50.0%	100.0%	57.1%	.0%	64.4%
Total	13	16	12	4	14	0	59
Row Percent	22.0%	27.1%	20.3%	6.8%	23.7%	.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	.0%	100.0%

Table 9.1.3

LENGTH OF UNEMPLOYMENT OF WOMEN CHEMISTS UNEMPLOYED on MARCH 1, 1988
by HIGHEST DEGREE and SEX
1988 Survey of ACS Members

HIGHEST DEGREE	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
BS	0	3	2	2	0	0	7
Row Percent	.0%	42.8%	28.6%	28.6%	.0%	.0%	100.0%
Column Percent	.0%	60.0%	50.0%	50.0%	.0%	.0%	41.2%
MS	0	0	1	1	1	0	3
Row Percent	.0%	.0%	33.3%	33.3%	33.3%	.0%	100.0%
Column Percent	.0%	.0%	25.0%	25.0%	100.0%	.0%	17.6%
PhD	2	2	1	1	0	1	7
Row Percent	28.6%	28.6%	14.3%	14.3%	.0%	14.3%	100.0%
Column Percent	100.0%	40.0%	25.0%	25.0%	.0%	100.0%	41.2%
Total	2	5	4	4	1	1	17
Row Percent	11.8%	29.4%	23.5%	23.5%	5.9%	5.9%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.2.1

LENGTH OF UNEMPLOYMENT OF CHEMISTS UNEMPLOYED on MARCH 1, 1988
by AGE
1988 Survey of ACS Members

AGE	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
20-24	0	1	1	0	0	0	2
Row Percent	.0%	50.0%	50.0%	.0%	.0%	.0%	100.0%
Column Percent	.0%	4.8%	5.6%	.0%	.0%	.0%	2.5%
25-29	1	5	0	0	2	1	9
Row Percent	11.1%	55.6%	.0%	.0%	22.2%	11.1%	100.0%
Column Percent	6.7%	23.8%	.0%	.0%	11.8%	100.0%	11.3%
30-34	3	4	2	1	0	0	10
Row Percent	30.0%	40.0%	20.0%	10.0%	.0%	.0%	100.0%
Column Percent	20.0%	19.0%	11.1%	12.5%	.0%	.0%	12.5%
35-39	1	3	5	3	2	0	14
Row Percent	7.1%	21.4%	35.7%	21.4%	14.3%	.0%	100.0%
Column Percent	6.7%	14.3%	27.8%	37.5%	11.8%	.0%	17.5%
40-44	3	1	2	1	2	0	9
Row Percent	33.3%	11.1%	22.2%	11.1%	22.2%	.0%	100.0%
Column Percent	20.0%	4.8%	11.1%	12.5%	11.8%	.0%	11.3%
45-49	3	2	2	1	4	0	12
Row Percent	25.0%	16.7%	16.7%	8.3%	33.3%	.0%	100.0%
Column Percent	20.0%	9.5%	11.1%	12.5%	23.5%	.0%	15.0%
40-54	2	4	1	1	2	0	10
Row Percent	20.0%	40.0%	10.0%	10.0%	20.0%	.0%	100.0%
Column Percent	13.3%	19.0%	5.6%	12.5%	11.8%	.0%	12.5%
55-59	1	1	2	1	4	0	9
Row Percent	11.1%	11.1%	22.2%	11.1%	44.4%	.0%	100.0%
Column Percent	6.7%	4.8%	11.1%	12.5%	23.5%	.0%	11.3%
60-64	0	0	2	0	1	0	3
Row Percent	.0%	.0%	66.7%	.0%	33.3%	.0%	100.0%
Column Percent	.0%	.0%	11.1%	.0%	5.9%	.0%	3.8%
65-69	1	0	1	0	0	0	2
Row Percent	50.0%	.0%	50.0%	.0%	.0%	.0%	100.0%
Column Percent	6.7%	.0%	5.6%	.0%	.0%	.0%	2.5%
Total	15	21	18	8	17	1	80
Row Percent	18.8%	26.3%	22.5%	10.0%	21.3%	1.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.3.1

LENGTH OF UNEMPLOYMENT OF CHEMISTS UNEMPLOYED on MARCH 1, 1988
by WORK FUNCTION
1988 Survey of ACS Members

WORK FUNCTION	LENGTH OF UNEMPLOYMENT					Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	
R&D Mgt	1	2	2	2	0	7
Row Percent	14.3%	28.6%	28.6%	28.6%	.0%	100.0%
Column Percent	7.1%	11.1%	11.1%	50.0%	.0%	10.3%
Basic research	2	3	1	0	0	6
Row Percent	33.3%	50.0%	16.7%	.0%	.0%	100.0%
Column Percent	14.3%	16.7%	5.6%	.0%	.0%	8.8%
Applied research	5	9	6	0	7	27
Row Percent	18.5%	33.3%	22.2%	.0%	25.9%	100.0%
Column Percent	35.7%	50.0%	33.3%	.0%	50.0%	39.7%
General Mgt	2	0	2	1	0	5
Row Percent	40.0%	.0%	40.0%	20.0%	.0%	100.0%
Column Percent	14.3%	.0%	11.1%	25.0%	.0%	7.4%
Marketing	1	0	1	0	1	3
Row Percent	33.3%	.0%	33.3%	.0%	33.3%	100.0%
Column Percent	7.1%	.0%	5.6%	.0%	7.1%	4.4%
Production	1	2	3	0	0	6
Row Percent	16.7%	33.3%	50.0%	.0%	.0%	100.0%
Column Percent	7.1%	11.1%	16.7%	.0%	.0%	8.8%
Forensics	1	1	2	1	2	7
Row Percent	14.3%	14.3%	28.6%	14.3%	28.6%	100.0%
Column Percent	7.1%	5.6%	11.1%	25.0%	14.3%	10.3%
Writing	0	1	0	0	0	1
Row Percent	.0%	100.0%	.0%	.0%	.0%	100.0%
Column Percent	.0%	5.6%	.0%	.0%	.0%	1.5%
Consulting	0	0	1	0	4	5
Row Percent	.0%	.0%	20.0%	.0%	80.0%	100.0%
Column Percent	.0%	.0%	5.6%	.0%	28.6%	7.4%
Other	1	0	0	0	0	1
Row Percent	100.0%	.0%	.0%	.0%	.0%	100.0%
Column Percent	7.1%	.0%	.0%	.0%	.0%	1.5%
Total	14	18	18	4	14	68
Row Percent	20.6%	26.5%	26.5%	5.9%	20.6%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.4.1

LENGTH OF UNEMPLOYMENT OF CHEMISTS UNEMPLOYED on MARCH 1, 1988
by SPECIALTY
1988 Survey of ACS Members

WORK SPECIALTY	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
Biochemistry	0	2	1	0	0	0	3
Row Percent	.0%	66.7%	33.3%	.0%	.0%	.0%	100.0%
Column Percent	.0%	9.5%	5.6%	.0%	.0%	.0%	3.8%
Biotechnology	1	1	0	0	0	0	2
Row Percent	50.0%	50.0%	.0%	.0%	.0%	.0%	100.0%
Column Percent	6.7%	4.8%	.0%	.0%	.0%	.0%	2.5%
General chemistry	0	2	1	2	0	0	5
Row Percent	.0%	40.0%	20.0%	40.0%	.0%	.0%	100.0%
Column Percent	.0%	9.5%	5.6%	25.0%	.0%	.0%	6.3%
Agricultural chemistry	1	0	0	1	1	0	3
Row Percent	33.3%	.0%	.0%	33.3%	33.3%	.0%	100.0%
Column Percent	6.7%	.0%	.0%	12.5%	5.9%	.0%	3.8%
Analytical chemistry	4	3	5	0	3	0	15
Row Percent	26.7%	20.0%	33.3%	.0%	20.0%	.0%	100.0%
Column Percent	26.7%	14.3%	27.8%	.0%	17.6%	.0%	18.8%
Clinical chemistry	0	0	0	0	1	0	1
Row Percent	.0%	.0%	.0%	.0%	100.0%	.0%	100.0%
Column Percent	.0%	.0%	.0%	.0%	5.9%	.0%	1.3%
Environmental chemistry	0	1	5	1	2	0	9
Row Percent	.0%	11.1%	55.6%	11.1%	22.2%	.0%	100.0%
Column Percent	.0%	4.8%	27.8%	12.5%	11.8%	.0%	11.3%
Inorganic chemistry	0	2	1	1	0	0	4
Row Percent	.0%	50.0%	25.0%	25.0%	.0%	.0%	100.0%
Column Percent	.0%	9.5%	5.6%	12.5%	.0%	.0%	5.0%
Materials science	0	2	1	0	1	0	4
Row Percent	.0%	50.0%	25.0%	.0%	25.0%	.0%	100.0%
Column Percent	.0%	9.5%	5.6%	.0%	5.9%	.0%	5.0%
Medicinal/Pharmaceutical	1	0	1	0	0	0	2
Row Percent	50.0%	.0%	50.0%	.0%	.0%	.0%	100.0%
Column Percent	6.7%	.0%	5.6%	.0%	.0%	.0%	2.5%
Organic chemistry	1	2	0	1	2	1	7
Row Percent	14.3%	28.6%	.0%	14.3%	28.6%	14.3%	100.0%
Column Percent	6.7%	9.5%	.0%	12.5%	11.8%	100.0%	8.8%

Table 9.4.1 Continued

WORK SPECIALTY	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
Physical chemistry	1	2	2	0	2	0	7
Row Percent	14.3%	28.6%	28.6%	.0%	28.6%	.0%	100.0%
Column Percent	6.7%	9.5%	11.1%	.0%	11.8%	.0%	8.8%
Polymer chemistry	3	4	0	0	1	0	8
Row Percent	37.5%	50.0%	.0%	.0%	12.5%	.0%	100.0%
Column Percent	20.0%	19.0%	.0%	.0%	5.9%	.0%	10.0%
Other chemical science	1	0	0	0	1	0	2
Row Percent	50.0%	.0%	.0%	.0%	50.0%	.0%	100.0%
Column Percent	6.7%	.0%	.0%	.0%	5.9%	.0%	2.5%
Business Administration	1	0	0	2	1	0	4
Row Percent	25.0%	.0%	.0%	50.0%	25.0%	.0%	100.0%
Column Percent	6.7%	.0%	.0%	25.0%	5.9%	.0%	5.0%
Other non-chem	1	0	1	0	2	0	4
Row Percent	25.0%	.0%	25.0%	.0%	50.0%	.0%	100.0%
Column Percent	6.7%	.0%	5.6%	.0%	11.8%	.0%	5.0%
Total	15	21	18	8	17	1	80
Row Percent	18.8%	26.3%	22.5%	10.0%	21.3%	1.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.5.1

LENGTH OF UNEMPLOYMENT OF CHEMISTS UNEMPLOYED on MARCH 1, 1988
by GEOGRAPHIC REGION
1988 Survey of ACS Members

GEOGRAPHIC REGION	LENGTH OF UNEMPLOYMENT						Total
	Less than 1 mo	1-3 mos	4-6 mos	7-12 mos	More than 1 yr	No Answer	
Pacific	2	4	1	2	2	0	11
Row Percent	18.2%	36.4%	9.1%	18.2%	18.2%	.0%	100.0%
Column Percent	13.3%	19.0%	5.6%	25.0%	11.8%	.0%	13.9%
Mountain	0	0	4	0	0	0	4
Row Percent	.0%	.0%	100.0%	.0%	.0%	.0%	100.0%
Column Percent	.0%	.0%	22.2%	.0%	.0%	.0%	5.1%
West North Central	2	1	0	0	4	0	7
Row Percent	28.6%	14.3%	.0%	.0%	57.1%	.0%	100.0%
Column Percent	13.3%	4.8%	.0%	.0%	23.5%	.0%	8.9%
West South Central	3	0	0	0	1	0	4
Row Percent	75.0%	.0%	.0%	.0%	25.0%	.0%	100.0%
Column Percent	20.0%	.0%	.0%	.0%	5.9%	.0%	5.1%
East North Central	2	4	2	1	0	0	9
Row Percent	22.2%	44.4%	22.2%	11.1%	.0%	.0%	100.0%
Column Percent	13.3%	19.0%	11.1%	12.5%	.0%	.0%	11.4%
East South Central	0	0	0	0	1	0	1
Row Percent	.0%	.0%	.0%	.0%	100.0%	.0%	100.0%
Column Percent	.0%	.0%	.0%	.0%	5.9%	.0%	1.3%
Middle Atlantic	3	6	9	2	3	1	24
Row Percent	12.5%	25.0%	37.5%	8.3%	12.5%	4.2%	100.0%
Column Percent	20.0%	28.6%	50.0%	25.0%	17.6%	100.9%	30.4%
South Atlantic	2	3	2	2	2	0	11
Row Percent	18.2%	27.3%	18.2%	18.2%	18.2%	.0%	100.0%
Column Percent	13.3%	14.3%	11.1%	25.0%	11.8%	.0%	13.9%
New England	1	3	0	1	4	0	9
Row Percent	11.1%	33.3%	.0%	11.1%	44.4%	.0%	100.0%
Column Percent	6.7%	14.3%	.0%	12.5%	23.5%	.0%	11.4%
Total	15	21	18	8	17	1	80
Row Percent	18.8%	26.2%	22.5%	10.0%	21.2%	1.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 10.1.1

ALL RESPONDENTS
by SEX and HIGHEST DEGREE
1988 Survey of ACS Members

SEX	HIGHEST DEGREE			Total
	BS	MS	PhD	
Men	1596	1304	4368	7267
Row Percent	22.0%	17.9%	60.1%	100.0%
Column Percent	71.5%	75.0%	83.1%	78.8%
Women	512	349	538	1399
Row Percent	36.6%	24.9%	38.5%	100.0%
Column Percent	22.9%	20.1%	10.2%	15.2%
No Answer	124	85	348	558
Row Percent	22.3%	15.3%	62.4%	100.0%
Column Percent	5.6%	4.9%	6.6%	6.0%
Total	2231	1738	5254	9223
Row Percent	24.2%	18.8%	57.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.2.1

ALL RESPONDENTS
by AGE and HIGHEST DEGREE
1988 Survey of ACS Members

AGE	HIGHEST DEGREE			Total
	BS	MS	PhD	
20-29	562	167	244	972
Row Percent	57.8%	17.1%	25.1%	100.0%
Column Percent	25.2%	9.6%	4.6%	10.5%
30-39	693	576	1576	2845
Row Percent	24.3%	20.2%	55.4%	100.0%
Column Percent	31.0%	33.1%	30.0%	30.8%
40-49	398	473	1733	2604
Row Percent	15.3%	18.2%	66.6%	100.0%
Column Percent	17.8%	27.2%	33.0%	28.2%
50-59	351	358	1180	1890
Row Percent	18.6%	19.0%	62.5%	100.0%
Column Percent	15.7%	20.6%	22.5%	20.5%
60-69	214	158	480	852
Row Percent	25.2%	18.5%	56.3%	100.0%
Column Percent	9.6%	9.1%	9.1%	9.2%
70 or more	1	0	4	5
Row Percent	20.0%	.0%	80.0%	100.0%
Column Percent	.0%	.0%	.1%	.1%
No Answer	13	6	37	56
Row Percent	23.0%	11.4%	65.7%	100.0%
Column Percent	.6%	.4%	.7%	.6%
Total	2231	1738	5254	9223
Row Percent	24.2%	18.8%	57.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.2.2

MEN RESPONDENTS
by AGE and HIGHEST DEGREE
1988 Survey of ACS Members

AGE	HIGHEST DEGREE			Total
	BS	MS	PhD	
20-29	321	102	163	586
Row Percent	54.7%	17.4%	27.9%	100.0%
Column Percent	20.1%	7.8%	3.7%	8.1%
30-39	477	409	1278	2165
Row Percent	22.0%	18.9%	59.0%	100.0%
Column Percent	29.9%	31.4%	29.3%	29.8%
40-49	302	365	1467	2135
Row Percent	14.1%	17.1%	68.7%	100.0%
Column Percent	18.9%	28.0%	33.6%	29.4%
50-59	300	289	1019	1608
Row Percent	18.6%	18.0%	63.4%	100.0%
Column Percent	18.8%	22.2%	23.3%	22.1%
60-69	183	133	409	724
Row Percent	25.2%	18.3%	56.4%	100.0%
Column Percent	11.5%	10.2%	9.4%	10.0%
70 or more	1	0	4	4
Row Percent	18.6%	.0%	81.4%	100.0%
Column Percent	.1%	.0%	.1%	.1%
No Answer	12	5	27	44
Row Percent	26.9%	11.6%	61.6%	100.0%
Column Percent	.7%	.4%	.6%	.6%
Total	1596	1303	4367	7266
Row Percent	22.0%	17.9%	60.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.2.3

WOMEN RESPONDENTS
by AGE and HIGHEST DEGREE
1988 Survey of ACS Members

AGE	HIGHEST DEGREE			Total
	BS	MS	PhD	
20-29	219	59	70	348
Row Percent	63.0%	16.9%	20.1%	100.0%
Column Percent	42.8%	16.9%	13.0%	24.9%
30-39	182	142	219	543
Row Percent	33.5%	26.1%	40.3%	100.0%
Column Percent	35.6%	40.7%	40.7%	38.8%
40-49	72	90	154	316
Row Percent	22.6%	28.5%	48.8%	100.0%
Column Percent	14.0%	25.9%	28.7%	22.6%
50-59	30	46	71	147
Row Percent	20.2%	31.3%	48.5%	100.0%
Column Percent	5.8%	13.1%	13.2%	10.5%
60-69	9	11	21	41
Row Percent	22.7%	27.0%	50.3%	100.0%
Column Percent	1.8%	3.2%	3.8%	2.9%
No Answer	0	1	3	4
Row Percent	.0%	23.4%	76.6%	100.0%
Column Percent	.0%	.3%	.6%	.3%
Total	512	349	538	1399
Row Percent	36.6%	24.9%	38.5%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.3.1

ALL RESPONDENTS
by WORK SPECIALTY and HIGHEST DEGREE
1988 Survey of ACS Members

WORK SPECIALTY	HIGHEST DEGREE BS	MS	PhD	Total
Chemical engineering	160	157	292	609
Row Percent	26.3%	25.8%	47.9%	100.0%
Column Percent	7.2%	9.1%	5.6%	6.6%
Biochemistry	41	34	432	507
Row Percent	8.0%	6.8%	85.2%	100.0%
Column Percent	1.8%	2.0%	8.2%	5.5%
Biotechnology	18	29	132	179
Row Percent	9.8%	16.3%	73.9%	100.0%
Column Percent	.8%	1.7%	2.5%	1.9%
General chemistry	107	146	185	438
Row Percent	24.5%	33.3%	42.2%	100.0%
Column Percent	4.8%	8.4%	3.5%	4.8%
Agricultural chemistry	66	51	158	275
Row Percent	24.1%	18.6%	57.3%	100.0%
Column Percent	3.0%	2.9%	3.0%	3.0%
Analytical chemistry	543	315	608	1466
Row Percent	37.1%	21.5%	41.5%	100.0%
Column Percent	24.3%	18.1%	11.6%	15.9%
Clinical chemistry	17	15	73	105
Row Percent	16.1%	13.9%	70.0%	100.0%
Column Percent	.8%	.8%	1.4%	1.1%
Environmental chemistry	237	126	214	577
Row Percent	41.0%	21.8%	37.1%	100.0%
Column Percent	10.6%	7.2%	4.1%	6.3%
Inorganic chemistry	48	41	286	375
Row Percent	12.8%	11.0%	76.2%	100.0%
Column Percent	2.2%	2.4%	5.4%	4.1%
Materials science	99	62	240	402
Row Percent	24.7%	15.5%	59.8%	100.0%
Column Percent	4.5%	3.6%	4.6%	4.4%
Medicinal/Pharmaceutical	86	83	298	467
Row Percent	18.4%	17.7%	63.9%	100.0%
Column Percent	3.8%	4.8%	5.7%	5.1%

Table 10.3.1 Continued

WORK SPECIALTY	HIGHEST DEGREE BS	MS	PhD	Total
Organic chemistry	156	99	688	943
Row Percent	16.6%	10.5%	72.9%	100.0%
Column Percent	7.0%	5.7%	13.1%	10.2%
Physical chemistry	23	48	474	545
Row Percent	4.2%	8.8%	87.0%	100.0%
Column Percent	1.0%	2.8%	9.0%	5.9%
Polymer chemistry	237	155	508	899
Row Percent	26.3%	17.2%	56.5%	100.0%
Column Percent	10.6%	8.9%	9.7%	9.7%
Other chemical science	64	53	131	248
Row Percent	25.8%	21.3%	52.9%	100.0%
Column Percent	2.9%	3.0%	2.5%	2.7%
Business Administration	83	106	120	309
Row Percent	26.9%	34.2%	38.9%	100.0%
Column Percent	3.7%	6.1%	2.3%	3.4%
Other non-chem	140	144	240	524
Row Percent	26.7%	27.5%	45.8%	100.0%
Column Percent	6.3%	8.3%	4.6%	5.7%
No Answer	107	74	175	356
Row Percent	30.0%	20.9%	49.1%	100.0%
Column Percent	4.8%	4.3%	3.3%	3.9%
Total	2231	1738	5254	9223
Row Percent	24.2%	18.8%	57.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.4.1

ALL RESPONDENTS
by RACE/ETHNICITY and HIGHEST DEGREE
1988 Survey of ACS Members

RACE/ETHNICITY	HIGHEST DEGREE BS	MS	PhD	Total
American Indian	17	2	23	42
Row Percent	39.3%	5.1%	55.5%	100.0%
Column Percent	.7%	.1%	.4%	.5%
Asian	65	85	440	589
Row Percent	11.0%	14.4%	74.6%	100.0%
Column Percent	2.9%	4.9%	8.4%	6.4%
Black	43	21	37	101
Row Percent	42.6%	20.5%	36.9%	100.0%
Column Percent	1.9%	1.2%	.7%	1.1%
Hispanic	32	20	42	94
Row Percent	33.7%	21.2%	45.1%	100.0%
Column Percent	1.4%	1.1%	.8%	1.0%
White	2052	1589	4653	8294
Row Percent	24.7%	19.2%	56.1%	100.0%
Column Percent	92.0%	91.4%	88.6%	89.9%
Other	15	12	30	57
Row Percent	26.3%	21.3%	52.4%	100.0%
Column Percent	.7%	.7%	.6%	.6%
No Answer	9	9	28	46
Row Percent	18.8%	20.2%	61.1%	100.0%
Column Percent	.4%	.5%	.5%	.5%
Total	2231	1738	5254	9223
Row Percent	24.2%	18.8%	57.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.5.1

ALL RESPONDENTS
by RACE/ETHNICITY and SEX
1988 Survey of ACS Members

RACE/ETHNICITY	SEX			Total
	Men	Women	No Answer	
American Indian	30	6	7	42
Row Percent	70.2%	14.3%	15.6%	100.0%
Column Percent	.4%	.4%	1.1%	.5%
Asian	438	105	49	592
Row Percent	74.0%	17.8%	8.2%	100.0%
Column Percent	6.0%	7.5%	8.5%	6.4%
Black	74	23	6	103
Row Percent	72.1%	22.5%	5.4%	100.0%
Column Percent	1.0%	1.6%	1.0%	1.1%
Hispanic	67	22	5	94
Row Percent	71.4%	23.7%	4.9%	100.0%
Column Percent	.9%	1.6%	.8%	1.0%
White	6597	1237	486	8320
Row Percent	79.3%	14.9%	5.8%	100.0%
Column Percent	90.5%	88.1%	85.4%	89.8%
Other	48	7	2	57
Row Percent	84.6%	11.4%	4.0%	100.0%
Column Percent	.7%	.5%	.4%	.6%
No Answer	37	3	16	56
Row Percent	66.4%	5.8%	27.8%	100.0%
Column Percent	.5%	.2%	2.8%	.6%
Total	7291	1404	570	9265
Row Percent	78.7%	15.2%	6.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.6.1

ALL RESPONDENTS
by RACE/ETHNICITY and SEX
1988 Survey of ACS Members

RACE/ETHNICITY	CITIZENSHIP OR VISA STATUS					Total
	Native	Naturalized	Perm Res	Other visa	No Answer	
American Indian	39	2	1	0	0	42
Row Percent	92.9%	4.8%	2.4%	.0%	.0%	100.0%
Column Percent	.5%	.3%	.3%	.0%	.0%	.5%
Asian	93	306	156	38	0	592
Row Percent	15.8%	51.6%	26.3%	6.3%	.0%	100.0%
Column Percent	1.2%	39.9%	41.4%	43.0%	.0%	6.4%
Black	85	9	6	3	0	103
Row Percent	83.1%	8.6%	5.4%	2.9%	.0%	100.0%
Column Percent	1.1%	1.1%	1.5%	3.4%	.0%	1.1%
Hispanic	52	26	10	5	1	94
Row Percent	55.6%	28.0%	10.5%	4.8%	1.1%	100.0%
Column Percent	.7%	3.4%	2.6%	5.2%	5.3%	1.0%
White	7677	404	192	40	6	8320
Row Percent	92.3%	4.9%	2.3%	.5%	.1%	100.0%
Column Percent	95.8%	52.7%	51.2%	46.3%	31.6%	89.8%
Other	30	16	9	1	1	57
Row Percent	53.2%	28.3%	15.9%	.9%	1.7%	100.0%
Column Percent	.4%	2.1%	2.4%	.6%	5.3%	.6%
No Answer	38	4	3	1	11	56
Row Percent	67.2%	6.3%	4.5%	2.2%	19.8%	100.0%
Column Percent	.5%	.5%	.7%	1.5%	57.9%	.6%
Total	8015	767	376	87	19	9264
Row Percent	86.5%	8.3%	4.1%	.9%	.2%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 10.7.1

ALL RESPONDENTS
by GEOGRAPHIC REGION and AGE
1988 Survey of ACS Members

GEOGRAPHIC REGION	AGE							Total
	20-29	30-39	40-49	50-59	60-69	70 or more	No Answer	
Pacific	109	372	305	208	105	0	4	1104
Row Percent	9.8%	33.7%	27.6%	18.9%	9.5%	.0%	.4%	100.0%
Column Percent	11.2%	13.1%	11.7%	10.9%	12.3%	.0%	6.5%	11.9%
Mountain	23	117	109	66	30	0	4	349
Row Percent	6.6%	33.5%	31.2%	19.0%	8.7%	.0%	1.1%	100.0%
Column Percent	2.4%	4.1%	4.2%	3.5%	3.5%	.0%	6.1%	3.8%
West North Central	59	197	168	109	53	0	1	587
Row Percent	10.0%	33.6%	28.5%	18.6%	9.1%	.0%	.2%	100.0%
Column Percent	6.0%	6.9%	6.4%	5.7%	6.2%	.0%	1.5%	6.3%
West South Central	71	214	207	144	55	0	3	694
Row Percent	10.2%	30.9%	29.8%	20.8%	8.0%	.0%	.4%	100.0%
Column Percent	7.3%	7.5%	7.9%	7.6%	6.4%	.0%	3.9%	7.5%
East North Central	205	569	545	355	144	1	10	1830
Row Percent	11.2%	31.1%	29.8%	19.4%	7.9%	.0%	.6%	100.0%
Column Percent	21.1%	20.0%	20.9%	18.7%	16.8%	25.0%	15.7%	19.7%
East South Central	24	88	87	71	24	0	5	300
Row Percent	8.1%	29.4%	29.1%	23.6%	8.1%	.0%	1.7%	100.0%
Column Percent	2.5%	3.1%	3.3%	3.7%	2.8%	.0%	7.6%	3.2%
Middle Atlantic	249	646	567	484	218	1	17	2181
Row Percent	11.4%	29.6%	26.0%	22.2%	10.0%	.1%	.8%	100.0%
Column Percent	25.5%	22.7%	21.7%	25.4%	25.4%	25.0%	26.5%	23.5%

Table 10.7.1 Continued

GEOGRAPHIC REGION	AGE							Total
	20-29	30-39	40-49	50-59	60-69	70 or more	No Answer	
South Atlantic	159	422	439	311	146	0	8	1484
Row Percent	10.7%	28.4%	29.6%	20.9%	9.8%	.0%	.5%	100.0%
Column Percent	16.3%	14.8%	16.8%	16.3%	17.0%	.0%	11.9%	16.0%
New England	73	220	178	153	75	2	3	703
Row Percent	10.4%	31.3%	25.3%	21.7%	10.6%	.3%	.4%	100.0%
Column Percent	7.5%	7.7%	6.8%	8.0%	8.7%	50.0%	4.3%	7.6%
No Answer	3	6	6	3	6	0	10	33
Row Percent	7.9%	19.4%	14.9%	7.9%	18.0%	.0%	32.0%	100.0%
Column Percent	.3%	.2%	.2%	.1%	.7%	.0%	15.8%	.3%
Total	975	2851	2610	1904	856	4	65	9265
Row Percent	10.5%	30.8%	28.2%	20.5%	9.2%	.0%	.7%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 10.8.1

ALL RESPONDENTS
by GEOGRAPHIC REGION and WORK FUNCTION
1988 Survey of ACS Members

WORK FUNCTION	GEOGRAPHIC REGION										Total
	Pacific	Mount	WN Central	WS Central	EN Central	ES Central	Middle Atl	S Atl	New England	No Answer	
R&D Mgt	128	37	54	50	214	30	288	187	83	2	1073
Row Percent	11.9%	3.4%	5.1%	4.7%	20.0%	2.8%	26.8%	17.5%	7.7%	.1%	100.0
Column Percent	15.8%	17.3%	14.4%	10.1%	15.0%	15.6%	16.4%	16.2%	16.0%	8.6%	15.5
Basic research	81	20	33	31	149	20	219	146	42	2	744
Row Percent	10.9%	2.7%	4.4%	4.1%	20.1%	2.7%	29.5%	19.7%	5.6%	.3%	100.0
Column Percent	10.1%	9.6%	8.8%	6.3%	10.5%	10.3%	12.5%	12.7%	8.1%	11.2%	10.7
Applied research	231	56	137	178	523	57	598	317	182	2	2281
Row Percent	10.1%	2.5%	6.0%	7.8%	22.9%	2.5%	26.2%	13.9%	8.0%	.1%	100.0
Column Percent	28.6%	26.4%	36.5%	36.0%	36.7%	29.7%	34.0%	27.5%	35.1%	11.2%	32.9
General Mgt	76	18	36	57	130	26	158	139	46	5	690
Row Percent	11.0%	2.7%	5.2%	8.3%	18.9%	3.7%	22.9%	20.1%	6.6%	.7%	100.0
Column Percent	9.4%	8.6%	9.5%	11.6%	9.1%	13.3%	9.0%	12.0%	8.8%	26.9%	10.0
Marketing	53	9	22	37	98	8	119	64	45	0	457
Row Percent	11.7%	1.9%	4.9%	8.2%	21.5%	1.8%	26.2%	14.0%	9.9%	.0%	100.0
Column Percent	6.6%	4.1%	5.9%	7.6%	6.9%	4.2%	6.8%	5.5%	8.7%	.0%	6.6
Production	68	18	42	58	106	28	129	100	39	3	590
Row Percent	11.4%	3.1%	7.1%	9.9%	18.0%	4.7%	21.8%	17.0%	6.6%	.5%	100.0
Column Percent	8.4%	8.5%	11.1%	11.8%	7.4%	14.3%	7.3%	8.7%	7.5%	16.8%	8.5
Forensics	43	23	21	22	63	7	62	39	21	0	301
Row Percent	14.2%	7.7%	7.0%	7.4%	21.1%	2.2%	20.5%	12.8%	7.1%	.0%	100.0
Column Percent	5.3%	10.9%	5.6%	4.5%	4.4%	3.4%	3.5%	3.3%	4.1%	.0%	4.3
Writing	9	2	2	1	26	2	7	13	4	0	65
Row Percent	13.8%	3.1%	2.4%	1.9%	39.6%	2.4%	10.0%	20.3%	6.5%	.0%	100.0
Column Percent	1.1%	.9%	.4%	.3%	1.8%	.8%	.4%	1.1%	.8%	.0%	.9
Chem info services	10	2	0	3	31	0	23	14	3	1	88
Row Percent	11.4%	2.3%	.0%	3.4%	35.7%	.0%	26.3%	16.3%	3.4%	1.1%	100.0
Column Percent	1.2%	.9%	.0%	.6%	2.2%	.0%	1.3%	1.2%	.6%	5.6%	1.3

Table 10.8.1 Continued

WORK FUNCTION	GEOGRAPHIC REGION										Total
	Pacific	Mount	WN Central	WS Central	EN Central	ES Central	Middle Atl	S Atl	New England	No Answer	
Computers	22	3	4	5	10	0	18	14	4	0	81
Row Percent	27.2%	4.1%	5.4%	5.8%	12.6%	.0%	22.0%	17.6%	5.3%	.0%	100.0
Column Percent	2.7%	1.5%	1.2%	1.0%	.7%	.0%	1.0%	1.2%	.8%	.0%	1.2
Consulting	41	13	8	25	30	5	65	40	22	1	251
Row Percent	16.2%	5.2%	3.2%	10.0%	12.0%	2.1%	26.0%	16.1%	8.7%	.5%	100.0
Column Percent	5.0%	6.2%	2.1%	5.1%	2.1%	2.7%	3.7%	3.5%	4.2%	7.1%	3.6
Other	46	9	17	24	36	11	67	74	26	2	311
Row Percent	14.7%	2.8%	5.3%	7.7%	11.7%	3.5%	21.4%	23.8%	8.4%	.6%	100.0
Column Percent	5.6%	4.1%	4.4%	4.8%	2.6%	5.6%	3.8%	6.5%	5.1%	11.2%	4.5
No Answer	1	2	1	2	6	0	7	6	2	0	27
Row Percent	3.7%	7.4%	3.7%	7.4%	23.2%	.0%	26.3%	21.5%	5.7%	.0%	100.0
Column Percent	.1%	.9%	.3%	.4%	.4%	.0%	.4%	.5%	.3%	.0%	.4
Total	807	214	377	494	1424	193	1758	1154	519	18	6959
Row Percent	11.6%	3.1%	5.4%	7.1%	20.5%	2.8%	25.3%	16.6%	7.5%	.3%	100.0
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0

Table 10.9.1

ALL RESPONDENTS
by GEOGRAPHIC REGION and WORK SPECIALTY
1988 Survey of ACS Members

WORK SPECIALTY	GEOGRAPHIC REGION										Total
	Pacific	Mount	WN Central	WS Central	EN Central	ES Central	Middle Atl	S Atl	New England	No Answer	
Chemical eng	65	13	24	60	78	18	133	82	34	1	507
Row Percent	12.9%	2.6%	4.8%	11.8%	15.3%	3.5%	26.2%	16.1%	6.7%	.1%	100.0
Column Percent	8.1%	6.1%	6.4%	12.1%	5.4%	9.1%	7.6%	7.1%	6.6%	5.6%	7.3
Biochemistry	33	3	9	10	30	3	49	50	17	0	203
Row Percent	16.1%	1.3%	4.4%	4.9%	14.7%	1.5%	23.9%	24.8%	8.4%	.0%	100.0
Column Percent	4.0%	1.2%	2.4%	2.0%	2.1%	1.6%	2.8%	4.4%	3.3%	.0%	2.9
Biotechnology	38	2	8	1	30	2	25	16	22	0	144
Row Percent	26.2%	1.6%	5.3%	.7%	20.6%	1.3%	17.5%	11.4%	15.4%	.0%	100.0
Column Percent	4.7%	1.1%	2.0%	.2%	2.1%	.9%	1.4%	1.4%	4.2%	.0%	2.1
General chemistry	16	1	8	10	47	8	43	33	10	0	177
Row Percent	9.3%	.6%	4.5%	5.9%	26.7%	4.3%	24.4%	18.5%	5.8%	.0%	100.0
Column Percent	2.0%	.5%	2.1%	2.1%	3.3%	3.9%	2.4%	2.8%	2.0%	.0%	2.5
Agricultural chem	44	4	31	13	38	9	58	48	4	1	251
Row Percent	17.6%	1.6%	12.4%	5.3%	15.2%	3.6%	23.2%	19.1%	1.7%	.4%	100.0
Column Percent	5.5%	1.9%	8.3%	2.7%	2.7%	4.7%	3.3%	4.1%	.8%	5.6%	3.6
Analytical chem	133	54	71	110	279	46	319	197	66	0	1273
Row Percent	10.4%	4.2%	5.5%	8.6%	21.9%	3.6%	25.1%	15.5%	5.2%	.0%	100.0
Column Percent	16.4%	25.1%	18.8%	22.2%	19.6%	23.9%	18.2%	17.1%	12.7%	.0%	18.3
Clinical chemistry	17	5	7	4	15	1	12	14	11	0	86
Row Percent	19.3%	5.8%	8.2%	4.7%	17.8%	1.2%	13.8%	16.4%	12.8%	.0%	100.0
Column Percent	2.0%	2.3%	1.9%	.8%	1.1%	.5%	.7%	1.2%	2.1%	.0%	1.2
Environmental chem	76	31	38	38	88	18	100	95	24	0	509
Row Percent	14.9%	6.1%	7.5%	7.5%	17.4%	3.5%	19.6%	18.7%	4.7%	.0%	100.0
Column Percent	9.4%	14.5%	10.1%	7.7%	6.2%	9.3%	5.7%	8.3%	4.6%	.0%	7.3
Inorganic chem	13	16	8	13	37	5	50	26	13	0	181
Row Percent	7.3%	8.7%	4.3%	7.2%	20.3%	2.9%	27.4%	14.4%	7.4%	.0%	100.0
Column Percent	1.6%	7.4%	2.1%	2.6%	2.6%	2.7%	2.8%	2.3%	2.6%	.0%	2.6

Table 10.9.1 Continued

WORK SPECIALTY	GEOGRAPHIC REGION										Total
	Pacific	Mount	WN Central	WS Central	EN Central	ES Central	Middle Atl	S Atl	New England	No Answer	
Materials science	46	13	20	14	71	10	88	51	39	1	354
Row Percent	13.0%	3.7%	5.6%	4.0%	20.1%	2.8%	24.9%	14.5%	11.1%	.3%	100.0
Column Percent	5.7%	6.2%	5.2%	2.9%	5.0%	5.2%	5.0%	4.4%	7.5%	5.6%	5.1
Med/Pharm chem	33	2	17	10	93	5	144	54	26	1	385
Row Percent	8.5%	.6%	4.5%	2.5%	24.3%	1.3%	37.4%	14.1%	6.6%	.3%	100.0
Column Percent	4.1%	1.1%	4.6%	1.9%	6.6%	2.6%	8.2%	4.7%	4.9%	5.6%	5.5
Organic chemistry	50	9	38	48	120	18	177	107	47	0	614
Row Percent	8.1%	1.5%	6.1%	7.8%	19.6%	3.0%	28.9%	17.4%	7.6%	.0%	100.0
Column Percent	6.1%	4.3%	10.0%	9.7%	8.4%	9.5%	10.1%	9.3%	9.0%	.0%	8.8
Physical chemistry	45	8	8	21	53	2	71	40	22	1	272
Row Percent	16.5%	3.0%	2.9%	7.9%	19.6%	.7%	26.1%	14.7%	8.2%	.4%	100.0
Column Percent	5.6%	3.9%	2.1%	4.3%	3.8%	1.0%	4.0%	3.5%	4.3%	5.6%	3.9
Polymer chemistry	50	15	40	60	216	19	221	139	78	4	841
Row Percent	5.9%	1.8%	4.7%	7.1%	25.6%	2.2%	26.3%	16.5%	9.3%	.5%	100.0
Column Percent	6.2%	6.9%	10.6%	12.2%	15.1%	9.6%	12.6%	12.0%	15.0%	22.2%	12.1
Other chem	23	8	3	22	46	6	44	32	17	0	200
Row Percent	11.5%	4.0%	1.6%	11.1%	22.9%	2.8%	21.7%	16.0%	8.3%	.0%	100.0
Column Percent	2.9%	3.7%	.9%	4.5%	3.2%	2.9%	2.5%	2.8%	3.2%	.0%	2.9
Business Admin	28	9	14	22	57	6	75	37	32	4	284
Row Percent	9.9%	3.0%	5.0%	7.7%	20.0%	2.0%	26.5%	13.2%	11.3%	1.3%	100.0
Column Percent	3.5%	4.0%	3.8%	4.4%	4.0%	3.0%	4.3%	3.2%	6.2%	22.2%	4.1
Other non-chem	62	14	22	23	68	11	101	92	36	3	432
Row Percent	14.4%	3.3%	5.0%	5.3%	15.7%	2.6%	23.5%	21.2%	8.3%	.7%	100.0
Column Percent	7.7%	6.6%	5.8%	4.6%	4.7%	5.8%	5.8%	7.9%	6.9%	16.7%	6.2
No Answer	36	7	12	14	58	7	48	40	22	2	247
Row Percent	14.7%	2.8%	4.7%	5.9%	23.6%	3.0%	19.5%	16.4%	8.7%	.8%	100.0
Column Percent	4.5%	3.2%	3.1%	2.9%	4.1%	3.8%	2.7%	3.5%	4.1%	11.1%	3.6
Total	807	214	377	494	1424	193	1758	1154	519	18	6959
Row Percent	11.6%	3.1%	5.4%	7.1%	20.5%	2.8%	25.3%	16.6%	7.5%	.3%	100.0
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0

Table 10.10.1

ALL RESPONDENTS
by GEOGRAPHIC REGION and SEX
1988 Survey of ACS Members

GEOGRAPHIC REGION	SEX			Total
	Men	Women	No Answer	
Pacific	855	173	76	1104
Row Percent	77.5%	15.6%	6.9%	100.0%
Column Percent	11.7%	12.3%	13.3%	11.9%
Mountain	284	44	21	349
Row Percent	81.3%	12.7%	6.0%	100.0%
Column Percent	3.9%	3.2%	3.7%	3.8%
West North Central	470	87	31	587
Row Percent	80.0%	14.9%	5.2%	100.0%
Column Percent	6.4%	6.2%	5.4%	6.3%
West South Central	548	95	50	694
Row Percent	79.1%	13.7%	7.2%	100.0%
Column Percent	7.5%	6.8%	8.8%	7.5%
East North Central	1443	293	93	1830
Row Percent	78.9%	16.0%	5.1%	100.0%
Column Percent	19.8%	20.9%	16.4%	19.7%
East South Central	252	31	16	300
Row Percent	84.1%	10.5%	5.4%	100.0%
Column Percent	3.5%	2.2%	2.8%	3.2%
Middle Atlantic	1689	349	143	2181
Row Percent	77.4%	16.0%	6.6%	100.0%
Column Percent	23.2%	24.9%	25.2%	23.5%
South Atlantic	1169	225	90	1484
Row Percent	78.8%	15.1%	6.1%	100.0%
Column Percent	16.0%	16.0%	15.9%	16.0%
New England	563	102	37	703
Row Percent	80.1%	14.6%	5.3%	100.0%
Column Percent	7.7%	7.3%	6.5%	7.6%
No Answer	18	4	12	33
Row Percent	51.7%	12.4%	36.0%	100.0%
Column Percent	.2%	.3%	2.0%	.3%
Total	7291	1404	570	9265
Row Percent	78.7%	15.2%	6.1%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table 10.11.1

ALL RESPONDENTS
by GEOGRAPHIC REGION and HIGHEST DEGREE
1988 Survey of ACS Members

	HIGHEST DEGREE			Total
GEOGRAPHIC REGION	BS	MS	PhD	
Pacific	260	207	634	1101
Row Percent	23.6%	18.8%	57.6%	100.0%
Column Percent	11.6%	11.9%	12.1%	11.9%
Mountain	72	60	215	347
Row Percent	20.9%	17.2%	61.9%	100.0%
Column Percent	3.2%	3.4%	4.1%	3.8%
West North Central	134	105	347	586
Row Percent	22.9%	17.9%	59.2%	100.0%
Column Percent	6.0%	6.0%	6.6%	6.4%
West South Central	183	117	393	693
Row Percent	26.5%	16.9%	56.7%	100.0%
Column Percent	8.2%	6.7%	7.5%	7.5%
East North Central	483	372	969	1824
Row Percent	26.5%	20.4%	53.1%	100.0%
Column Percent	21.7%	21.4%	18.4%	19.8%
East South Central	76	55	167	298
Row Percent	25.5%	18.6%	56.0%	100.0%
Column Percent	3.4%	3.2%	3.2%	3.2%
Middle Atlantic	525	410	1237	2171
Row Percent	24.2%	18.9%	57.0%	100.0%
Column Percent	23.5%	23.6%	23.5%	23.5%
South Atlantic	336	271	872	1479
Row Percent	22.7%	18.3%	59.0%	100.0%
Column Percent	15.1%	15.6%	16.6%	16.0%
New England	152	137	411	700
Row Percent	21.8%	19.5%	58.7%	100.0%
Column Percent	6.8%	7.9%	7.8%	7.6%
No Answer	9	4	10	23
Row Percent	40.0%	19.2%	40.8%	100.0%
Column Percent	.4%	.2%	.2%	.2%
Total	2231	1738	5254	9223
Row Percent	24.2%	18.8%	57.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

American Chemical Society

OFFICE OF THE
EXECUTIVE DIRECTOR

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4600

February 22, 1988

Dear Colleague:

Each year the American Chemical Society studies the economic status of the U.S. chemical profession by surveying a sample of ACS members. You are one of about 27,000 members I am asking to participate in this survey, conducted under the aegis of the Joint Board-Council Committee on Economic Status. This year, like last, the ACS will issue a separate report of the economic status of member chemical engineers. This year's sample, therefore, includes more than the usual number of chemical engineers.

Because a high response rate is needed to assure accurate results, your participation is an important service to our colleagues. Please take a few minutes now to complete the questionnaire and return it in the enclosed business reply envelope. The procedure is anonymous, and the information you provide will be reported only as a part of aggregated data.

Findings will be reported to ACS members in several ways. Preliminary results will be presented at the spring meeting in Toronto; early in the summer, the ACS will publish detailed analyses in four separate reports. At about the same time, Chemical and Engineering News will publish a cover story on the salaries and employment status of chemists.

Please feel free to use the back of the questionnaire for whatever comments or suggestions you might care to make.

Thank you for your assistance.

Sincerely,

John K Crum

John K Crum

Encl.

AMERICAN CHEMICAL SOCIETY

1988 Comprehensive Salary and Employment Status Survey

I. Education and Employment Status

A. PLEASE INDICATE THE YEAR IN WHICH YOU EARNED ANY OF THE FOLLOWING DEGREES:

Bachelor's	19 __ __	1-2
Master's	19 __ __	3-4
Doctorate	19 __ __	5-6

B. PLEASE CHECK THE APPROPRIATE BOX IN EACH COLUMN.

	Field of highest degree	ONE specialty most related to your current or most recent job	
Chemical engineering	☐ 01	☐ 01	
Biochemistry	☐ 02	☐ 02	
Biotechnology	☐ 03	☐ 03	
General chemistry	☐ 04	☐ 04	
Agricultural/food chemistry	☐ 05	☐ 05	
Analytical chemistry	☐ 06	☐ 06	
Clinical chemistry	☐ 07	☐ 07	
Environmental chemistry	☐ 08	☐ 08	
Inorganic chemistry	☐ 09	☐ 09	
Materials science	☐ 10	☐ 10	
Medicinal/pharmaceutical chemistry	☐ 11	☐ 11	
Organic chemistry	☐ 12	☐ 12	
Physical chemistry	☐ 13	☐ 13	
Polymer chemistry	☐ 14	☐ 14	
Other chemical science	☐ 15	☐ 15	
Business Administration	☐ 16	☐ 16	
Other Non-chemistry	☐ 17	☐ 17	7-10

C. PLEASE ENTER YOUR PRIMARY EMPLOYMENT STATUS AS OF MARCH 1, 1988. CHOOSE THE ONE CATEGORY THAT BEST FITS YOUR SITUATION.

Employed full-time (35 hours or more per week)	☐ 1	
Employed part-time	☐ 2	
Postdoctoral or other fellowship	☐ 3	
Not employed but actively seeking employment	☐ 4	
Not employed and NOT seeking employment	☐ 5	11

D. If you were UNEMPLOYED on March 1, 1988, how long had you been unemployed?

Less than 1 month	☐ 1	
1 to 3 months	☐ 2	
4 to 6 months	☐ 3	
7 to 12 months	☐ 4	
More than 1 year	☐ 5	12

E. Regardless of your current status, was there any period when you were NOT EMPLOYED AND ACTIVELY SEEKING EMPLOYMENT in calendar year 1987?

Yes	☐ 1	
No	☐ 2	13

IF YES, how many total weeks were you NOT EMPLOYED AND ACTIVELY SEEKING EMPLOYMENT during calendar year 1987?

__ __ weeks (ENTER A NUMBER FROM 1 TO 52) 14-15

II. Questions About Yourself

A. Your sex:

Male ☐ 1 Female ☐ 2 16

B. Your marital status:

Single ☐ 1 Married ☐ 2 17

C. Age at last birthday before March 1, 1988:

__ __ years old 18-19

D. Citizenship or visa status:

U.S. native	☐ 1	
U.S. naturalized	☐ 2	
U.S. permanent resident visa	☐ 3	
Other visa	☐ 4	20

E. Race or ethnic group:

American Indian or Alaskan Native	☐ 1	
Asian or Pacific Islander	☐ 2	
Black (not of Hispanic origin)	☐ 3	
Hispanic	☐ 4	
White	☐ 5	
Other race or ethnic group	☐ 6	21

F. Please enter the TWO-LETTER post office abbreviation for the STATE in which you live, e.g., MA.

__ __ 22-23

G. What are the first three digits of the ZIP CODE of your current or most recent place of employment?

__ __ __ 24-26

IF YOU ARE NOT CURRENTLY EMPLOYED, PLEASE SKIP TO SECTION IV, MOST RECENT OR CURRENT JOB.

III. Current Income

A. If you are CURRENTLY EMPLOYED, how long have you worked for your current employer?

__ __ years __ __ months 27-30

B. How did you find out about your current job? (Check the one that BEST applies)

ACS Services	☐ 1	
Services of other professional organizations	☐ 2	
Campus recruiting/placement office	☐ 3	
Newspaper ad	☐ 4	
Personal contact/employee referral	☐ 5	
State or federal employment service	☐ 6	
Private employment agency	☐ 7	
Other (specify) _____	☐ 8	31

C. BASE ANNUAL SALARY from PRINCIPAL JOB as of March 1, 1988. (DO NOT INCLUDE bonuses, earnings from second job, overtime work, summer teaching, or other supplemental earnings.) If zero, please indicate. If on a 9 or 10 month contract, report the 9 or 10 month salary rather than an annualized salary.

$ _____ per year 32-37

D. TOTAL PROFESSIONAL INCOME during calendar year 1987. (INCLUDE consulting fees, base annual salary, bonuses, earnings from second job, overtime, summer teaching, and other supplemental earnings.)

$ _____ per year 38–43

IV. Describe Your Current or Most Recent Job.

IF YOUR CURRENT OR MOST RECENT EMPLOYER IS NOT AN ACADEMIC INSTITUTION, GO TO SECTION V AT THE TOP OF THE NEXT COLUMN.

CURRENT OR MOST RECENT EMPLOYMENT IS IN AN ACADEMIC INSTITUTION.

A. Current (or most recent) principal employer:

1. Public institution ☐ 1
   Private institution ☐ 2 44

2. High school ☐ 1
   Medical or professional school ☐ 2
   College or university where the highest degree offered in chemical science is:
   - Associate ☐ 3
   - Bachelor's ☐ 4
   - Master's ☐ 5
   - Doctorate ☐ 6 45

B. Your academic rank:

- Full professor ☐ 1
- Associate professor ☐ 2
- Assistant professor, tenure track ☐ 3
- Instructor, lecturer, or non-tenure track ☐ 4
- Non-teaching research associate ☐ 5
- My institution does not have ranks ☐ 6 46

C. Have you been granted tenure?

- Yes ☐ 1
- No ☐ 2 47

D. Your basic contract is for a period of:

- 9 or 10 months ☐ 1
- 11 or 12 months ☐ 2 48

E. About what fraction of your total academic year assignment is devoted to:

	1/4 or less	1/3	1/2	2/3	3/4	full-time	
Teaching	☐	☐	☐	☐	☐	☐	49
Research	☐	☐	☐	☐	☐	☐	50
Administration	☐	☐	☐	☐	☐	☐	51
Other	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	52

F. What was your principal professional activity during the SUMMER OF 1987?

- Teaching ☐ 1
- Funded research or study ☐ 2
- Unpaid scholarly/academic ☐ 3
- Administration ☐ 4
- Consulting ☐ 5
- Non-academic employment ☐ 6
- Other ☐ 7 53

THANK YOU. YOU HAVE COMPLETED THE QUESTIONNAIRE. PLEASE USE THE BLANK SPACE ON THE BACK OF THIS QUESTIONNAIRE FOR COMMENTS.

V. Current or Most Recent Employment Is Not In an Academic Institution.

A. Current (or most recent) principal employer:

- Self-employed ☐ 01
- Private industry
  - Non-manufacturing ☐ 02
  - Manufacturing
    - Basic chemicals ☐ 03
    - Specialty chemicals ☐ 04
    - Agricultural chemicals ☐ 05
    - Biochemical products ☐ 06
    - Coatings and paints ☐ 07
    - Electronics ☐ 08
    - Food ☐ 09
    - Glass, ceramics ☐ 10
    - Paper ☐ 11
    - Petroleum/natural gas ☐ 12
    - Pharmaceuticals, personal care ☐ 13
    - Plastics ☐ 14
    - Rubber ☐ 15
    - Soaps, detergents, surfactants ☐ 16
    - Steel or ferrous metals ☐ 17
    - Other metals, minerals ☐ 18
    - Other manufactures (specify) _____ ☐ 19
- Government
  - Federal (civilian) ☐ 20
  - State or local ☐ 21
  - Military ☐ 22
- Other non-academic
  - Hospitals, independent laboratory ☐ 23
  - Non-profit organization, other research institution ☐ 24
  - Other employment ☐ 25 54–55

B. Check the ONE work function that best describes your job.

- Research and Development
  - Management or administration of R&D ☐ 01
  - Basic research ☐ 02
  - Applied research, development, design ☐ 03
- General management, administration (other than research and development) ☐ 04
- Marketing, sales, purchasing, technical service, economic evaluation ☐ 05
- Production, quality control ☐ 06
- Forensic analysis, other laboratory analysis ☐ 07
- Writing, editing, abstracting ☐ 08
- Chemistry information services ☐ 09
- Computer programming, analysis, design ☐ 10
- Consulting ☐ 11
- Other ☐ 12 56–57

C. Were you eligible for a bonus during calendar 1987?

- Yes ☐ 1
- No ☐ 2 58

D. Did you receive a bonus during calendar 1987?

- Yes ☐ 1
- No ☐ 2 59

IF YES, please indicate amount $_____ 60–64

VI. Level of Responsibility:

Please examine the statements within each of the four groups (Duties, Technical Decisions and Recommendations, Supervision Received, and Supervision Exercised) and, within each group, check the box of the statement that most closely corresponds to your responsibility on the job.

A. Duties:

I receive on-the-job training working on simple projects or assisting more senior staff. ☐ 1
I perform responsible and varied assignments within projects ☐ 2
I plan, conduct, and coordinate projects of some complexity ☐ 3
I undertake long-term and short-term planning and supervision of projects. I make decisions on work programs and have budgetary control of projects ☐ 4
I have full managerial responsibility for a function with full responsibility for the operation of a budget and long term planning ☐ 5 65

B. Technical Decisions and Recommendations:

I am responsible for minor technical details only, all other matters being checked ☐ 1
I am responsible for technical detail which is reviewed overall ☐ 2
I am responsible for technical matters but am subject to occasional review ☐ 3
I have full technical responsibility for projects ☐ 4
I am responsible for all technical matters including the delegation of responsibility ☐ 5 66

C. Supervision Received:

My work is assigned with detailed instructions, guidance being always available. My results are subject to close scrutiny ☐ 1
My work is assigned in terms of detailed objectives and priorities, guidance being available on problems and unusual features. My work is subject to scrutiny ☐ 2
My work is assigned in terms of general objectives and priorities, guidance being available on policy or unusually complex problems. My work is reviewed for effectiveness only ☐ 3
My work is such that I receive executive instruction on broad overall objectives and it is reviewed only for its general effectiveness and adherence to policy ☐ 4
My work is unsupervised, other than I comply with the policy decided within the governing body ☐ 5 67

D. Supervision Exercised:

I have no authority but may give technical guidance to juniors working on the same project ☐ 1
I have no managerial responsibilities for qualified staff but may be assigned graduates, technicians, or other juniors as assistants from time to time ☐ 2
I supervise a group of qualified staff, technicians, and other employees. I assign and review their work. I can recommend on the selection, discipline, rating, training, and perhaps rate of pay ☐ 3
I am responsible for leaders of groups containing qualified staff, technicians, and other employees. I give guidance on policy and complex technical matters delegating responsibility for discipline, rating, training, and rates of pay ☐ 4
I have full control over senior staff who are in turn responsible for groups of qualified staff and other employees ☐ 5 68

THANK YOU FOR YOUR PARTICIPATION.

PLEASE RETURN THIS QUESTIONNAIRE TO
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