# STARTING $ALARIE$

## Of Chemists and Chemical Engineers

Analysis of the
American Chemical Society's
Survey of Graduates in
Chemistry and Chemical Engineering

1989

# 1989 SURVEY REPORT

# STARTING SALARIES AND EMPLOYMENT STATUS OF

# CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES

American Chemical Society
1155 Sixteenth Street, N.W.
Washington, D.C. 20036

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## ACKNOWLEDGMENTS

Each year, at the direction of its Joint Board-Council Committee on Economic Status, the American Chemical Society (ACS) surveys recent chemistry and chemical engineering graduates to determine trends in starting salaries and employment status. This report presents detailed results of the 1989 Starting Salary Survey. A summary of the survey findings was published in the October 23 issue of *Chemical & Engineering News*.

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

Robert K. Neuman, Special Assistant to the Director,
Membership Division

## SUMMARY OF FINDINGS

### SALARIES

Salaries for inexperienced BS chemists and chemical engineers increased moderately in 1989. The mean starting salary for inexperienced BS chemists was $23,167 in 1989, compared with $21,743 in 1988. The mean starting salary for inexperienced BS chemical engineers was $32,223 in 1989, compared with $29,821 in 1988.

Table 1 shows average starting salaries paid to inexperienced chemistry graduates for 1988 and 1989, and gives additional information concerning the variation among individual salaries within each group. Table 2 presents corresponding information for chemical engineering graduates. The trends in median starting salaries from 1980 to the present for inexperienced chemists and chemical engineers are shown in Figures 1 and 2.

For inexperienced chemists (those with less than 12 months of experience), 1989 mean starting salaries were:

| | | | | | | |
|---|---|---|---|---|---|---|
| $23,167 for the | BS, | up | 6.5%, | or in constant dollars | up | 1.7% |
| $29,863 for the | MS, | up | 10.5%, | or in constant dollars | up | 5.4% |
| $38,782 for the | PhD, | up | 4.9%, | or in constant dollars | up | 0.1% |

Chemical engineers continue to receive larger starting salaries than do chemists with similar degrees. Among chemical engineers, the 1989 mean starting salaries were:

| | | | | | | |
|---|---|---|---|---|---|---|
| $32,223 for the | BS, | up | 8.1%, | or in constant dollars | up | 3.1% |
| $35,697 for the | MS, | up | 7.7%, | or in constant dollars | up | 2.7% |
| $45,802 for the | PhD, | up | 9.4%, | or in constant dollars | up | 4.4% |

The Consumer Price Index rose 4.8% from August 1988 to August 1989.

### POST-GRADUATION EMPLOYMENT STATUS

Unemployment rates for chemistry and chemical engineering graduates at all degree levels were lower in 1989 than in 1988. Unemployment this year among bachelor's chemists and chemical engineers was the lowest it has been throughout the 1980s.

The recent history for unemployment rates of recent bachelor's graduates is:

| | **1989** | **1988** | **1987** | **1986** | **1985** | **1984** | **1983** | **1982** | **1981** |
|---|---|---|---|---|---|---|---|---|---|
| Chemical Engineering | 5% | 8% | 16% | 21% | 22% | 24% | 42% | 26% | 8% |
| Chemistry | 10% | 11% | 13% | 13% | 23% | 27% | 31% | 21% | 23% |

New chemical engineering graduates are generally subject to higher unemployment and more pronounced swings in unemployment rates than are new chemistry graduates. The decline in unemployment this year and last indicates increased demand for new chemists and particularly for new chemical engineers.

Table 1

STARTING YEARLY SALARIES
OF INEXPERIENCED FULL-TIME EMPLOYED
CHEMISTRY GRADUATES

by Degree: 1988 and 1989

| Salaries | DEGREE LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | Bachelor's | | Master's | | Ph.D. | |
| | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 |
| 90th Percentile | $27,500 | $29,200 | $33,000 | $36,200 | $44,100 | $46,100 |
| 75th Percentile | 25,400 | 27,000 | 31,000 | 33,000 | 42,500 | 44,000 |
| 50th Percentile | 21,900 | 23,000 | 27,700 | 30,300 | 40,500 | 42,000 |
| 25th Percentile | 18,000 | 19,600 | 23,400 | 26,000 | 30,000 | 35,500 |
| 10th Percentile | 16,000 | 17,500 | 21,000 | 21,300 | 23,000 | 26,000 |
| Mean | 21,743 | 23,167 | 27,023 | 29,863 | 36,961 | 38,782 |
| Count | 322 | 318 | 64 | 79 | 148 | 150 |
| Standard Deviation | 4,520 | 5,033 | 5,864 | 5,986 | 8,901 | 8,343 |

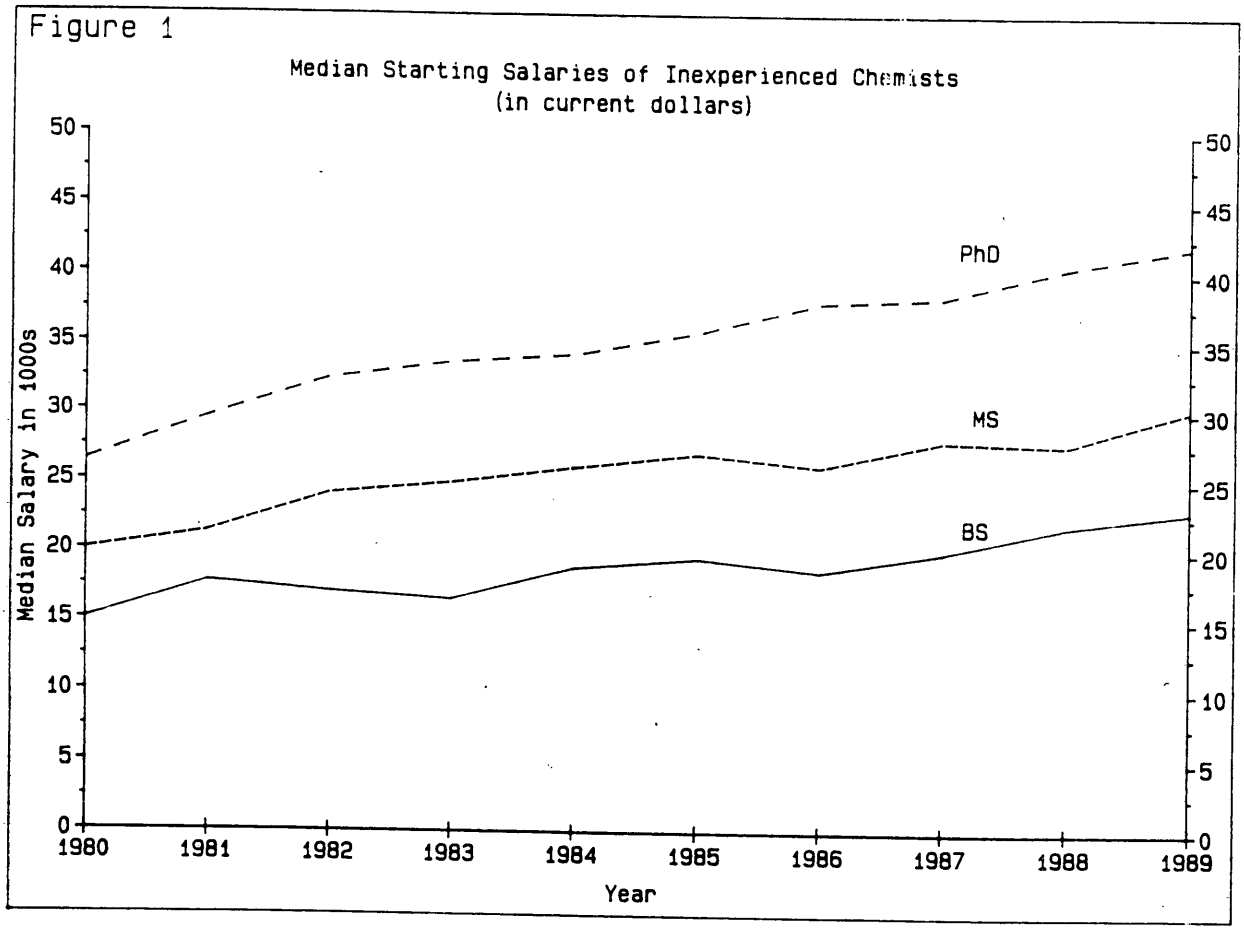
Table 2

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

by Degree: 1988 and 1989

| Salaries | DEGREE LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | Bachelor's | | Master's | | Ph.D. | |
| | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 |
| 90th Percentile | $32,500 | $35,000 | $38,000 | $39,000 | $48,000 | $50,100 |
| 75th Percentile | 31,800 | 33,800 | 34,400 | 38,000 | 46,000 | 49,000 |
| 50th Percentile | 31,000 | 33,000 | 33,000 | 36,000 | 44,400 | 47,000 |
| 25th Percentile | 29,000 | 31,800 | 32,000 | 34,800 | 40,000 | 43,150 |
| 10th Percentile | 25,000 | 28,800 | 28,000 | 32,000 | 31,200 | 40,000 |
| Mean | 29,821 | 32,223 | 33,152 | 35,697 | 41,877 | 45,802 |
| Count | 311 | 378 | 33 | 63 | 58 | 72 |
| Standard Deviation | 3,370 | 3,208 | 4,065 | 4,300 | 7,102 | 4,704 |

Figure 1

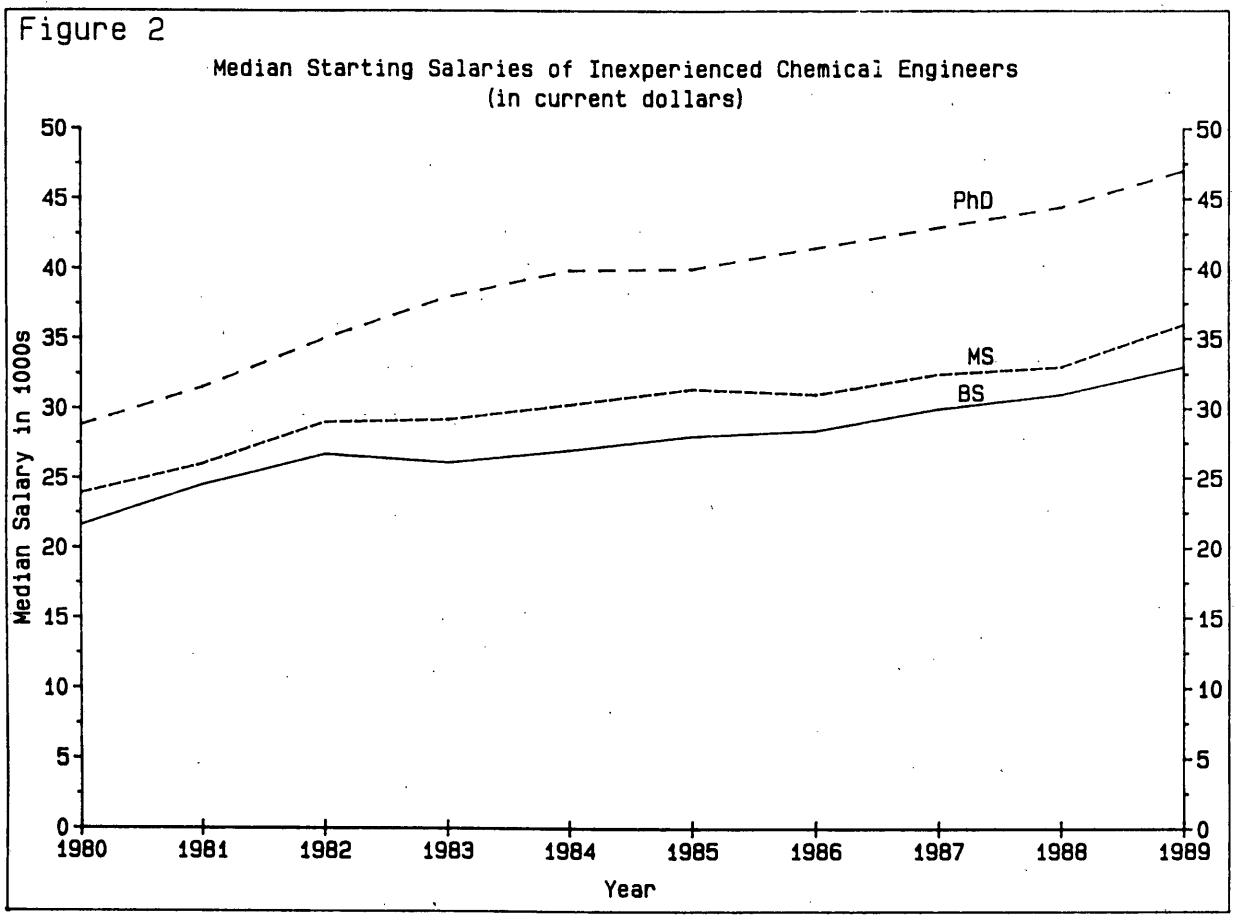



Median Starting Salaries of Inexperienced Chemists*
(in current dollars)

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|
| BS | $15.0 | $17.7 | $17.0 | $16.5 | $18.8 | $19.5 | $18.6 | $20.0 | $21.9 | $23.0 |
| MS | 20.0 | 21.3 | 24.1 | 24.9 | 26.0 | 27.0 | 26.1 | 28.0 | 27.7 | 30.3 |
| PhD | 26.4 | 29.5 | 32.4 | 33.6 | 34.2 | 35.8 | 38.0 | 38.4 | 40.5 | 42.0 |

*Base annual salary in thousands of dollars.

Figure 2




Median Starting Salaries of Inexperienced Chemical Engineers*
(in current dollars)

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|
| BS | $21.6 | $24.5 | $26.7 | $26.1 | $27.0 | $28.0 | $28.4 | $30.0 | $31.0 | $33.0 |
| MS | 23.9 | 26.0 | 29.0 | 29.2 | 30.3 | 31.4 | 31.0 | 32.5 | 33.0 | 36.0 |
| PhD | 28.8 | 31.5 | 35.0 | 38.0 | 39.9 | 40.0 | 41.5 | 43.0 | 44.4 | 47.0 |

*Base annual salary in thousands of dollars.

Not only has the unemployment rate for new chemical engineering graduates improved in 1989, but a greater proportion of them found employment in the field of chemistry or chemical engineering. This year, 82% of bachelor's chemical engineering graduates found employment in chemistry and chemical engineering compared to last year's 76%. The proportion of new chemistry graduates who found employment in chemistry or chemical engineering decreased to 65% this year from last year's 68%, but still evidences a generally upward trend since 1983.

## PLANS FOR ADVANCED STUDY and POSTDOCTORAL FELLOWSHIPS

A rough indicator of demand for PhD graduates is postdoctoral fellows as a percent of new PhDs. Because some of the new doctoral chemists who accept postdoctoral fellowships would have preferred full-time employment, an increase in the fraction accepting such fellowships can indicate insufficient full-time employment. This year, this measure of demand indicates that the climate is somewhat less hospitable for both chemistry and chemical engineering doctorate recipients than it was last year. Among new chemistry doctorate recipients, 40% accepted postdoctoral positions in 1989 as compared with 35% in 1988 (Table 3). Among new chemical engineering doctorate recipients, 14% accepted such positions in 1988 as compared with 12% in 1988.

This year's bachelor's degree recipients are somewhat less likely than last year's to have plans for full-time studies. The proportion planning full-time studies has fluctuated, for the most part, between 50% and 55% in the 1980s. The anticipated field of study has not changed greatly in the 1980s either. From 40% to 50% of bachelor's chemistry graduates plan either full or part-time further study in chemistry and from 35% to 40% plan full-time further study in medicine or dentistry. A summary of these plans appears in Tables 4 and 5. Figure 3 shows the postgraduation plans of bachelor's chemistry graduates.

## CHEMISTRY GRADUATES WHO HAVE COMPLETED ACS APPROVED PROGRAMS

Graduates completing undergraduate chemistry programs approved by the ACS Committee on Professional Training generally received higher starting salaries than graduates completing non-approved programs (see Table A-10). If planning further study, they are more likely to choose chemistry as their field of advanced study. Among bachelor's chemistry graduates planning full-time advanced study, approximately 31% plan to study medicine and approximately 38% plan to study chemistry. Approximately 82% of those studying medicine were in non-approved programs whereas 70% of those studying chemistry were in approved programs (see Table C-5). The unemployment rate for graduates of approved programs was somewhat lower (7% versus 13%) than that for graduates of non-approved programs (Table B-4a).

## CHARACTERISTICS OF DEGREE-GRANTING INSTITUTIONS AND EMPLOYERS

Generally speaking, bachelor's chemists receive higher salaries if their degrees are from schools that are in the Pacific or West South Central regions or grant doctorate degrees, and chemists and chemical engineers employed by larger firms generally receive higher salaries than those employed by smaller firms.

For chemical engineers, the type, size, and location of school from which they received degrees make little difference in salaries. Employer size, however, does make a difference in chemical engineers salaries. Bachelor's chemical engineers employed in larger firms (more than 24,000 employees) make 10% more than chemical engineers employed in small firms (less than 500 employees). Proportionately more chemical engineers than chemists are clustered at the higher end of the salary range because proportionately more chemical engineers (46%) than chemists (24%) are employed in firms with more than 24,000 employees.

These differences, along with more obvious ones, ought to be taken into account in any comparisons among salaries.

## EMPLOYMENT OF BACHELOR'S CHEMISTS AS TECHNICIANS

This year and last, the starting salary survey asked whether a respondent's job was classified as a technician position. In both years, 40% of the bachelor's chemistry respondents who were employed full time responded that they were employed as technicians. Those employed as technicians earned significantly lower salaries than those not employed as technicians. The median salary of bachelor's chemistry graduates employed as technicians was $22,000 whereas the median salary of those not employed as technicians was $24,000. Those employed as technicians were more likely than those not employed as technicians to have earned their degree at a bachelor's or master's-granting school, but otherwise they differed little from non-technicians in terms of the characteristics of the degree-granting school, grade point average, or completion of the ACS approved program.

## RACIAL/ETHNIC COMPOSITION OF NEW GRADUATES

With the exception of Asians, the racial/ethnic composition of new graduates has not changed appreciably since 1973 (the first year ACS collected such information). Blacks, Hispanics, and American Indians are very small proportions of new graduates in chemistry and chemical engineering at all degree levels (Table F1). American Indians have historically been less than 1%, and Blacks and Hispanics have been approximately 2% each, of new chemistry graduates. Blacks constitute a slightly higher proportion of new bachelor's graduates (3%) than of new PhD graduates (1.3%). Among chemical engineering graduates, Blacks and Hispanics have made some gains over the past years. In 1989, Blacks were 3%, and Hispanics were 2%, of bachelor's chemical engineering graduates (Table F-4), whereas in 1973, they were each 0.4%.

Asians are the largest minority group among new chemistry graduates--7% of bachelor's, 20% of master's, and 23% of PhD graduates. The proportion of new graduates who are Asian has more than doubled since 1973. In that year, Asians were 3% of bachelor's, 9% of master's, and 9% of PhD graduates. Among this year's bachelor's chemistry graduates, the majority (75%) of Asians are U.S. citizens and another 17% are permanent residents (Table F-1), so that only 8% are likely to return to their home countries. The reverse is true of PhD chemistry graduates--only 12% are U.S. citizens and the majority (78%) are noncitizens here on temporary visas.

Table 3

POSTGRADUATION STATUS OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: FALL 1989

| Major and Employment Status | Bachelor's | Master's | Doctorate |
|---|---|---|---|
| CHEMISTRY | | | |
| Full-time employed: | | | |
| In chemistry or chemical engineering | 34.5% | 50.6% | 48.4% |
| Outside chemistry or chemical engineering | 9.7% | 5.5% | 3.7% |
| Grad. asst./postdoctoral or other fellowship | 30.9% | 36.2% | 40.4% |
| Unemployed and seeking full-time employment | 8.6% | 3.4% | 6.2% |
| Unemployed and not seeking full-time employment | 16.3% | 4.3% | 1.3% |
| Total | 100.0 | 100.0 | 100.0 |
| Number of responses | 1,445 | 348 | 535 |
| CHEMICAL ENGINEERING | | | |
| Full-time employed: | | | |
| In chemistry or chemical engineering | 68.7% | 55.8% | 67.9% |
| Outside chemistry or chemical engineering | 9.8% | 9.4% | 10.7% |
| Grad. asst./postdoctoral or other fellowship | 14.1% | 30.8% | 14.3% |
| Unemployed and seeking full-time employment | 5.1% | 1.8% | 6.0% |
| Unemployed and not seeking full-time employment | 2.3% | 2.2% | 1.2% |
| Total | 100.0 | 100.0 | 100.0 |
| Number of responses | 823 | 224 | 168 |

Table 4

PLANS FOR FURTHER STUDY OF B.S. CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: FALL 1989

| Plans | Chemistry | Chemical Engineering |
|---|---|---|
| Further studies | 61.5% | 30.5% |
| Full-time | (51.0%) | (18.6%) |
| Part-time | (10.5%) | (11.9%) |
| No plans for further studies | 38.5% | 69.5% |
| Total | 100.0 | 100.0 |
| Number of responses | 1,664 | 848 |

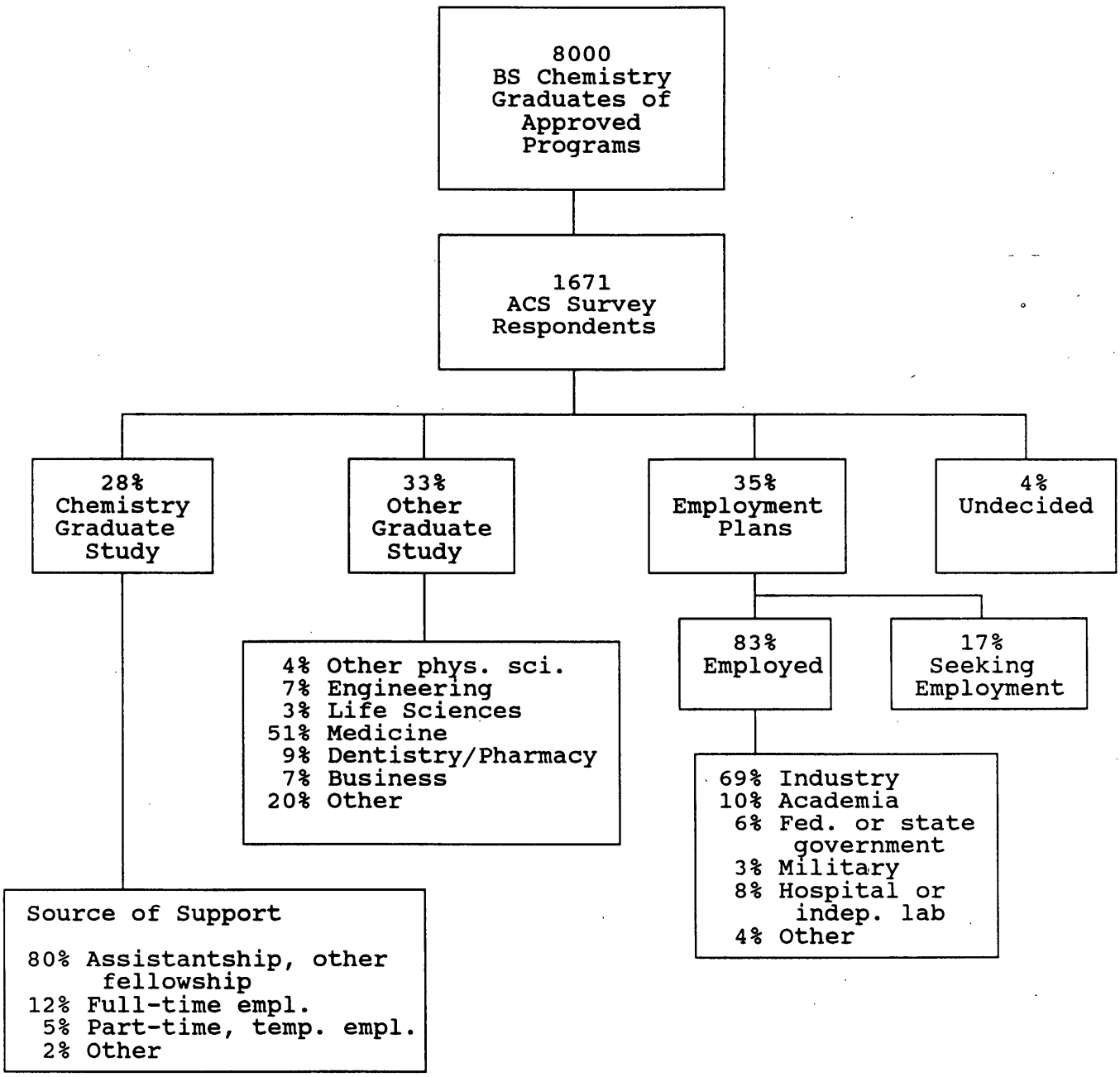
Table 5

FIELDS OF STUDY OF B.S. CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES WHO PLAN FURTHER STUDIES Fall 1989

| Field of Study | Chemistry | Chemical Engineering |
|---|---|---|
| FULL-TIME | | |
| Chemistry or biochemistry | 47.9% | 4.5% |
| Chemical or biochemical engineering | 1.4% | 70.3% |
| Medicine or dentistry | 33.8% | 7.7% |
| Business or management | .9% | 1.9% |
| All others | 16.0% | 15.6% |
| Total | 100.0 | 100.0 |
| Number of responses | 845 | 155 |
| PART-TIME | | |
| Chemistry or biochemistry | 39.9% | 2.0% |
| Chemical or biochemical engineering | 5.8% | 27.0% |
| Medicine or dentistry | 9.2% | 0.0% |
| Business or management | 17.3% | 41.0% |
| All others | 27.8% | 30.0% |
| Total | 100.0 | 100.0 |
| Number of responses | 173 | 100 |

Figure 3

Post-graduation Plans of 1989 BS Chemistry Graduates of ACS-Approved Programs




Source: 1989 ACS Starting Salary Survey.

# SCOPE AND METHOD

## OBJECTIVES

The 1989 Starting Salary Survey is the 38th in the series of annual surveys now conducted by the American Chemical Society. Summaries of the results of these surveys appear annually in the "Employment Outlook" edition of the *Chemical & Engineering News*. This year preliminary results were published on October 23.

The primary objective of the survey is to gather data on the starting salaries and occupational status of new chemists and chemical engineers who graduated during the 1988-89 academic year. The survey covers bachelor's, master's, and doctoral degree recipients. In addition, the survey provides information on graduates' sex, citizenship, and ethnicity.

## METHOD OF COLLECTION AND TIMING OF SURVEY

Chemistry departments approved by the ACS and chemical engineering departments approved by the American Institute of Chemical Engineers and the Engineer's Council for Professional Development provided names and addresses of students that graduated between August, 1988 and June, 1989. During the summer of 1989, questionnaires were mailed to those graduates who had U.S. addresses.

## EXTENT OF COVERAGE

Survey questionnaires were mailed by first class mail from July through September to 9,332 graduates. Approximately 3 weeks after each initital mailing, a second questionnaire and cover letter were sent to non-respondents. By the cutoff date of October 23, ACS had received 4,543 usable responses. Another 756 questionnaires were returned as nondeliverable. No attempt was made to examine the characteristics of graduates from departments that did not participate in the survey or of those graduates who did not mail back completed questionnaires.

## DEFINITIONS

The term "inexperienced" as used in the tables refers to those who have 12 months or less of prior professional work experience. The term "chemist" refers to one who received a degree in chemistry. The term "chemical engineer" refers to one who received a degree in chemical engineering. Salary tables are based only on salaries of those who found full-time employment in chemistry or chemical engineering. Postdoctoral salaries are analyzed separately. Salaries are reported in U.S. dollars.

The Technical Notes present methods for estimating sampling error and also explain certain discrepancies among some of the tables.

## 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

# TECHNICAL NOTES

## DISCREPANCIES AMONG TABLES

Because not all individuals responded to all of the survey items, some pairs of tables contain totals that should be identical but are not. For example, one table may group PhDs according to sex and another according to employer. The totals will differ unless the number who did not indicate their sex is the same as the number who did not indicate their employer.

## ESTIMATES OF MEDIAN SALARIES

Median salaries displayed within the cells of the salary tables are sample medians and are therefore subject to sampling error. This error could be quite large, especially when the number of respondents in the corresponding cell is small. Therefore, median salaries in cells with fewer than 15 respondents should not be used to estimate their corresponding population medians. Similarly, tables showing the 25th and 75th salary percentiles, and those showing the 10th and 90th salary percentiles, should have at least 25 respondents and 40 respondents, respectively.

## COMPARING SALARIES

Often questions arise concerning women's salaries as compared with men's, or chemists' salaries as compared with chemical engineers'. 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 samples. Whether a difference in salaries is "statistically significant" depends not only on the magnitude of the difference but also on the sample sizes and the magnitudes of the sample standard deviations.

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

## ESTIMATING SAMPLING ERROR FOR PERCENTS

Percents in this report are derived from the sample. If the entire population had received and returned questionnaires, most estimates would be somewhat different. How much different? Although this question does not have an exact answer, the table below does provide some guidance. To use the table, find the column headed by the percent (p) derived from the sample, and find the row appropriate for the sample size (n). (Approximations for p and n may be used.) Note the number in that column and that row of the table.

This number from the body of the table measures the precision with which the sample percent estimates the percent of the entire population. Specifically, if this procedure is applied repeatedly, about 95 times out of 100, the population percent will differ from the sample percent by no more than the amount shown in the table.

**Approximate Sampling Errors for Percents**

| n | p= 10% or 90% | p= 20% or 80% | p= 30% or 70% | p= 40% or 60% | p= 50% |
|---|---|---|---|---|---|
| 50 | 8.3% | 11.1% | 12.7% | 13.6% | 13.9% |
| 100 | 5.9 | 7.8 | 9.0 | 9.6 | 9.8 |
| 200 | 4.2 | 5.5 | 6.4 | 6.8 | 6.9 |
| 500 | 2.6 | 3.5 | 4.0 | 4.3 | 4.4 |
| 1000 | 1.9 | 2.5 | 2.8 | 3.0 | 3.1 |
| 2000 | 1.3 | 1.8 | 2.0 | 2.1 | 2.2 |
| 5000 | 0.8 | 1.1 | 1.3 | 1.4 | 1.4 |
| 10000 | 0.6 | 0.8 | 0.9 | 1.0 | 1.0 |

In Table B-1a for example, 499 respondents classified as chemists indicated their highest degree as the bachelor's degree, and their employment status as employed full-time in chemistry. The percent of this group who are women is listed as 40.9 percent (p=40.9). A "95% confidence interval" for this percent may be approximated by taking n and p to be about 500 and 40%. The above table shows an approximate sampling error of 4.3%. Hence, the 95% confidence interval is 36.6% to 45.2%. If estimates were made at this "level of confidence" from 100 similar samples, about 95 of the confidence intervals calculated from these samples would contain the true population percent.

## LIST OF TABLES

Table A-1

SALARIES of CHEMISTS employed FULL-TIME
by DEGREE and EXPERIENCE
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| WORK EXPERIENCE | | | |
| LESS THAN 12 MONTHS | | | |
| Median | 23,000 | 30,300 | 42,000 |
| Mean | 23,167 | 29,863 | 38,782 |
| Std Dev | 5,033 | 5,986 | 8,343 |
| Count | 318 | 79 | 150 |
| 12 TO 36 MONTHS | | | |
| Median | 24,116 | 29,600 | 42,500 |
| Mean | 23,870 | 28,583 | 38,559 |
| Std Dev | 4,556 | 5,439 | 10,416 |
| Count | 130 | 39 | 54 |
| MORE THAN 36 MONTHS | | | |
| Median | 29,950 | 34,500 | 43,250 |
| Mean | 28,872 | 34,025 | 39,428 |
| Std Dev | 5,920 | 8,137 | 10,609 |
| Count | 50 | 57 | 53 |
| TOTAL | | | |
| Median | 24,000 | 31,300 | 42,000 |
| Mean | 23,935 | 30,928 | 38,872 |
| Std Dev | 5,281 | 6,979 | 9,286 |
| Count | 498 | 175 | 257 |

Table A-2

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EXPERIENCE
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| WORK EXPERIENCE | | | |
| LESS THAN 12 MONTHS | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,223 | 35,697 | 45,802 |
| Std Dev | 3,208 | 4,300 | 4,704 |
| Count | 378 | 63 | 72 |
| 12 TO 36 MONTHS | | | |
| Median | 33,500 | 36,300 | 47,000 |
| Mean | 32,826 | 35,910 | 46,846 |
| Std Dev | 2,649 | 3,488 | 5,689 |
| Count | 169 | 37 | 26 |
| MORE THAN 36 MONTHS | | | |
| Median | 34,160 | 38,500 | 46,500 |
| Mean | 33,934 | 40,313 | 46,049 |
| Std Dev | 2,131 | 5,808 | 8,023 |
| Count | 18 | 23 | 16 |
| TOTAL | | | |
| Median | 33,000 | 36,500 | 47,000 |
| Mean | 32,458 | 36,606 | 46,064 |
| Std Dev | 3,042 | 4,710 | 5,400 |
| Count | 565 | 123 | 114 |

Table A-3

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
in PRIVATE INDUSTRY by SEX and DEGREE
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| SEX | | | |
| MEN | | | |
| Median | 24,000 | 32,000 | 43,260 |
| Mean | 24,523 | 32,290 | 42,329 |
| Std Dev | 4,961 | 3,899 | 4,808 |
| Count | 131 | 44 | 72 |
| WOMEN | | | |
| Median | 25,000 | 29,000 | 42,600 |
| Mean | 24,629 | 28,153 | 42,786 |
| Std Dev | 4,196 | 5,041 | 2,717 |
| Count | 96 | 17 | 37 |
| TOTAL | | | |
| Median | 25,000 | 31,550 | 42,950 |
| Mean | 24,568 | 31,118 | 42,487 |
| Std Dev | 4,644 | 4,610 | 4,194 |
| Count | 227 | 61 | 109 |

Table A-4

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME in PRIVATE INDUSTRY by SEX and DEGREE
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| SEX | | | |
| MEN | | | |
| Median | 33,000 | 36,000 | 47,600 |
| Mean | 32,514 | 36,095 | 46,900 |
| Std Dev | 2,766 | 2,973 | 3,408 |
| Count | 228 | 47 | 53 |
| WOMEN | | | |
| Median | 33,000 | 36,650 | 47,400 |
| Mean | 32,511 | 36,306 | 46,283 |
| Std Dev | 2,632 | 3,226 | 3,093 |
| Count | 132 | 8 | 7 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 47,500 |
| Mean | 32,513 | 36,126 | 46,827 |
| Std Dev | 2,714 | 2,981 | 3,353 |
| Count | 360 | 55 | 60 |

Table A-5

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and SEX
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| SEX | | | |
| MEN | | | |
| Median | 23,000 | 31,790 | 42,000 |
| Mean | 23,365 | 31,595 | 39,182 |
| Std Dev | 5,257 | 5,637 | 8,138 |
| Count | 173 | 53 | 97 |
| WOMEN | | | |
| Median | 23,000 | 24,000 | 41,570 |
| Mean | 22,932 | 26,260 | 38,075 |
| Std Dev | 4,761 | 5,092 | 8,731 |
| Count | 145 | 26 | 53 |
| TOTAL | | | |
| Median | 23,000 | 30,300 | 42,000 |
| Mean | 23,167 | 29,863 | 38,782 |
| Std Dev | 5,033 | 5,986 | 8,343 |
| Count | 318 | 79 | 150 |

Table A-6

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 25,000 | 31,550 | 42,950 |
| Mean | 24,568 | 31,118 | 42,487 |
| Std Dev | 4,644 | 4,610 | 4,194 |
| Count | 227 | 61 | 109 |
| COLLEGE OR UNIV | | | |
| Median | 18,730 | 22,300 | 27,000 |
| Mean | 18,571 | 23,650 | 27,342 |
| Std Dev | 2,073 | 3,204 | 7,741 |
| Count | 25 | 7 | 26 |
| HIGH SCHOOL | | | |
| Median | 20,000 | 19,250 | --- |
| Mean | 18,667 | 19,250 | --- |
| Std Dev | 6,906 | 2,475 | --- |
| Count | 10 | 2 | 0 |
| FEDERAL GOVT | | | |
| Median | 20,000 | 27,990 | 40,000 |
| Mean | 22,277 | 31,870 | 33,400 |
| Std Dev | 4,407 | 14,378 | 10,526 |
| Count | 11 | 4 | 5 |
| MILITARY | | | |
| Median | 20,000 | --- | 35,000 |
| Mean | 21,200 | --- | 35,000 |
| Std Dev | 3,633 | --- | 0 |
| Count | 6 | 0 | 1 |
| STATE OR LOCAL GOVT | | | |
| Median | 20,100 | 29,000 | 34,500 |
| Mean | 21,327 | 29,000 | 34,500 |
| Std Dev | 2,345 | 0 | 4,950 |
| Count | 5 | 1 | 2 |
| HOSPITAL OR LAB | | | |
| Median | 19,000 | 22,000 | 21,500 |
| Mean | 18,717 | 22,000 | 22,500 |
| Std Dev | 2,765 | 0 | 5,074 |
| Count | 25 | 2 | 3 |
| OTHER | | | |
| Median | 22,300 | 25,750 | 38,000 |
| Mean | 21,075 | 25,750 | 38,867 |
| Std Dev | 7,607 | 8,132 | 12,323 |
| Count | 8 | 2 | 4 |
| TOTAL | | | |
| Median | 23,000 | 30,300 | 42,000 |
| Mean | 23,167 | 29,863 | 38,782 |
| Std Dev | 5,033 | 5,986 | 8,343 |
| Count | 317 | 79 | 150 |

Table A-7

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 24,000 | 32,000 | 43,260 |
| Mean | 24,523 | 32,290 | 42,329 |
| Std Dev | 4,961 | 3,899 | 4,808 |
| Count | 131 | 44 | 72 |
| COLLEGE OR UNIV | | | |
| Median | 19,500 | 23,000 | 26,500 |
| Mean | 19,069 | 24,333 | 28,086 |
| Std Dev | 2,318 | 4,163 | 9,079 |
| Count | 14 | 3 | 16 |
| HIGH SCHOOL | | | |
| Median | 19,000 | 17,500 | --- |
| Mean | 15,333 | 17,500 | --- |
| Std Dev | 11,449 | 0 | --- |
| Count | 3 | 1 | 0 |
| FEDERAL GOVT | | | |
| Median | 19,500 | 31,980 | 40,500 |
| Mean | 21,360 | 34,493 | 35,750 |
| Std Dev | 4,886 | 16,395 | 10,532 |
| Count | 5 | 3 | 4 |
| MILITARY | | | |
| Median | 22,000 | --- | --- |
| Mean | 22,000 | --- | --- |
| Std Dev | 3,651 | --- | --- |
| Count | 5 | 0 | 0 |
| STATE OR LOCAL GOVT | | | |
| Median | 20,000 | 29,000 | 34,500 |
| Mean | 20,000 | 29,000 | 34,500 |
| Std Dev | 0 | 0 | 4,950 |
| Count | 1 | 1 | 2 |
| HOSPITAL OR LAB | | | |
| Median | 18,500 | --- | --- |
| Mean | 18,458 | --- | --- |
| Std Dev | 2,921 | --- | --- |
| Count | 10 | 0 | 0 |
| OTHER | | | |
| Median | 24,000 | 31,500 | 32,500 |
| Mean | 24,333 | 31,500 | 32,500 |
| Std Dev | 4,509 | 0 | 7,778 |
| Count | 3 | 1 | 3 |
| TOTAL | | | |
| Median | 23,000 | 31,790 | 42,000 |
| Mean | 23,365 | 31,595 | 39,182 |
| Std Dev | 5,257 | 5,637 | 8,138 |
| Count | 172 | 53 | 97 |

Table A-8

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 25,000 | 29,000 | 42,600 |
| Mean | 24,629 | 28,153 | 42,786 |
| Std Dev | 4,196 | 5,041 | 2,717 |
| Count | 96 | 17 | 37 |
| COLLEGE OR UNIV | | | |
| Median | 18,512 | 21,600 | 27,000 |
| Mean | 17,936 | 22,967 | 26,150 |
| Std Dev | 1,592 | 2,631 | 5,148 |
| Count | 11 | 4 | 10 |
| HIGH SCHOOL | | | |
| Median | 21,000 | 21,000 | --- |
| Mean | 20,333 | 21,000 | --- |
| Std Dev | 3,724 | 0 | --- |
| Count | 7 | 1 | 0 |
| FEDERAL GOVT | | | |
| Median | 22,423 | 24,000 | 24,000 |
| Mean | 23,041 | 24,000 | 24,000 |
| Std Dev | 4,266 | 0 | 0 |
| Count | 6 | 1 | 1 |
| MILITARY | | | |
| Median | 18,000 | --- | 35,000 |
| Mean | 18,000 | --- | 35,000 |
| Std Dev | 0 | --- | 0 |
| Count | 1 | 0 | 1 |
| STATE OR LOCAL GOVT | | | |
| Median | 20,850 | --- | --- |
| Mean | 21,659 | --- | --- |
| Std Dev | 2,568 | --- | --- |
| Count | 4 | 0 | 0 |
| HOSPITAL OR LAB | | | |
| Median | 19,000 | 22,000 | 21,500 |
| Mean | 18,890 | 22,000 | 22,500 |
| Std Dev | 2,747 | 0 | 5,074 |
| Count | 15 | 2 | 3 |
| OTHER | | | |
| Median | 20,600 | 20,000 | 51,600 |
| Mean | 19,120 | 20,000 | 51,600 |
| Std Dev | 8,853 | 0 | 0 |
| Count | 5 | 1 | 1 |
| TOTAL | | | |
| Median | 23,000 | 24,000 | 41,570 |
| Mean | 22,932 | 26,260 | 38,075 |
| Std Dev | 4,761 | 5,092 | 8,731 |
| Count | 145 | 26 | 53 |

Table A-9

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and WORK FUNCTION
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| WORK FUNCTION | | | |
| TEACHING | | | |
| Median | 20,000 | 21,000 | 27,500 |
| Mean | 18,800 | 22,300 | 29,112 |
| Std Dev | 6,524 | 4,237 | 5,446 |
| Count | 11 | 5 | 15 |
| MGMT OR ADMIN | | | |
| Median | 26,000 | 33,000 | 40,000 |
| Mean | 25,653 | 34,833 | 40,000 |
| Std Dev | 2,679 | 4,537 | 0 |
| Count | 11 | 4 | 1 |
| BASIC RESEARCH | | | |
| Median | 20,500 | 31,000 | 40,750 |
| Mean | 22,646 | 31,563 | 36,379 |
| Std Dev | 5,287 | 8,109 | 10,564 |
| Count | 60 | 16 | 36 |
| APPLIED RESEARCH | | | |
| Median | 24,000 | 31,600 | 42,500 |
| Mean | 24,430 | 30,871 | 41,216 |
| Std Dev | 4,691 | 4,484 | 6,346 |
| Count | 98 | 37 | 95 |
| PRODUCTION | | | |
| Median | 23,000 | 28,000 | --- |
| Mean | 23,185 | 27,149 | --- |
| Std Dev | 4,710 | 4,664 | --- |
| Count | 90 | 12 | 1 |
| OTHER | | | |
| Median | 21,000 | 29,000 | 38,000 |
| Mean | 21,636 | 27,520 | 38,000 |
| Std Dev | 5,106 | 5,697 | 0 |
| Count | 47 | 5 | 2 |
| TOTAL | | | |
| Median | 23,000 | 30,300 | 42,000 |
| Mean | 23,167 | 29,863 | 38,782 |
| Std Dev | 5,033 | 5,986 | 8,343 |
| Count | 317 | 79 | 150 |

Table A-10

SALARIES of INEXPERIENCED B.S. CHEMISTS employed FULL-TIME
by EMPLOYER and CERTIFICATION
1989 Starting Salary Survey

| | CURRICULUM APPROVED? | | TOTAL |
|---|---|---|---|
| | NO | YES | |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 24,000 | 25,000 | 25,000 |
| Mean | 24,274 | 24,829 | 24,568 |
| Std Dev | 5,073 | 4,231 | 4,644 |
| Count | 106 | 121 | 227 |
| COLLEGE OR UNIV | | | |
| Median | 18,730 | 19,000 | 18,730 |
| Mean | 18,351 | 18,900 | 18,571 |
| Std Dev | 1,751 | 2,547 | 2,073 |
| Count | 15 | 10 | 25 |
| HIGH SCHOOL | | | |
| Median | 19,500 | 22,000 | 20,000 |
| Mean | 17,417 | 21,167 | 18,667 |
| Std Dev | 8,052 | 3,819 | 6,906 |
| Count | 7 | 3 | 10 |
| FEDERAL GOVT | | | |
| Median | 22,423 | 19,300 | 20,000 |
| Mean | 23,343 | 19,433 | 22,277 |
| Std Dev | 4,786 | 513 | 4,407 |
| Count | 8 | 3 | 11 |
| MILITARY | | | |
| Median | 21,000 | 20,000 | 20,000 |
| Mean | 21,500 | 20,000 | 21,200 |
| Std Dev | 4,123 | 0 | 3,633 |
| Count | 5 | 1 | 6 |
| STATE OR LOCAL GOVT | | | |
| Median | 20,050 | 25,300 | 20,100 |
| Mean | 20,334 | 25,300 | 21,327 |
| Std Dev | 868 | 0 | 2,345 |
| Count | 4 | 1 | 5 |
| HOSPITAL OR LAB | | | |
| Median | 18,000 | 19,000 | 19,000 |
| Mean | 18,554 | 18,868 | 18,717 |
| Std Dev | 3,277 | 2,324 | 2,765 |
| Count | 12 | 13 | 25 |
| OTHER | | | |
| Median | 24,000 | 20,000 | 22,300 |
| Mean | 23,920 | 16,333 | 21,075 |
| Std Dev | 3,759 | 10,970 | 7,607 |
| Count | 5 | 3 | 8 |
| TOTAL | | | |
| Median | 22,000 | 24,000 | 23,000 |
| Mean | 22,798 | 23,554 | 23,167 |
| Std Dev | 5,269 | 4,761 | 5,033 |
| Count | 162 | 155 | 317 |

Table A-11

SALARIES of INEXPERIENCED MS and PhD CHEMISTS employed FULL-TIME
by DEGREE and DEGREE SPECIALTY
1989 Starting Salary Survey

| | HIGHEST DEGREE | |
|---|---|---|
| | MS | PHD |
| DEGREE SPECIALTY | | |
| BIOCHEMISTRY | | |
| Median | 30,000 | 30,750 |
| Mean | 31,389 | 31,083 |
| Std Dev | 10,154 | 10,375 |
| Count | 10 | 6 |
| ANALYTICAL CHEM | | |
| Median | 30,000 | 41,000 |
| Mean | 29,431 | 38,669 |
| Std Dev | 5,029 | 6,756 |
| Count | 21 | 43 |
| INORGANIC CHEM | | |
| Median | 29,000 | 42,450 |
| Mean | 27,546 | 40,136 |
| Std Dev | 5,276 | 8,082 |
| Count | 10 | 24 |
| ORGANIC CHEM | | |
| Median | 31,750 | 42,750 |
| Mean | 30,626 | 40,466 |
| Std Dev | 5,516 | 7,916 |
| Count | 28 | 53 |
| PHYSICAL CHEM | | |
| Median | 34,300 | 38,000 |
| Mean | 31,300 | 35,491 |
| Std Dev | 6,500 | 10,644 |
| Count | 4 | 20 |
| POLYMER CHEM | | |
| Median | 30,570 | 44,250 |
| Mean | 29,035 | 44,250 |
| Std Dev | 5,615 | 2,475 |
| Count | 4 | 2 |
| OTHER CHEM | | |
| Median | 27,000 | 34,710 |
| Mean | 27,000 | 34,710 |
| Std Dev | 1,414 | 9,800 |
| Count | 2 | 2 |
| TOTAL | | |
| Median | 30,300 | 42,000 |
| Mean | 29,863 | 38,782 |
| Std Dev | 5,986 | 8,343 |
| Count | 79 | 150 |

Table A-12

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| GEOGRAPHIC REGION | | | |
| Pacific | | | |
| Median | 25,000 | 21,300 | 42,250 |
| Mean | 25,378 | 26,100 | 41,063 |
| Std Dev | 5,158 | 9,462 | 6,977 |
| Count | 24 | 3 | 9 |
| Mountain | | | |
| Median | 19,150 | 26,790 | 41,000 |
| Mean | 20,717 | 26,830 | 41,600 |
| Std Dev | 5,494 | 8,746 | 8,616 |
| Count | 13 | 5 | 6 |
| West North Central | | | |
| Median | 20,000 | 32,700 | 40,000 |
| Mean | 19,911 | 32,123 | 33,014 |
| Std Dev | 3,176 | 4,861 | 11,706 |
| Count | 15 | 3 | 8 |
| West South Central | | | |
| Median | 23,000 | 32,000 | 44,000 |
| Mean | 23,201 | 29,333 | 41,339 |
| Std Dev | 5,488 | 5,345 | 6,776 |
| Count | 27 | 6 | 15 |
| East North Central | | | |
| Median | 24,000 | 31,000 | 42,750 |
| Mean | 23,650 | 30,630 | 39,505 |
| Std Dev | 4,118 | 4,716 | 7,497 |
| Count | 84 | 21 | 29 |
| East South Central | | | |
| Median | 20,000 | 25,650 | 40,075 |
| Mean | 20,977 | 25,650 | 39,638 |
| Std Dev | 4,315 | 6,576 | 6,328 |
| Count | 11 | 2 | 6 |
| Middle Atlantic | | | |
| Median | 25,700 | 32,000 | 42,000 |
| Mean | 24,969 | 31,629 | 38,863 |
| Std Dev | 5,679 | 5,284 | 8,343 |
| Count | 58 | 19 | 34 |
| South Atlantic | | | |
| Median | 20,390 | 27,600 | 42,000 |
| Mean | 21,470 | 27,289 | 36,098 |
| Std Dev | 4,869 | 5,137 | 9,419 |
| Count | 56 | 9 | 26 |
| New England | | | |
| Median | 22,500 | 30,000 | 42,000 |
| Mean | 23,094 | 31,250 | 39,100 |
| Std Dev | 4,338 | 9,377 | 8,644 |
| Count | 13 | 8 | 16 |
| TOTAL | | | |
| Median | 23,000 | 30,650 | 42,000 |
| Mean | 23,154 | 29,966 | 38,767 |
| Std Dev | 5,040 | 6,039 | 8,371 |
| Count | 301 | 76 | 149 |

Table A-13

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and SEX
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| SEX | | | |
| MEN | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,241 | 35,660 | 45,919 |
| Std Dev | 3,220 | 4,507 | 4,839 |
| Count | 242 | 53 | 63 |
| WOMEN | | | |
| Median | 33,000 | 36,000 | 45,500 |
| Mean | 32,189 | 35,828 | 44,998 |
| Std Dev | 3,198 | 3,342 | 3,774 |
| Count | 136 | 9 | 9 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,223 | 35,684 | 45,802 |
| Std Dev | 3,208 | 4,334 | 4,704 |
| Count | 378 | 62 | 72 |

Table A-14

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 33,000 | 36,050 | 47,500 |
| Mean | 32,513 | 36,133 | 46,827 |
| Std Dev | 2,714 | 2,954 | 3,353 |
| Count | 360 | 56 | 60 |
| COLLEGE OR UNIV | | | |
| Median | --- | --- | 41,000 |
| Mean | --- | --- | 42,533 |
| Std Dev | --- | --- | 7,633 |
| Count | 0 | 0 | 6 |
| FEDERAL GOVT | | | |
| Median | 25,885 | 32,000 | 38,500 |
| Mean | 26,362 | 32,166 | 38,500 |
| Std Dev | 4,846 | 5,753 | 3,512 |
| Count | 7 | 3 | 4 |
| MILITARY | | | |
| Median | 24,000 | 35,000 | --- |
| Mean | 21,300 | 35,000 | --- |
| Std Dev | 6,852 | 21,213 | --- |
| Count | 5 | 2 | 0 |
| STATE OR LOCAL GOVT | | | |
| Median | 29,750 | --- | --- |
| Mean | 29,750 | --- | --- |
| Std Dev | 354 | --- | --- |
| Count | 2 | 0 | 0 |
| OTHER | | | |
| Median | 31,810 | 29,500 | 40,000 |
| Mean | 31,805 | 29,500 | 40,000 |
| Std Dev | 992 | 4,950 | 12,728 |
| Count | 4 | 2 | 2 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,223 | 35,697 | 45,802 |
| Std Dev | 3,208 | 4,300 | 4,704 |
| Count | 378 | 63 | 72 |

Table A-15

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 33,000 | 36,000 | 47,600 |
| Mean | 32,514 | 36,095 | 46,900 |
| Std Dev | 2,766 | 2,973 | 3,408 |
| Count | 228 | 47 | 53 |
| COLLEGE OR UNIV | | | |
| Median | --- | --- | 41,000 |
| Mean | --- | --- | 43,550 |
| Std Dev | --- | --- | 9,564 |
| Count | 0 | 0 | 4 |
| FEDERAL GOVT | | | |
| Median | 29,830 | 32,249 | 38,500 |
| Mean | 29,376 | 32,249 | 38,500 |
| Std Dev | 3,526 | 8,133 | 3,512 |
| Count | 4 | 2 | 4 |
| MILITARY | | | |
| Median | 24,000 | 35,000 | --- |
| Mean | 21,500 | 35,000 | --- |
| Std Dev | 7,895 | 21,213 | --- |
| Count | 4 | 2 | 0 |
| STATE OR LOCAL GOVT | | | |
| Median | 29,750 | --- | --- |
| Mean | 29,750 | --- | --- |
| Std Dev | 354 | --- | --- |
| Count | 2 | 0 | 0 |
| OTHER | | | |
| Median | 31,810 | 29,500 | 40,000 |
| Mean | 31,805 | 29,500 | 40,000 |
| Std Dev | 992 | 4,950 | 12,728 |
| Count | 4 | 2 | 2 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,241 | 35,660 | 45,919 |
| Std Dev | 3,220 | 4,507 | 4,839 |
| Count | 242 | 53 | 63 |

Table A-16

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| EMPLOYER | | | |
| PRIVATE INDUSTRY | | | |
| Median | 33,000 | 36,650 | 47,400 |
| Mean | 32,511 | 36,306 | 46,283 |
| Std Dev | 2,632 | 3,226 | 3,093 |
| Count | 132 | 8 | 7 |
| COLLEGE OR UNIV | | | |
| Median | --- | --- | 40,500 |
| Mean | --- | --- | 40,500 |
| Std Dev | --- | --- | 2,121 |
| Count | 0 | 0 | 2 |
| FEDERAL GOVT | | | |
| Median | 20,643 | 32,000 | --- |
| Mean | 22,343 | 32,000 | --- |
| Std Dev | 3,069 | 0 | --- |
| Count | 3 | 1 | 0 |
| MILITARY | | | |
| Median | 20,500 | --- | --- |
| Mean | 20,500 | --- | --- |
| Std Dev | 0 | --- | --- |
| Count | 1 | 0 | 0 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 45,500 |
| Mean | 32,189 | 35,828 | 44,998 |
| Std Dev | 3,198 | 3,342 | 3,774 |
| Count | 136 | 9 | 9 |

Table A-17

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and WORK FUNCTION
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| WORK FUNCTION | | | |
| TEACHING | | | |
| Median | 29,500 | --- | 42,000 |
| Mean | 28,033 | --- | 41,000 |
| Std Dev | 3,536 | --- | 1,732 |
| Count | 3 | 0 | 3 |
| MGMT OR ADMIN | | | |
| Median | 31,905 | 35,000 | 52,000 |
| Mean | 31,198 | 35,002 | 52,000 |
| Std Dev | 2,276 | 10,817 | 0 |
| Count | 13 | 5 | 1 |
| BASIC RESEARCH | | | |
| Median | 32,100 | 37,000 | 46,000 |
| Mean | 29,560 | 36,175 | 44,813 |
| Std Dev | 5,444 | 3,009 | 5,989 |
| Count | 9 | 4 | 12 |
| APPLIED RESEARCH | | | |
| Median | 33,000 | 36,000 | 47,500 |
| Mean | 32,556 | 35,763 | 46,449 |
| Std Dev | 3,019 | 3,000 | 3,854 |
| Count | 169 | 31 | 55 |
| PRODUCTION | | | |
| Median | 33,000 | 36,000 | --- |
| Mean | 32,547 | 36,529 | --- |
| Std Dev | 2,511 | 2,709 | --- |
| Count | 137 | 17 | 0 |
| OTHER | | | |
| Median | 32,400 | 33,550 | 31,000 |
| Mean | 31,082 | 33,262 | 31,000 |
| Std Dev | 4,590 | 6,526 | 0 |
| Count | 45 | 6 | 1 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,222 | 35,697 | 45,802 |
| Std Dev | 3,212 | 4,300 | 4,704 |
| Count | 376 | 63 | 72 |

Table A-18

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1989 Starting Salary Survey

| | HIGHEST DEGREE | | |
|---|---|---|---|
| | BS | MS | PHD |
| GEOGRAPHIC REGION | | | |
| Pacific | | | |
| Median | 32,450 | 35,875 | 47,250 |
| Mean | 32,623 | 36,294 | 47,438 |
| Std Dev | 4,459 | 3,335 | 2,412 |
| Count | 33 | 8 | 8 |
| Mountain | | | |
| Median | 33,000 | 35,000 | 45,000 |
| Mean | 33,375 | 35,000 | 45,000 |
| Std Dev | 1,702 | 0 | 5,657 |
| Count | 4 | 1 | 2 |
| West North Central | | | |
| Median | 32,400 | 36,500 | 45,275 |
| Mean | 31,641 | 36,500 | 45,275 |
| Std Dev | 2,627 | 0 | 3,005 |
| Count | 24 | 1 | 2 |
| West South Central | | | |
| Median | 33,400 | 36,000 | 48,000 |
| Mean | 33,368 | 35,165 | 47,353 |
| Std Dev | 1,769 | 2,964 | 2,793 |
| Count | 87 | 16 | 9 |
| East North Central | | | |
| Median | 32,950 | 36,600 | 48,250 |
| Mean | 32,401 | 36,219 | 47,833 |
| Std Dev | 2,341 | 4,405 | 3,959 |
| Count | 62 | 11 | 12 |
| East South Central | | | |
| Median | 33,000 | 42,500 | 44,400 |
| Mean | 32,067 | 42,500 | 44,400 |
| Std Dev | 3,563 | 10,607 | 0 |
| Count | 21 | 2 | 1 |
| Middle Atlantic | | | |
| Median | 32,500 | 37,300 | 46,800 |
| Mean | 31,632 | 36,593 | 45,242 |
| Std Dev | 3,286 | 2,339 | 4,558 |
| Count | 77 | 7 | 25 |
| South Atlantic | | | |
| Median | 32,500 | 34,000 | 47,500 |
| Mean | 31,573 | 33,040 | 44,263 |
| Std Dev | 3,544 | 6,260 | 5,946 |
| Count | 38 | 10 | 9 |
| New England | | | |
| Median | 32,470 | 35,250 | 35,000 |
| Mean | 31,601 | 36,017 | 37,067 |
| Std Dev | 2,671 | 3,365 | 7,322 |
| Count | 25 | 6 | 3 |
| TOTAL | | | |
| Median | 33,000 | 36,000 | 47,000 |
| Mean | 32,287 | 35,654 | 45,728 |
| Std Dev | 2,994 | 4,321 | 4,696 |
| Count | 371 | 62 | 71 |

Table B-1a

CHEMISTRY GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1989 Starting Salary Survey

| | BACHELORS | | | MASTERS | | | DOCTORATE | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| FULL-TIME IN CHEMISTRY | | | | | | | | | |
| Count | 295 | 204 | 499 | 109 | 67 | 176 | 177 | 82 | 259 |
| Row Percent | 59.1% | 40.9% | 100.0% | 61.9% | 38.1% | 100.0% | 68.3% | 31.7% | 100.0% |
| Column Percent | 34.0% | 35.4% | 34.5% | 47.8% | 55.8% | 50.6% | 45.3% | 56.9% | 48.4% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | | |
| Count | 84 | 56 | 140 | 11 | 8 | 19 | 15 | 5 | 20 |
| Row Percent | 60.0% | 40.0% | 100.0% | 57.9% | 42.1% | 100.0% | 75.0% | 25.0% | 100.0% |
| Column Percent | 9.7% | 9.7% | 9.7% | 4.8% | 6.7% | 5.5% | 3.8% | 3.5% | 3.7% |
| FELLOWSHIP | | | | | | | | | |
| Count | 282 | 165 | 447 | 97 | 29 | 126 | 172 | 44 | 216 |
| Row Percent | 63.1% | 36.9% | 100.0% | 77.0% | 23.0% | 100.0% | 79.6% | 20.4% | 100.0% |
| Column Percent | 32.5% | 28.6% | 30.9% | 42.5% | 24.2% | 36.2% | 44.0% | 30.6% | 40.4% |
| SEEKING EMPLOYMENT | | | | | | | | | |
| Count | 67 | 57 | 124 | 5 | 7 | 12 | 22 | 11 | 33 |
| Row Percent | 54.0% | 46.0% | 100.0% | 41.7% | 58.3% | 100.0% | 66.7% | 33.3% | 100.0% |
| Column Percent | 7.7% | 9.9% | 8.6% | 2.2% | 5.8% | 3.4% | 5.6% | 7.6% | 6.2% |
| NOT SEEKING EMPLOYMENT | | | | | | | | | |
| Count | 140 | 95 | 235 | 6 | 9 | 15 | 5 | 2 | 7 |
| Row Percent | 59.6% | 40.4% | 100.0% | 40.0% | 60.0% | 100.0% | 71.4% | 28.6% | 100.0% |
| Column Percent | 16.1% | 16.5% | 16.3% | 2.6% | 7.5% | 4.3% | 1.3% | 1.4% | 1.3% |
| TOTAL | | | | | | | | | |
| Count | 868 | 577 | 1445 | 228 | 120 | 348 | 391 | 144 | 535 |
| Row Percent | 60.1% | 39.9% | 100.0% | 65.5% | 34.5% | 100.0% | 73.1% | 26.9% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-1b

CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989, SEX, and DEGREE
1989 Starting Salary Survey

| | BACHELORS | | | MASTERS | | | DOCTORATE | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | | |
| YES, FULL-TIME | | | | | | | | | |
| Count | 549 | 300 | 849 | 107 | 37 | 144 | 44 | 12 | 56 |
| Row Percent | 64.7% | 35.3% | 100.0% | 74.3% | 25.7% | 100.0% | 78.6% | 21.4% | 100.0% |
| Column Percent | 53.7% | 46.7% | 51.0% | 45.9% | 29.1% | 40.0% | 11.6% | 8.5% | 10.8% |
| YES, PART-TIME | | | | | | | | | |
| Count | 109 | 65 | 174 | 12 | 7 | 19 | 6 | 6 | 12 |
| Row Percent | 62.6% | 37.4% | 100.0% | 63.2% | 36.8% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 10.7% | 10.1% | 10.5% | 5.2% | 5.5% | 5.3% | 1.6% | 4.2% | 2.3% |
| NO | | | | | | | | | |
| Count | 364 | 277 | 641 | 114 | 83 | 197 | 328 | 124 | 452 |
| Row Percent | 56.8% | 43.2% | 100.0% | 57.9% | 42.1% | 100.0% | 72.6% | 27.4% | 100.0% |
| Column Percent | 35.6% | 43.1% | 38.5% | 48.9% | 65.4% | 54.7% | 86.8% | 87.3% | 86.9% |
| TOTAL | | | | | | | | | |
| Count | 1022 | 642 | 1664 | 233 | 127 | 360 | 378 | 142 | 520 |
| Row Percent | 61.4% | 38.6% | 100.0% | 64.7% | 35.3% | 100.0% | 72.7% | 27.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-2a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| EMPLOYMENT STATUS | | | | |
| FULL-TIME IN CHEMISTRY | | | | |
| Count | 454 | 26 | 11 | 6 |
| Row Percent | 91.3% | 5.2% | 2.2% | 1.2% |
| Column Percent | 34.8% | 38.8% | 23.9% | 24.0% |
| FULL-TIME IN NON-CHEMISTRY | | | | |
| Count | 132 | 6 | 2 | 0 |
| Row Percent | 94.3% | 4.3% | 1.4% | .0% |
| Column Percent | 10.1% | 9.0% | 4.3% | .0% |
| FELLOWSHIP | | | | |
| Count | 418 | 12 | 8 | 10 |
| Row Percent | 93.3% | 2.7% | 1.8% | 2.2% |
| Column Percent | 32.0% | 17.9% | 17.4% | 40.0% |
| SEEKING EMPLOYMENT | | | | |
| Count | 97 | 9 | 11 | 6 |
| Row Percent | 78.9% | 7.3% | 8.9% | 4.9% |
| Column Percent | 7.4% | 13.4% | 23.9% | 24.0% |
| NOT SEEKING EMPLOYMENT | | | | |
| Count | 204 | 14 | 14 | 3 |
| Row Percent | 86.8% | 6.0% | 6.0% | 1.3% |
| Column Percent | 15.6% | 20.9% | 30.4% | 12.0% |
| TOTAL | | | | |
| Count | 1305 | 67 | 46 | 25 |
| Row Percent | 90.4% | 4.6% | 3.2% | 1.7% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-2a Continued

MS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| EMPLOYMENT STATUS | | | | |
| FULL-TIME IN CHEMISTRY | | | | |
| Count | 148 | 8 | 4 | 16 |
| Row Percent | 84.1% | 4.5% | 2.3% | 9.1% |
| Column Percent | 56.9% | 61.5% | 30.8% | 25.8% |
| FULL-TIME IN NON-CHEMISTRY | | | | |
| Count | 16 | 1 | 1 | 1 |
| Row Percent | 84.2% | 5.3% | 5.3% | 5.3% |
| Column Percent | 6.2% | 7.7% | 7.7% | 1.6% |
| FELLOWSHIP | | | | |
| Count | 77 | 4 | 5 | 40 |
| Row Percent | 61.1% | 3.2% | 4.0% | 31.7% |
| Column Percent | 29.6% | 30.8% | 38.5% | 64.5% |
| SEEKING EMPLOYMENT | | | | |
| Count | 7 | 0 | 2 | 3 |
| Row Percent | 58.3% | .0% | 16.7% | 25.0% |
| Column Percent | 2.7% | .0% | 15.4% | 4.8% |
| NOT SEEKING EMPLOYMENT | | | | |
| Count | 12 | 0 | 1 | 2 |
| Row Percent | 80.0% | .0% | 6.7% | 13.3% |
| Column Percent | 4.6% | .0% | 7.7% | 3.2% |
| TOTAL | | | | |
| Count | 260 | 13 | 13 | 62 |
| Row Percent | 74.7% | 3.7% | 3.7% | 17.8% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-2a Continued

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| EMPLOYMENT STATUS | | | | |
| FULL-TIME IN CHEMISTRY | | | | |
| Count | 209 | 10 | 6 | 35 |
| Row Percent | 80.4% | 3.8% | 2.3% | 13.5% |
| Column Percent | 54.3% | 58.8% | 33.3% | 29.9% |
| FULL-TIME IN NON-CHEMISTRY | | | | |
| Count | 15 | 0 | 1 | 4 |
| Row Percent | 75.0% | .0% | 5.0% | 20.0% |
| Column Percent | 3.9% | .0% | 5.6% | 3.4% |
| FELLOWSHIP | | | | |
| Count | 139 | 6 | 10 | 62 |
| Row Percent | 64.1% | 2.8% | 4.6% | 28.6% |
| Column Percent | 36.1% | 35.3% | 55.6% | 53.0% |
| SEEKING EMPLOYMENT | | | | |
| Count | 17 | 1 | 1 | 14 |
| Row Percent | 51.5% | 3.0% | 3.0% | 42.4% |
| Column Percent | 4.4% | 5.9% | 5.6% | 12.0% |
| NOT SEEKING EMPLOYMENT | | | | |
| Count | 5 | 0 | 0 | 2 |
| Row Percent | 71.4% | .0% | .0% | 28.6% |
| Column Percent | 1.3% | .0% | .0% | 1.7% |
| TOTAL | | | | |
| Count | 385 | 17 | 18 | 117 |
| Row Percent | 71.7% | 3.2% | 3.4% | 21.8% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-2b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | |
| YES, FULL-TIME | | | | |
| Count | 771 | 39 | 26 | 14 |
| Row Percent | 90.7% | 4.6% | 3.1% | 1.6% |
| Column Percent | 51.3% | 47.6% | 50.0% | 56.0% |
| YES, PART-TIME | | | | |
| Count | 153 | 9 | 6 | 5 |
| Row Percent | 88.4% | 5.2% | 3.5% | 2.9% |
| Column Percent | 10.2% | 11.0% | 11.5% | 20.0% |
| NO | | | | |
| Count | 579 | 34 | 20 | 6 |
| Row Percent | 90.6% | 5.3% | 3.1% | .9% |
| Column Percent | 38.5% | 41.5% | 38.5% | 24.0% |
| TOTAL | | | | |
| Count | 1503 | 82 | 52 | 25 |
| Row Percent | 90.4% | 4.9% | 3.1% | 1.5% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-2b Continued

MS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | |
| YES, FULL-TIME | | | | |
| Count | 87 | 5 | 6 | 46 |
| Row Percent | 60.4% | 3.5% | 4.2% | 31.9% |
| Column Percent | 32.5% | 35.7% | 42.9% | 71.9% |
| YES, PART-TIME | | | | |
| Count | 16 | 0 | 0 | 3 |
| Row Percent | 84.2% | .0% | .0% | 15.8% |
| Column Percent | 6.0% | .0% | .0% | 4.7% |
| NO | | | | |
| Count | 165 | 9 | 8 | 15 |
| Row Percent | 83.8% | 4.6% | 4.1% | 7.6% |
| Column Percent | 61.6% | 64.3% | 57.1% | 23.4% |
| TOTAL | | | | |
| Count | 268 | 14 | 14 | 64 |
| Row Percent | 74.4% | 3.9% | 3.9% | 17.8% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-2b Continued

PHD CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | |
| YES, FULL-TIME | | | | |
| Count | 31 | 3 | 0 | 22 |
| Row Percent | 55.4% | 5.4% | .0% | 39.3% |
| Column Percent | 8.2% | 17.6% | .0% | 19.5% |
| YES, PART-TIME | | | | |
| Count | 8 | 0 | 0 | 4 |
| Row Percent | 66.7% | .0% | .0% | 33.3% |
| Column Percent | 2.1% | .0% | .0% | 3.5% |
| NO | | | | |
| Count | 337 | 14 | 16 | 87 |
| Row Percent | 74.2% | 3.1% | 3.5% | 19.2% |
| Column Percent | 89.6% | 82.4% | 100.0% | 77.0% |
| TOTAL | | | | |
| Count | 376 | 17 | 16 | 113 |
| Row Percent | 72.0% | 3.3% | 3.1% | 21.6% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-3a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| EMPLOYMENT STATUS | | | | | | | | |
| FULL-TIME IN CHEMISTRY | | | | | | | | |
| Count | 3 | 2 | 5 | 16 | 11 | 13 | 441 | 5 |
| Row Percent | .6% | .4% | 1.0% | 3.2% | 2.2% | 2.6% | 88.9% | 1.0% |
| Column Percent | 33.3% | 14.3% | 15.6% | 33.3% | 28.9% | 40.6% | 35.3% | 31.3% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | |
| Count | 0 | 1 | 4 | 3 | 1 | 3 | 125 | 2 |
| Row Percent | .0% | .7% | 2.9% | 2.2% | .7% | 2.2% | 89.9% | 1.4% |
| Column Percent | .0% | 7.1% | 12.5% | 6.3% | 2.6% | 9.4% | 10.0% | 12.5% |
| FELLOWSHIP | | | | | | | | |
| Count | 2 | 3 | 13 | 10 | 9 | 6 | 399 | 4 |
| Row Percent | .4% | .7% | 2.9% | 2.2% | 2.0% | 1.3% | 89.5% | .9% |
| Column Percent | 22.2% | 21.4% | 40.6% | 20.8% | 23.7% | 18.8% | 31.9% | 25.0% |
| SEEKING EMPLOYMENT | | | | | | | | |
| Count | 2 | 2 | 5 | 4 | 10 | 3 | 95 | 3 |
| Row Percent | 1.6% | 1.6% | 4.0% | 3.2% | 8.1% | 2.4% | 76.6% | 2.4% |
| Column Percent | 22.2% | 14.3% | 15.6% | 8.3% | 26.3% | 9.4% | 7.6% | 18.8% |
| NOT SEEKING EMPLOYMENT | | | | | | | | |
| Count | 2 | 6 | 5 | 15 | 7 | 7 | 191 | 2 |
| Row Percent | .9% | 2.6% | 2.1% | 6.4% | 3.0% | 3.0% | 81.3% | .9% |
| Column Percent | 22.2% | 42.9% | 15.6% | 31.3% | 18.4% | 21.9% | 15.3% | 12.5% |
| TOTAL | | | | | | | | |
| Count | 9 | 14 | 32 | 48 | 38 | 32 | 1251 | 16 |
| Row Percent | .6% | 1.0% | 2.2% | 3.3% | 2.6% | 2.2% | 86.9% | 1.1% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-3a Continued

MS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| EMPLOYMENT STATUS | | | | | | | | |
| FULL-TIME IN CHEMISTRY | | | | | | | | |
| Count | 0 | 1 | 18 | 6 | 3 | 2 | 142 | 1 |
| Row Percent | .0% | .6% | 10.4% | 3.5% | 1.7% | 1.2% | 82.1% | .6% |
| Column Percent | .0% | 25.0% | 38.3% | 33.3% | 37.5% | 22.2% | 55.5% | 50.0% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | |
| Count | 0 | 0 | 0 | 1 | 0 | 2 | 16 | 0 |
| Row Percent | .0% | .0% | .0% | 5.3% | .0% | 10.5% | 84.2% | .0% |
| Column Percent | .0% | .0% | .0% | 5.6% | .0% | 22.2% | 6.3% | .0% |
| FELLOWSHIP | | | | | | | | |
| Count | 1 | 2 | 24 | 9 | 5 | 4 | 80 | 1 |
| Row Percent | .8% | 1.6% | 19.0% | 7.1% | 4.0% | 3.2% | 63.5% | .8% |
| Column Percent | 100.0% | 50.0% | 51.1% | 50.0% | 62.5% | 44.4% | 31.3% | 50.0% |
| SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 1 | 3 | 2 | 0 | 0 | 6 | 0 |
| Row Percent | .0% | 8.3% | 25.0% | 16.7% | .0% | .0% | 50.0% | .0% |
| Column Percent | .0% | 25.0% | 6.4% | 11.1% | .0% | .0% | 2.3% | .0% |
| NOT SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 2 | 0 | 0 | 1 | 12 | 0 |
| Row Percent | .0% | .0% | 13.3% | .0% | .0% | 6.7% | 80.0% | .0% |
| Column Percent | .0% | .0% | 4.3% | .0% | .0% | 11.1% | 4.7% | .0% |
| TOTAL | | | | | | | | |
| Count | 1 | 4 | 47 | 18 | 8 | 9 | 256 | 2 |
| Row Percent | .3% | 1.2% | 13.6% | 5.2% | 2.3% | 2.6% | 74.2% | .6% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-3a Continued

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| EMPLOYMENT STATUS | | | | | | | | |
| FULL-TIME IN CHEMISTRY | | | | | | | | |
| Count | 0 | 5 | 20 | 12 | 3 | 7 | 213 | 0 |
| Row Percent | .0% | 1.9% | 7.7% | 4.6% | 1.2% | 2.7% | 81.9% | .0% |
| Column Percent | .0% | 45.5% | 26.7% | 34.3% | 42.9% | 58.3% | 54.2% | .0% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | |
| Count | 0 | 0 | 3 | 2 | 0 | 0 | 15 | 0 |
| Row Percent | .0% | .0% | 15.0% | 10.0% | .0% | .0% | 75.0% | .0% |
| Column Percent | .0% | .0% | 4.0% | 5.7% | .0% | .0% | 3.8% | .0% |
| FELLOWSHIP | | | | | | | | |
| Count | 0 | 4 | 44 | 18 | 3 | 3 | 141 | 4 |
| Row Percent | .0% | 1.8% | 20.3% | 8.3% | 1.4% | 1.4% | 65.0% | 1.8% |
| Column Percent | .0% | 36.4% | 58.7% | 51.4% | 42.9% | 25.0% | 35.9% | 100.0% |
| SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 2 | 8 | 2 | 1 | 2 | 18 | 0 |
| Row Percent | .0% | 6.1% | 24.2% | 6.1% | 3.0% | 6.1% | 54.5% | .0% |
| Column Percent | .0% | 18.2% | 10.7% | 5.7% | 14.3% | 16.7% | 4.6% | .0% |
| NOT SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 0 |
| Row Percent | .0% | .0% | .0% | 14.3% | .0% | .0% | 85.7% | .0% |
| Column Percent | .0% | .0% | .0% | 2.9% | .0% | .0% | 1.5% | .0% |
| TOTAL | | | | | | | | |
| Count | 0 | 11 | 75 | 35 | 7 | 12 | 393 | 4 |
| Row Percent | .0% | 2.0% | 14.0% | 6.5% | 1.3% | 2.2% | 73.2% | .7% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-3b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | |
| YES, FULL-TIME | | | | | | | | |
| Count | 4 | 10 | 26 | 37 | 21 | 16 | 727 | 6 |
| Row Percent | .5% | 1.2% | 3.1% | 4.4% | 2.5% | 1.9% | 85.8% | .7% |
| Column Percent | 44.4% | 66.7% | 66.7% | 58.7% | 43.8% | 43.2% | 50.8% | 37.5% |
| YES, PART-TIME | | | | | | | | |
| Count | 2 | 1 | 1 | 5 | 6 | 3 | 154 | 2 |
| Row Percent | 1.1% | .6% | .6% | 2.9% | 3.4% | 1.7% | 88.5% | 1.1% |
| Column Percent | 22.2% | 6.7% | 2.6% | 7.9% | 12.5% | 8.1% | 10.8% | 12.5% |
| NO | | | | | | | | |
| Count | 3 | 4 | 12 | 21 | 21 | 18 | 549 | 8 |
| Row Percent | .5% | .6% | 1.9% | 3.3% | 3.3% | 2.8% | 86.3% | 1.3% |
| Column Percent | 33.3% | 26.7% | 30.8% | 33.3% | 43.8% | 48.6% | 38.4% | 50.0% |
| TOTAL | | | | | | | | |
| Count | 9 | 15 | 39 | 63 | 48 | 37 | 1430 | 16 |
| Row Percent | .5% | .9% | 2.4% | 3.8% | 2.9% | 2.2% | 86.3% | 1.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-3b Continued

MS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | |
| YES, FULL-TIME | | | | | | | | |
| Count | 1 | 2 | 31 | 9 | 6 | 4 | 90 | 1 |
| Row Percent | .7% | 1.4% | 21.5% | 6.3% | 4.2% | 2.8% | 62.5% | .7% |
| Column Percent | 100.0% | 50.0% | 60.8% | 50.0% | 66.7% | 44.4% | 34.2% | 50.0% |
| YES, PART-TIME | | | | | | | | |
| Count | 0 | 0 | 2 | 1 | 0 | 3 | 13 | 0 |
| Row Percent | .0% | .0% | 10.5% | 5.3% | .0% | 15.8% | 68.4% | .0% |
| Column Percent | .0% | .0% | 3.9% | 5.6% | .0% | 33.3% | 4.9% | .0% |
| NO | | | | | | | | |
| Count | 0 | 2 | 18 | 8 | 3 | 2 | 160 | 1 |
| Row Percent | .0% | 1.0% | 9.3% | 4.1% | 1.5% | 1.0% | 82.5% | .5% |
| Column Percent | .0% | 50.0% | 35.3% | 44.4% | 33.3% | 22.2% | 60.8% | 50.0% |
| TOTAL | | | | | | | | |
| Count | 1 | 4 | 51 | 18 | 9 | 9 | 263 | 2 |
| Row Percent | .3% | 1.1% | 14.3% | 5.0% | 2.5% | 2.5% | 73.7% | .6% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-3b Continued

PHD CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | |
| YES, FULL-TIME | | | | | | | | |
| Count | 0 | 3 | 13 | 7 | 0 | 2 | 31 | 0 |
| Row Percent | .0% | 5.4% | 23.2% | 12.5% | .0% | 3.6% | 55.4% | .0% |
| Column Percent | .0% | 27.3% | 18.3% | 21.9% | .0% | 14.3% | 8.1% | .0% |
| YES, PART-TIME | | | | | | | | |
| Count | 0 | 0 | 3 | 0 | 1 | 0 | 8 | 0 |
| Row Percent | .0% | .0% | 25.0% | .0% | 8.3% | .0% | 66.7% | .0% |
| Column Percent | .0% | .0% | 4.2% | .0% | 14.3% | .0% | 2.1% | .0% |
| NO | | | | | | | | |
| Count | 0 | 8 | 55 | 25 | 6 | 12 | 342 | 5 |
| Row Percent | .0% | 1.8% | 12.1% | 5.5% | 1.3% | 2.6% | 75.5% | 1.1% |
| Column Percent | .0% | 72.7% | 77.5% | 78.1% | 85.7% | 85.7% | 89.8% | 100.0% |
| TOTAL | | | | | | | | |
| Count | 0 | 11 | 71 | 32 | 7 | 14 | 381 | 5 |
| Row Percent | .0% | 2.1% | 13.6% | 6.1% | 1.3% | 2.7% | 73.1% | 1.0% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-4a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CERTIFICATION
1989 Starting Salary Survey

| | CURRICULUM APPROVED? | |
|---|---|---|
| | NO | YES |
| EMPLOYMENT STATUS | | |
| FULL-TIME IN CHEMISTRY | | |
| Count | 249 | 250 |
| Row Percent | 49.9% | 50.1% |
| Column Percent | 32.4% | 36.9% |
| FULL-TIME IN NON-CHEMISTRY | | |
| Count | 85 | 55 |
| Row Percent | 60.7% | 39.3% |
| Column Percent | 11.1% | 8.1% |
| FELLOWSHIP | | |
| Count | 177 | 271 |
| Row Percent | 39.5% | 60.5% |
| Column Percent | 23.0% | 40.0% |
| SEEKING EMPLOYMENT | | |
| Count | 80 | 44 |
| Row Percent | 64.5% | 35.5% |
| Column Percent | 10.4% | 6.5% |
| NOT SEEKING EMPLOYMENT | | |
| Count | 177 | 58 |
| Row Percent | 75.3% | 24.7% |
| Column Percent | 23.0% | 8.6% |
| TOTAL | | |
| Count | 768 | 678 |
| Row Percent | 53.1% | 46.9% |
| Column Percent | 100.0% | 100.0% |

Table B-4b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES AND CERTIFICATION
1989 Starting Salary Survey

| | CURRICULUM APPROVED? | |
|---|---|---|
| | NO | YES |
| PURSUE ADVANCED STUDIES IN FALL 89 | | |
| YES, FULL-TIME | | |
| Count | 475 | 375 |
| Row Percent | 55.9% | 44.1% |
| Column Percent | 51.1% | 51.0% |
| YES, PART-TIME | | |
| Count | 89 | 85 |
| Row Percent | 51.1% | 48.9% |
| Column Percent | 9.6% | 11.5% |
| NO | | |
| Count | 365 | 276 |
| Row Percent | 56.9% | 43.1% |
| Column Percent | 39.3% | 37.5% |
| TOTAL | | |
| Count | 929 | 736 |
| Row Percent | 55.8% | 44.2% |
| Column Percent | 100.0% | 100.0% |

Table B-5

MASTERS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1989 Starting Salary Survey

| | EMPLOYMENT STATUS | | | | | TOTAL |
|---|---|---|---|---|---|---|
| | FT IN CHEM | FT IN NONCHEM | FELLOW-SHIP | SEEKING EMPL | NOT SEEK EMPL | |
| FIELD OF HIGHEST DEGREE | | | | | | |
| BIOCHEMISTRY | | | | | | |
| Count | 23 | 2 | 7 | 0 | 5 | 37 |
| Row Percent | 62.2% | 5.4% | 18.9% | .0% | 13.5% | 100.0% |
| Column Percent | 13.1% | 10.5% | 5.6% | .0% | 33.3% | 10.6% |
| ANALYTICAL CHEM | | | | | | |
| Count | 42 | 3 | 15 | 4 | 3 | 67 |
| Row Percent | 62.7% | 4.5% | 22.4% | 6.0% | 4.5% | 100.0% |
| Column Percent | 23.9% | 15.8% | 11.9% | 33.3% | 20.0% | 19.3% |
| INORGANIC CHEM | | | | | | |
| Count | 22 | 3 | 30 | 1 | 1 | 57 |
| Row Percent | 38.6% | 5.3% | 52.6% | 1.8% | 1.8% | 100.0% |
| Column Percent | 12.5% | 15.8% | 23.8% | 8.3% | 6.7% | 16.4% |
| ORGANIC CHEM | | | | | | |
| Count | 59 | 3 | 39 | 4 | 4 | 109 |
| Row Percent | 54.1% | 2.8% | 35.8% | 3.7% | 3.7% | 100.0% |
| Column Percent | 33.5% | 15.8% | 31.0% | 33.3% | 26.7% | 31.3% |
| PHYSICAL CHEM | | | | | | |
| Count | 9 | 2 | 28 | 2 | 2 | 43 |
| Row Percent | 20.9% | 4.7% | 65.1% | 4.7% | 4.7% | 100.0% |
| Column Percent | 5.1% | 10.5% | 22.2% | 16.7% | 13.3% | 12.4% |
| POLYMER CHEM | | | | | | |
| Count | 12 | 3 | 3 | 0 | 0 | 18 |
| Row Percent | 66.7% | 16.7% | 16.7% | .0% | .0% | 100.0% |
| Column Percent | 6.8% | 15.8% | 2.4% | .0% | .0% | 5.2% |
| OTHER CHEM | | | | | | |
| Count | 9 | 3 | 4 | 1 | 0 | 17 |
| Row Percent | 52.9% | 17.6% | 23.5% | 5.9% | .0% | 100.0% |
| Column Percent | 5.1% | 15.8% | 3.2% | 8.3% | .0% | 4.9% |
| TOTAL | | | | | | |
| Count | 176 | 19 | 126 | 12 | 15 | 348 |
| Row Percent | 50.6% | 5.5% | 36.2% | 3.4% | 4.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-6

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1989 Starting Salary Survey

| | EMPLOYMENT STATUS | | | | | TOTAL |
|---|---|---|---|---|---|---|
| | FT IN CHEM | FT IN NONCHEM | FELLOW-SHIP | SEEKING EMPL | NOT SEEK EMPL | |
| FIELD OF HIGHEST DEGREE | | | | | | |
| BIOCHEMISTRY | | | | | | |
| Count | 13 | 1 | 26 | 1 | 1 | 42 |
| Row Percent | 31.0% | 2.4% | 61.9% | 2.4% | 2.4% | 100.0% |
| Column Percent | 5.0% | 5.0% | 12.0% | 3.0% | 14.3% | 7.8% |
| ANALYTICAL CHEM | | | | | | |
| Count | 79 | 4 | 25 | 5 | 0 | 113 |
| Row Percent | 69.9% | 3.5% | 22.1% | 4.4% | .0% | 100.0% |
| Column Percent | 30.4% | 20.0% | 11.5% | 15.2% | .0% | 21.0% |
| INORGANIC CHEM | | | | | | |
| Count | 38 | 2 | 38 | 4 | 2 | 84 |
| Row Percent | 45.2% | 2.4% | 45.2% | 4.8% | 2.4% | 100.0% |
| Column Percent | 14.6% | 10.0% | 17.5% | 12.1% | 28.6% | 15.6% |
| ORGANIC CHEM | | | | | | |
| Count | 83 | 1 | 65 | 6 | 2 | 157 |
| Row Percent | 52.9% | .6% | 41.4% | 3.8% | 1.3% | 100.0% |
| Column Percent | 31.9% | 5.0% | 30.0% | 18.2% | 28.6% | 29.2% |
| PHYSICAL CHEM | | | | | | |
| Count | 33 | 9 | 54 | 13 | 1 | 110 |
| Row Percent | 30.0% | 8.2% | 49.1% | 11.8% | .9% | 100.0% |
| Column Percent | 12.7% | 45.0% | 24.9% | 39.4% | 14.3% | 20.5% |
| POLYMER CHEM | | | | | | |
| Count | 8 | 2 | 2 | 0 | 0 | 12 |
| Row Percent | 66.7% | 16.7% | 16.7% | .0% | .0% | 100.0% |
| Column Percent | 3.1% | 10.0% | .9% | .0% | .0% | 2.2% |
| OTHER CHEM | | | | | | |
| Count | 6 | 1 | 7 | 4 | 1 | 19 |
| Row Percent | 31.6% | 5.3% | 36.8% | 21.1% | 5.3% | 100.0% |
| Column Percent | 2.3% | 5.0% | 3.2% | 12.1% | 14.3% | 3.5% |
| TOTAL | | | | | | |
| Count | 260 | 20 | 217 | 33 | 7 | 537 |
| Row Percent | 48.4% | 3.7% | 40.4% | 6.1% | 1.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-7a

CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1989 Starting Salary Survey

| | BACHELORS | | | MASTERS | | | DOCTORATE | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| FULL-TIME IN CHEMISTRY | | | | | | | | | |
| Count | 365 | 200 | 565 | 97 | 28 | 125 | 99 | 15 | 114 |
| Row Percent | 64.6% | 35.4% | 100.0% | 77.6% | 22.4% | 100.0% | 86.8% | 13.2% | 100.0% |
| Column Percent | 66.7% | 72.5% | 68.7% | 57.4% | 50.9% | 55.8% | 68.3% | 65.2% | 67.9% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | | |
| Count | 62 | 19 | 81 | 13 | 8 | 21 | 16 | 2 | 18 |
| Row Percent | 76.5% | 23.5% | 100.0% | 61.9% | 38.1% | 100.0% | 88.9% | 11.1% | 100.0% |
| Column Percent | 11.3% | 6.9% | 9.8% | 7.7% | 14.5% | 9.4% | 11.0% | 8.7% | 10.7% |
| FELLOWSHIP | | | | | | | | | |
| Count | 76 | 40 | 116 | 56 | 13 | 69 | 22 | 2 | 24 |
| Row Percent | 65.5% | 34.5% | 100.0% | 81.2% | 18.8% | 100.0% | 91.7% | 8.3% | 100.0% |
| Column Percent | 13.9% | 14.5% | 14.1% | 33.1% | 23.6% | 30.8% | 15.2% | 8.7% | 14.3% |
| SEEKING EMPLOYMENT | | | | | | | | | |
| Count | 30 | 12 | 42 | 1 | 3 | 4 | 8 | 2 | 10 |
| Row Percent | 71.4% | 28.6% | 100.0% | 25.0% | 75.0% | 100.0% | 80.0% | 20.0% | 100.0% |
| Column Percent | 5.5% | 4.3% | 5.1% | .6% | 5.5% | 1.8% | 5.5% | 8.7% | 6.0% |
| NOT SEEKING EMPLOYMENT | | | | | | | | | |
| Count | 14 | 5 | 19 | 2 | 3 | 5 | 0 | 2 | 2 |
| Row Percent | 73.7% | 26.3% | 100.0% | 40.0% | 60.0% | 100.0% | .0% | 100.0% | 100.0% |
| Column Percent | 2.6% | 1.8% | 2.3% | 1.2% | 5.5% | 2.2% | .0% | 8.7% | 1.2% |
| TOTAL | | | | | | | | | |
| Count | 547 | 276 | 823 | 169 | 55 | 224 | 145 | 23 | 168 |
| Row Percent | 66.5% | 33.5% | 100.0% | 75.4% | 24.6% | 100.0% | 86.3% | 13.7% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-7b

CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989, SEX, and DEGREE
1989 Starting Salary Survey

| | BACHELORS | | | MASTERS | | | DOCTORATE | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | | |
| YES, FULL-TIME | | | | | | | | | |
| Count | 109 | 49 | 158 | 62 | 14 | 76 | 4 | 0 | 4 |
| Row Percent | 69.0% | 31.0% | 100.0% | 81.6% | 18.4% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 19.2% | 17.5% | 18.6% | 35.8% | 25.5% | 33.3% | 2.9% | .0% | 2.5% |
| YES, PART-TIME | | | | | | | | | |
| Count | 64 | 37 | 101 | 17 | 5 | 22 | 4 | 1 | 5 |
| Row Percent | 63.4% | 36.6% | 100.0% | 77.3% | 22.7% | 100.0% | 80.0% | 20.0% | 100.0% |
| Column Percent | 11.3% | 13.2% | 11.9% | 9.8% | 9.1% | 9.6% | 2.9% | 4.5% | 3.2% |
| NO | | | | | | | | | |
| Count | 395 | 194 | 589 | 94 | 36 | 130 | 128 | 21 | 149 |
| Row Percent | 67.1% | 32.9% | 100.0% | 72.3% | 27.7% | 100.0% | 85.9% | 14.1% | 100.0% |
| Column Percent | 69.5% | 69.3% | 69.5% | 54.3% | 65.5% | 57.0% | 94.1% | 95.5% | 94.3% |
| TOTAL | | | | | | | | | |
| Count | 568 | 280 | 848 | 173 | 55 | 228 | 136 | 22 | 158 |
| Row Percent | 67.0% | 33.0% | 100.0% | 75.9% | 24.1% | 100.0% | 86.1% | 13.9% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-8a

BS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| FULL-TIME IN CHEMISTRY | | | | |
| Count | 535 | 19 | 9 | 2 |
| Row Percent | 94.7% | 3.4% | 1.6% | .4% |
| Column Percent | 69.8% | 67.9% | 52.9% | 18.2% |
| FULL-TIME IN NON-CHEMISTRY | | | | |
| Count | 79 | 1 | 0 | 0 |
| Row Percent | 98.8% | 1.3% | .0% | .0% |
| Column Percent | 10.3% | 3.6% | .0% | .0% |
| FELLOWSHIP | | | | |
| Count | 101 | 3 | 6 | 6 |
| Row Percent | 87.1% | 2.6% | 5.2% | 5.2% |
| Column Percent | 13.2% | 10.7% | 35.3% | 54.5% |
| SEEKING EMPLOYMENT | | | | |
| Count | 36 | 2 | 2 | 2 |
| Row Percent | 85.7% | 4.8% | 4.8% | 4.8% |
| Column Percent | 4.7% | 7.1% | 11.8% | 18.2% |
| NOT SEEKING EMPLOYMENT | | | | |
| Count | 15 | 3 | 0 | 1 |
| Row Percent | 78.9% | 15.8% | .0% | 5.3% |
| Column Percent | 2.0% | 10.7% | .0% | 9.1% |
| TOTAL | | | | |
| Count | 766 | 28 | 17 | 11 |
| Row Percent | 93.2% | 3.4% | 2.1% | 1.3% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-8a Continued

MS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| FULL-TIME IN CHEMISTRY | | | | |
| Count | 104 | 6 | 7 | 9 |
| Row Percent | 82.5% | 4.8% | 5.6% | 7.1% |
| Column Percent | 65.4% | 60.0% | 58.3% | 20.0% |
| FULL-TIME IN NON-CHEMISTRY | | | | |
| Count | 15 | 2 | 2 | 2 |
| Row Percent | 71.4% | 9.5% | 9.5% | 9.5% |
| Column Percent | 9.4% | 20.0% | 16.7% | 4.4% |
| FELLOWSHIP | | | | |
| Count | 34 | 2 | 1 | 32 |
| Row Percent | 49.3% | 2.9% | 1.4% | 46.4% |
| Column Percent | 21.4% | 20.0% | 8.3% | 71.1% |
| SEEKING EMPLOYMENT | | | | |
| Count | 1 | 0 | 2 | 2 |
| Row Percent | 20.0% | .0% | 40.0% | 40.0% |
| Column Percent | .6% | .0% | 16.7% | 4.4% |
| NOT SEEKING EMPLOYMENT | | | | |
| Count | 5 | 0 | 0 | 0 |
| Row Percent | 100.0% | .0% | .0% | .0% |
| Column Percent | 3.1% | .0% | .0% | .0% |
| TOTAL | | | | |
| Count | 159 | 10 | 12 | 45 |
| Row Percent | 70.4% | 4.4% | 5.3% | 19.9% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-8a Continued

PHD CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| FULL-TIME IN CHEMISTRY | | | | |
| Count | 85 | 5 | 8 | 16 |
| Row Percent | 74.6% | 4.4% | 7.0% | 14.0% |
| Column Percent | 73.9% | 100.0% | 72.7% | 44.4% |
| FULL-TIME IN NON-CHEMISTRY | | | | |
| Count | 12 | 0 | 0 | 5 |
| Row Percent | 70.6% | .0% | .0% | 29.4% |
| Column Percent | 10.4% | .0% | .0% | 13.9% |
| FELLOWSHIP | | | | |
| Count | 12 | 0 | 1 | 11 |
| Row Percent | 50.0% | .0% | 4.2% | 45.8% |
| Column Percent | 10.4% | .0% | 9.1% | 30.6% |
| SEEKING EMPLOYMENT | | | | |
| Count | 5 | 0 | 1 | 4 |
| Row Percent | 50.0% | .0% | 10.0% | 40.0% |
| Column Percent | 4.3% | .0% | 9.1% | 11.1% |
| NOT SEEKING EMPLOYMENT | | | | |
| Count | 1 | 0 | 1 | 0 |
| Row Percent | 50.0% | .0% | 50.0% | .0% |
| Column Percent | .9% | .0% | 9.1% | .0% |
| TOTAL | | | | |
| Count | 115 | 5 | 11 | 36 |
| Row Percent | 68.9% | 3.0% | 6.6% | 21.6% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-8b

BS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | |
| YES, FULL-TIME | | | | |
| Count | 134 | 6 | 9 | 9 |
| Row Percent | 84.8% | 3.8% | 5.7% | 5.7% |
| Column Percent | 17.0% | 20.0% | 56.3% | 69.2% |
| YES, PART-TIME | | | | |
| Count | 92 | 7 | 2 | 0 |
| Row Percent | 91.1% | 6.9% | 2.0% | .0% |
| Column Percent | 11.7% | 23.3% | 12.5% | .0% |
| NO | | | | |
| Count | 561 | 17 | 5 | 4 |
| Row Percent | 95.6% | 2.9% | .9% | .7% |
| Column Percent | 71.3% | 56.7% | 31.3% | 30.8% |
| TOTAL | | | | |
| Count | 787 | 30 | 16 | 13 |
| Row Percent | 93.0% | 3.5% | 1.9% | 1.5% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-8b Continued

MS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | |
| YES, FULL-TIME | | | | |
| Count | 36 | 2 | 1 | 38 |
| Row Percent | 46.8% | 2.6% | 1.3% | 49.4% |
| Column Percent | 22.6% | 20.0% | 8.3% | 77.6% |
| YES, PART-TIME | | | | |
| Count | 16 | 2 | 3 | 1 |
| Row Percent | 72.7% | 9.1% | 13.6% | 4.5% |
| Column Percent | 10.1% | 20.0% | 25.0% | 2.0% |
| NO | | | | |
| Count | 107 | 6 | 8 | 10 |
| Row Percent | 81.7% | 4.6% | 6.1% | 7.6% |
| Column Percent | 67.3% | 60.0% | 66.7% | 20.4% |
| TOTAL | | | | |
| Count | 159 | 10 | 12 | 49 |
| Row Percent | 69.1% | 4.3% | 5.2% | 21.3% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-8b Continued

PHD CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

| | CITIZENSHIP | | | |
|---|---|---|---|---|
| | U.S. NATIVE | U.S. NATURAL-IZED | U.S. PERMANENT RESIDENT | OTHER VISA |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | |
| YES, FULL-TIME | | | | |
| Count | 2 | 1 | 0 | 1 |
| Row Percent | 50.0% | 25.0% | .0% | 25.0% |
| Column Percent | 1.8% | 20.0% | .0% | 3.0% |
| YES, PART-TIME | | | | |
| Count | 3 | 0 | 0 | 1 |
| Row Percent | 75.0% | .0% | .0% | 25.0% |
| Column Percent | 2.7% | .0% | .0% | 3.0% |
| NO | | | | |
| Count | 105 | 4 | 9 | 31 |
| Row Percent | 70.5% | 2.7% | 6.0% | 20.8% |
| Column Percent | 95.5% | 80.0% | 100.0% | 93.9% |
| TOTAL | | | | |
| Count | 110 | 5 | 9 | 33 |
| Row Percent | 70.1% | 3.2% | 5.7% | 21.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-9a

BS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| FULL-TIME IN CHEMISTRY | | | | | | | | |
| Count | 4 | 4 | 13 | 15 | 13 | 14 | 496 | 4 |
| Row Percent | .7% | .7% | 2.3% | 2.7% | 2.3% | 2.5% | 88.1% | .7% |
| Column Percent | 57.1% | 80.0% | 54.2% | 53.6% | 52.0% | 73.7% | 70.6% | 57.1% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | |
| Count | 2 | 0 | 1 | 2 | 3 | 3 | 69 | 1 |
| Row Percent | 2.5% | .0% | 1.2% | 2.5% | 3.7% | 3.7% | 85.2% | 1.2% |
| Column Percent | 28.6% | .0% | 4.2% | 7.1% | 12.0% | 15.8% | 9.8% | 14.3% |
| FELLOWSHIP | | | | | | | | |
| Count | 1 | 1 | 8 | 7 | 3 | 1 | 91 | 2 |
| Row Percent | .9% | .9% | 7.0% | 6.1% | 2.6% | .9% | 79.8% | 1.8% |
| Column Percent | 14.3% | 20.0% | 33.3% | 25.0% | 12.0% | 5.3% | 12.9% | 28.6% |
| SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 2 | 1 | 2 | 1 | 35 | 0 |
| Row Percent | .0% | .0% | 4.9% | 2.4% | 4.9% | 2.4% | 85.4% | .0% |
| Column Percent | .0% | .0% | 8.3% | 3.6% | 8.0% | 5.3% | 5.0% | .0% |
| NOT SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 0 | 3 | 4 | 0 | 12 | 0 |
| Row Percent | .0% | .0% | .0% | 15.8% | 21.1% | .0% | 63.2% | .0% |
| Column Percent | .0% | .0% | .0% | 10.7% | 16.0% | .0% | 1.7% | .0% |
| TOTAL | | | | | | | | |
| Count | 7 | 5 | 24 | 28 | 25 | 19 | 703 | 7 |
| Row Percent | .9% | .6% | 2.9% | 3.4% | 3.1% | 2.3% | 85.9% | .9% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-9a Continued

MS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| FULL-TIME IN CHEMISTRY | | | | | | | | |
| Count | 1 | 6 | 0 | 6 | 5 | 3 | 103 | 2 |
| Row Percent | .8% | 4.8% | .0% | 4.8% | 4.0% | 2.4% | 81.7% | 1.6% |
| Column Percent | 100.0% | 40.0% | .0% | 31.6% | 71.4% | 50.0% | 62.0% | 66.7% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | |
| Count | 0 | 1 | 2 | 2 | 0 | 1 | 13 | 1 |
| Row Percent | .0% | 5.0% | 10.0% | 10.0% | .0% | 5.0% | 65.0% | 5.0% |
| Column Percent | .0% | 6.7% | 28.6% | 10.5% | .0% | 16.7% | 7.8% | 33.3% |
| FELLOWSHIP | | | | | | | | |
| Count | 0 | 8 | 3 | 11 | 2 | 0 | 44 | 0 |
| Row Percent | .0% | 11.8% | 4.4% | 16.2% | 2.9% | .0% | 64.7% | .0% |
| Column Percent | .0% | 53.3% | 42.9% | 57.9% | 28.6% | .0% | 26.5% | .0% |
| SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 |
| Row Percent | .0% | .0% | 40.0% | .0% | .0% | 40.0% | 20.0% | .0% |
| Column Percent | .0% | .0% | 28.6% | .0% | .0% | 33.3% | .6% | .0% |
| NOT SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Row Percent | .0% | .0% | .0% | .0% | .0% | .0% | 100.0% | .0% |
| Column Percent | .0% | .0% | .0% | .0% | .0% | .0% | 3.0% | .0% |
| TOTAL | | | | | | | | |
| Count | 1 | 15 | 7 | 19 | 7 | 6 | 166 | 3 |
| Row Percent | .4% | 6.7% | 3.1% | 8.5% | 3.1% | 2.7% | 74.1% | 1.3% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-9a Continued

PHD CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| FULL-TIME IN CHEMISTRY | | | | | | | | |
| Count | 0 | 6 | 11 | 5 | 1 | 1 | 87 | 1 |
| Row Percent | .0% | 5.4% | 9.8% | 4.5% | .9% | .9% | 77.7% | .9% |
| Column Percent | .0% | 42.9% | 64.7% | 55.6% | 100.0% | 50.0% | 71.9% | 100.0% |
| FULL-TIME IN NON-CHEMISTRY | | | | | | | | |
| Count | 0 | 2 | 2 | 0 | 0 | 0 | 13 | 0 |
| Row Percent | .0% | 11.8% | 11.8% | .0% | .0% | .0% | 76.5% | .0% |
| Column Percent | .0% | 14.3% | 11.8% | .0% | .0% | .0% | 10.7% | .0% |
| FELLOWSHIP | | | | | | | | |
| Count | 0 | 6 | 3 | 2 | 0 | 0 | 13 | 0 |
| Row Percent | .0% | 25.0% | 12.5% | 8.3% | .0% | .0% | 54.2% | .0% |
| Column Percent | .0% | 42.9% | 17.6% | 22.2% | .0% | .0% | 10.7% | .0% |
| SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 1 | 2 | 0 | 0 | 7 | 0 |
| Row Percent | .0% | .0% | 10.0% | 20.0% | .0% | .0% | 70.0% | .0% |
| Column Percent | .0% | .0% | 5.9% | 22.2% | .0% | .0% | 5.8% | .0% |
| NOT SEEKING EMPLOYMENT | | | | | | | | |
| Count | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Row Percent | .0% | .0% | .0% | .0% | .0% | 50.0% | 50.0% | .0% |
| Column Percent | .0% | .0% | .0% | .0% | .0% | 50.0% | .8% | .0% |
| TOTAL | | | | | | | | |
| Count | 0 | 14 | 17 | 9 | 1 | 2 | 121 | 1 |
| Row Percent | .0% | 8.5% | 10.3% | 5.5% | .6% | 1.2% | 73.3% | .6% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-9b

BS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | |
| YES, FULL-TIME | | | | | | | | |
| Count | 1 | 1 | 9 | 11 | 8 | 1 | 122 | 3 |
| Row Percent | .6% | .6% | 5.8% | 7.1% | 5.1% | .6% | 78.2% | 1.9% |
| Column Percent | 14.3% | 20.0% | 37.5% | 36.7% | 30.8% | 5.3% | 16.9% | 37.5% |
| YES, PART-TIME | | | | | | | | |
| Count | 2 | 2 | 4 | 2 | 3 | 2 | 85 | 1 |
| Row Percent | 2.0% | 2.0% | 4.0% | 2.0% | 3.0% | 2.0% | 84.2% | 1.0% |
| Column Percent | 28.6% | 40.0% | 16.7% | 6.7% | 11.5% | 10.5% | 11.8% | 12.5% |
| NO | | | | | | | | |
| Count | 4 | 2 | 11 | 17 | 15 | 16 | 516 | 4 |
| Row Percent | .7% | .3% | 1.9% | 2.9% | 2.6% | 2.7% | 88.2% | .7% |
| Column Percent | 57.1% | 40.0% | 45.8% | 56.7% | 57.7% | 84.2% | 71.4% | 50.0% |
| TOTAL | | | | | | | | |
| Count | 7 | 5 | 24 | 30 | 26 | 19 | 723 | 8 |
| Row Percent | .8% | .6% | 2.9% | 3.6% | 3.1% | 2.3% | 85.9% | 1.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-9b Continued

MS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | |
| YES, FULL-TIME | | | | | | | | |
| Count | 0 | 8 | 8 | 11 | 2 | 0 | 47 | 0 |
| Row Percent | .0% | 10.5% | 10.5% | 14.5% | 2.6% | .0% | 61.8% | .0% |
| Column Percent | .0% | 53.3% | 80.0% | 57.9% | 28.6% | .0% | 28.1% | .0% |
| YES, PART-TIME | | | | | | | | |
| Count | 0 | 2 | 0 | 1 | 2 | 1 | 14 | 1 |
| Row Percent | .0% | 9.5% | .0% | 4.8% | 9.5% | 4.8% | 66.7% | 4.8% |
| Column Percent | .0% | 13.3% | .0% | 5.3% | 28.6% | 16.7% | 8.4% | 33.3% |
| NO | | | | | | | | |
| Count | 1 | 5 | 2 | 7 | 3 | 5 | 106 | 2 |
| Row Percent | .8% | 3.8% | 1.5% | 5.3% | 2.3% | 3.8% | 80.9% | 1.5% |
| Column Percent | 100.0% | 33.3% | 20.0% | 36.8% | 42.9% | 83.3% | 63.5% | 66.7% |
| TOTAL | | | | | | | | |
| Count | 1 | 15 | 10 | 19 | 7 | 6 | 167 | 3 |
| Row Percent | .4% | 6.6% | 4.4% | 8.3% | 3.1% | 2.6% | 73.2% | 1.3% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table B-9b Continued

PHD CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | | | | | | |
| YES, FULL-TIME | | | | | | | | |
| Count | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 |
| Row Percent | .0% | .0% | .0% | .0% | .0% | 25.0% | 75.0% | .0% |
| Column Percent | .0% | .0% | .0% | .0% | .0% | 50.0% | 2.6% | .0% |
| YES, PART-TIME | | | | | | | | |
| Count | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Row Percent | .0% | .0% | .0% | .0% | .0% | .0% | 100.0% | .0% |
| Column Percent | .0% | .0% | .0% | .0% | .0% | .0% | 2.6% | .0% |
| NO | | | | | | | | |
| Count | 0 | 12 | 16 | 7 | 1 | 1 | 110 | 1 |
| Row Percent | .0% | 8.1% | 10.8% | 4.7% | .7% | .7% | 74.3% | .7% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 50.0% | 94.8% | 100.0% |
| TOTAL | | | | | | | | |
| Count | 0 | 12 | 16 | 7 | 1 | 2 | 116 | 1 |
| Row Percent | .0% | 7.7% | 10.3% | 4.5% | .6% | 1.3% | 74.8% | .6% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table C-1

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 41 | 19 | 60 |
| Row Percent | 68.3% | 31.7% | 100.0% |
| Column Percent | 38.0% | 29.2% | 34.7% |
| PHYSICAL SCI OR MATH | 6 | 4 | 10 |
| Row Percent | 60.0% | 40.0% | 100.0% |
| Column Percent | 5.6% | 6.2% | 5.8% |
| CHEM OR BIOCHEM ENG | 8 | 2 | 10 |
| Row Percent | 80.0% | 20.0% | 100.0% |
| Column Percent | 7.4% | 3.1% | 5.8% |
| OTHER ENGINEERING | 4 | 0 | 4 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 3.7% | .0% | 2.3% |
| BIOCHEMISTRY | 4 | 5 | 9 |
| Row Percent | 44.4% | 55.6% | 100.0% |
| Column Percent | 3.7% | 7.7% | 5.2% |
| LIFE SCIENCE | 3 | 3 | 6 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 2.8% | 4.6% | 3.5% |
| MEDICINE | 9 | 7 | 16 |
| Row Percent | 56.3% | 43.8% | 100.0% |
| Column Percent | 8.3% | 10.8% | 9.2% |
| PHARMACY | 0 | 4 | 4 |
| Row Percent | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 6.2% | 2.3% |
| BUSINESS MANAGEMENT | 21 | 9 | 30 |
| Row Percent | 70.0% | 30.0% | 100.0% |
| Column Percent | 19.4% | 13.8% | 17.3% |
| EDUCATION | 2 | 2 | 4 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 1.9% | 3.1% | 2.3% |
| LAW | 5 | 1 | 6 |
| Row Percent | 83.3% | 16.7% | 100.0% |
| Column Percent | 4.6% | 1.5% | 3.5% |
| OTHER | 5 | 9 | 14 |
| Row Percent | 35.7% | 64.3% | 100.0% |
| Column Percent | 4.6% | 13.8% | 8.1% |
| TOTAL | 108 | 65 | 173 |
| Row Percent | 62.4% | 37.6% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-1 Continued

MS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 5 | 1 | 6 |
| Row Percent | 83.3% | 16.7% | 100.0% |
| Column Percent | 41.7% | 14.3% | 31.6% |
| OTHER ENGINEERING | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 8.3% | .0% | 5.3% |
| BIOCHEMISTRY | 0 | 1 | 1 |
| Row Percent | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 14.3% | 5.3% |
| BUSINESS MANAGEMENT | 4 | 1 | 5 |
| Row Percent | 80.0% | 20.0% | 100.0% |
| Column Percent | 33.3% | 14.3% | 26.3% |
| EDUCATION | 0 | 1 | 1 |
| Row Percent | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 14.3% | 5.3% |
| LAW | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 8.3% | .0% | 5.3% |
| OTHER | 1 | 3 | 4 |
| Row Percent | 25.0% | 75.0% | 100.0% |
| Column Percent | 8.3% | 42.9% | 21.1% |
| TOTAL | 12 | 7 | 19 |
| Row Percent | 63.2% | 36.8% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-1 Continued

PHD CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| FIELD OF FURTHER STUDIES | | | |
| BIOCHEMISTRY | 2 | 1 | 3 |
| Row Percent | 66.7% | 33.3% | 100.0% |
| Column Percent | 33.3% | 33.3% | 33.3% |
| MEDICINE | 0 | 0 | 0 |
| Row Percent | .0% | .0% | .0% |
| Column Percent | .0% | .0% | .0% |
| BUSINESS MANAGEMENT | 2 | 2 | 4 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 33.3% | 66.7% | 44.4% |
| OTHER | 2 | 0 | 2 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 33.3% | .0% | 22.2% |
| TOTAL | 6 | 3 | 9 |
| Row Percent | 66.7% | 33.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-2

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDIES and CERTIFICATION
1989 Starting Salary Survey

| | CURRICULUM APPROVED? | | TOTAL |
|---|---|---|---|
| | NO | YES | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 27 | 33 | 60 |
| Row Percent | 45.0% | 55.0% | 100.0% |
| Column Percent | 30.3% | 39.3% | 34.7% |
| PHYSICAL SCI OR MATH | 5 | 5 | 10 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 5.6% | 6.0% | 5.8% |
| CHEM OR BIOCHEM ENG | 4 | 6 | 10 |
| Row Percent | 40.0% | 60.0% | 100.0% |
| Column Percent | 4.5% | 7.1% | 5.8% |
| OTHER ENGINEERING | 1 | 3 | 4 |
| Row Percent | 25.0% | 75.0% | 100.0% |
| Column Percent | 1.1% | 3.6% | 2.3% |
| BIOCHEMISTRY | 3 | 6 | 9 |
| Row Percent | 33.3% | 66.7% | 100.0% |
| Column Percent | 3.4% | 7.1% | 5.2% |
| LIFE SCIENCE | 6 | 0 | 6 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 6.7% | .0% | 3.5% |
| MEDICINE | 12 | 4 | 16 |
| Row Percent | 75.0% | 25.0% | 100.0% |
| Column Percent | 13.5% | 4.8% | 9.2% |
| PHARMACY | 2 | 2 | 4 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 2.2% | 2.4% | 2.3% |
| BUSINESS MANAGEMENT | 17 | 13 | 30 |
| Row Percent | 56.7% | 43.3% | 100.0% |
| Column Percent | 19.1% | 15.5% | 17.3% |
| EDUCATION | 2 | 2 | 4 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 2.2% | 2.4% | 2.3% |
| LAW | 2 | 4 | 6 |
| Row Percent | 33.3% | 66.7% | 100.0% |
| Column Percent | 2.2% | 4.8% | 3.5% |
| OTHER | 8 | 6 | 14 |
| Row Percent | 57.1% | 42.9% | 100.0% |
| Column Percent | 9.0% | 7.1% | 8.1% |
| TOTAL | 89 | 84 | 173 |
| Row Percent | 51.4% | 48.6% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-3

CHEMICAL ENGINEERING GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | |
|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| FIELD OF FURTHER STUDIES | | | | | | |
| CHEMISTRY | 1 | 1 | 2 | 0 | 1 | 1 |
| Row Percent | 50.0% | 50.0% | 100.0% | .0% | 100.0% | 100.0% |
| Column Percent | 1.6% | 2.7% | 2.0% | .0% | 25.0% | 4.8% |
| PHYSICAL SCI OR MATH | 4 | 0 | 4 | 0 | 0 | 0 |
| Row Percent | 100.0% | .0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 6.3% | .0% | 4.0% | .0% | .0% | .0% |
| CHEM OR BIOCHEM ENG | 20 | 7 | 27 | 8 | 0 | 8 |
| Row Percent | 74.1% | 25.9% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 31.7% | 18.9% | 27.0% | 47.1% | .0% | 38.1% |
| OTHER ENGINEERING | 9 | 4 | 13 | 4 | 2 | 6 |
| Row Percent | 69.2% | 30.8% | 100.0% | 66.7% | 33.3% | 100.0% |
| Column Percent | 14.3% | 10.8% | 13.0% | 23.5% | 50.0% | 28.6% |
| LIFE SCIENCE | 0 | 1 | 1 | 0 | 0 | 0 |
| Row Percent | .0% | 100.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | .0% | 2.7% | 1.0% | .0% | .0% | .0% |
| BUSINESS MANAGEMENT | 22 | 19 | 41 | 4 | 0 | 4 |
| Row Percent | 53.7% | 46.3% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 34.9% | 51.4% | 41.0% | 23.5% | .0% | 19.0% |
| LAW | 2 | 0 | 2 | 0 | 0 | 0 |
| Row Percent | 100.0% | .0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 3.2% | .0% | 2.0% | .0% | .0% | .0% |
| OTHER | 5 | 5 | 10 | 1 | 1 | 2 |
| Row Percent | 50.0% | 50.0% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 7.9% | 13.5% | 10.0% | 5.9% | 25.0% | 9.5% |
| TOTAL | 63 | 37 | 100 | 17 | 4 | 21 |
| Row Percent | 63.0% | 37.0% | 100.0% | 81.0% | 19.0% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table C-4

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 208 | 113 | 321 |
| Row Percent | 64.8% | 35.2% | 100.0% |
| Column Percent | 38.2% | 37.7% | 38.0% |
| PHYSICAL SCI OR MATH | 7 | 4 | 11 |
| Row Percent | 63.6% | 36.4% | 100.0% |
| Column Percent | 1.3% | 1.3% | 1.3% |
| CHEM OR BIOCHEM ENG | 11 | 1 | 12 |
| Row Percent | 91.7% | 8.3% | 100.0% |
| Column Percent | 2.0% | .3% | 1.4% |
| OTHER ENGINEERING | 9 | 1 | 10 |
| Row Percent | 90.0% | 10.0% | 100.0% |
| Column Percent | 1.7% | .3% | 1.2% |
| BIOCHEMISTRY | 44 | 40 | 84 |
| Row Percent | 52.4% | 47.6% | 100.0% |
| Column Percent | 8.1% | 13.3% | 9.9% |
| LIFE SCIENCE | 4 | 6 | 10 |
| Row Percent | 40.0% | 60.0% | 100.0% |
| Column Percent | .7% | 2.0% | 1.2% |
| MEDICINE | 177 | 82 | 259 |
| Row Percent | 68.3% | 31.7% | 100.0% |
| Column Percent | 32.5% | 27.3% | 30.7% |
| DENTISTRY | 22 | 4 | 26 |
| Row Percent | 84.6% | 15.4% | 100.0% |
| Column Percent | 4.0% | 1.3% | 3.1% |
| PHARMACY | 4 | 15 | 19 |
| Row Percent | 21.1% | 78.9% | 100.0% |
| Column Percent | .7% | 5.0% | 2.2% |
| BUSINESS MANAGEMENT | 4 | 4 | 8 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | .7% | 1.3% | .9% |
| EDUCATION | 5 | 6 | 11 |
| Row Percent | 45.5% | 54.5% | 100.0% |
| Column Percent | .9% | 2.0% | 1.3% |
| LAW | 12 | 2 | 14 |
| Row Percent | 85.7% | 14.3% | 100.0% |
| Column Percent | 2.2% | .7% | 1.7% |
| OTHER | 38 | 22 | 60 |
| Row Percent | 63.3% | 36.7% | 100.0% |
| Column Percent | 7.0% | 7.3% | 7.1% |
| TOTAL | 545 | 300 | 845 |
| Row Percent | 64.5% | 35.5% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-4 Continued

MS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 85 | 28 | 113 |
| Row Percent | 75.2% | 24.8% | 100.0% |
| Column Percent | 80.2% | 75.7% | 79.0% |
| PHYSICAL SCI OR MATH | 2 | 0 | 2 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 1.9% | .0% | 1.4% |
| OTHER ENGINEERING | 2 | 0 | 2 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 1.9% | .0% | 1.4% |
| BIOCHEMISTRY | 8 | 1 | 9 |
| Row Percent | 88.9% | 11.1% | 100.0% |
| Column Percent | 7.5% | 2.7% | 6.3% |
| LIFE SCIENCE | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | .9% | .0% | .7% |
| MEDICINE | 2 | 3 | 5 |
| Row Percent | 40.0% | 60.0% | 100.0% |
| Column Percent | 1.9% | 8.1% | 3.5% |
| PHARMACY | 1 | 2 | 3 |
| Row Percent | 33.3% | 66.7% | 100.0% |
| Column Percent | .9% | 5.4% | 2.1% |
| EDUCATION | 0 | 1 | 1 |
| Row Percent | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 2.7% | .7% |
| LAW | 2 | 0 | 2 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 1.9% | .0% | 1.4% |
| OTHER | 3 | 2 | 5 |
| Row Percent | 60.0% | 40.0% | 100.0% |
| Column Percent | 2.8% | 5.4% | 3.5% |
| TOTAL | 106 | 37 | 143 |
| Row Percent | 74.1% | 25.9% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-4 Continued

PHD CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 29 | 5 | 34 |
| Row Percent | 85.3% | 14.7% | 100.0% |
| Column Percent | 69.0% | 41.7% | 63.0% |
| PHYSICAL SCI OR MATH | 3 | 0 | 3 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 7.1% | .0% | 5.6% |
| OTHER ENGINEERING | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 2.4% | .0% | 1.9% |
| BIOCHEMISTRY | 5 | 5 | 10 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 11.9% | 41.7% | 18.5% |
| LIFE SCIENCE | 3 | 1 | 4 |
| Row Percent | 75.0% | 25.0% | 100.0% |
| Column Percent | 7.1% | 8.3% | 7.4% |
| LAW | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 2.4% | .0% | 1.9% |
| OTHER | 0 | 1 | 1 |
| Row Percent | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 8.3% | 1.9% |
| TOTAL | 42 | 12 | 54 |
| Row Percent | 77.8% | 22.2% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-5

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDIES and CERTIFICATION
1989 Starting Salary Survey

| | CURRICULUM APPROVED? | | TOTAL |
|---|---|---|---|
| | NO | YES | |
| FIELD OF FURTHER STUDIES | | | |
| CHEMISTRY | 98 | 223 | 321 |
| Row Percent | 30.5% | 69.5% | 100.0% |
| Column Percent | 20.7% | 59.8% | 37.9% |
| PHYSICAL SCI OR MATH | 3 | 8 | 11 |
| Row Percent | 27.3% | 72.7% | 100.0% |
| Column Percent | .6% | 2.1% | 1.3% |
| CHEM OR BIOCHEM ENG | 5 | 7 | 12 |
| Row Percent | 41.7% | 58.3% | 100.0% |
| Column Percent | 1.1% | 1.9% | 1.4% |
| OTHER ENGINEERING | 4 | 6 | 10 |
| Row Percent | 40.0% | 60.0% | 100.0% |
| Column Percent | .8% | 1.6% | 1.2% |
| BIOCHEMISTRY | 50 | 35 | 85 |
| Row Percent | 58.8% | 41.2% | 100.0% |
| Column Percent | 10.6% | 9.4% | 10.0% |
| LIFE SCIENCE | 6 | 4 | 10 |
| Row Percent | 60.0% | 40.0% | 100.0% |
| Column Percent | 1.3% | 1.1% | 1.2% |
| MEDICINE | 211 | 48 | 259 |
| Row Percent | 81.5% | 18.5% | 100.0% |
| Column Percent | 44.6% | 12.9% | 30.6% |
| DENTISTRY | 18 | 8 | 26 |
| Row Percent | 69.2% | 30.8% | 100.0% |
| Column Percent | 3.8% | 2.1% | 3.1% |
| PHARMACY | 14 | 5 | 19 |
| Row Percent | 73.7% | 26.3% | 100.0% |
| Column Percent | 3.0% | 1.3% | 2.2% |
| BUSINESS MANAGEMENT | 5 | 3 | 8 |
| Row Percent | 62.5% | 37.5% | 100.0% |
| Column Percent | 1.1% | .8% | .9% |
| EDUCATION | 7 | 4 | 11 |
| Row Percent | 63.6% | 36.4% | 100.0% |
| Column Percent | 1.5% | 1.1% | 1.3% |
| LAW | 7 | 7 | 14 |
| Row Percent | 50.0% | 50.0% | 100.0% |
| Column Percent | 1.5% | 1.9% | 1.7% |
| OTHER | 45 | 15 | 60 |
| Row Percent | 75.0% | 25.0% | 100.0% |
| Column Percent | 9.5% | 4.0% | 7.1% |
| TOTAL | 473 | 373 | 846 |
| Row Percent | 55.9% | 44.1% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-6

CHEMICAL ENGINEERING GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | |
|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| FIELD OF FURTHER STUDIES | | | | | | |
| CHEMISTRY | 5 | 1 | 6 | 0 | 1 | 1 |
| Row Percent | 83.3% | 16.7% | 100.0% | .0% | 100.0% | 100.0% |
| Column Percent | 4.6% | 2.1% | 3.9% | .0% | 7.1% | 1.3% |
| CHEM OR BIOCHEM ENG | 74 | 35 | 109 | 54 | 13 | 67 |
| Row Percent | 67.9% | 32.1% | 100.0% | 80.6% | 19.4% | 100.0% |
| Column Percent | 68.5% | 74.5% | 70.3% | 88.5% | 92.9% | 89.3% |
| OTHER ENGINEERING | 5 | 4 | 9 | 4 | 0 | 4 |
| Row Percent | 55.6% | 44.4% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 4.6% | 8.5% | 5.8% | 6.6% | .0% | 5.3% |
| BIOCHEMISTRY | 0 | 1 | 1 | 0 | 0 | 0 |
| Row Percent | .0% | 100.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | .0% | 2.1% | .6% | .0% | .0% | .0% |
| LIFE SCIENCE | 0 | 1 | 1 | 0 | 0 | 0 |
| Row Percent | .0% | 100.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | .0% | 2.1% | .6% | .0% | .0% | .0% |
| MEDICINE | 9 | 2 | 11 | 0 | 0 | 0 |
| Row Percent | 81.8% | 18.2% | 100.0% | .0% | .0% | .0% |
| Column Percent | 8.3% | 4.3% | 7.1% | .0% | .0% | .0% |
| DENTISTRY | 0 | 1 | 1 | 0 | 0 | 0 |
| Row Percent | .0% | 100.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | .0% | 2.1% | .6% | .0% | .0% | .0% |
| PHARMACY | 1 | 0 | 1 | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | .9% | .0% | .6% | 1.6% | .0% | 1.3% |
| BUSINESS MANAGEMENT | 3 | 0 | 3 | 0 | 0 | 0 |
| Row Percent | 100.0% | .0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 2.8% | .0% | 1.9% | .0% | .0% | .0% |
| LAW | 4 | 1 | 5 | 0 | 0 | 0 |
| Row Percent | 80.0% | 20.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 3.7% | 2.1% | 3.2% | .0% | .0% | .0% |
| OTHER | 7 | 1 | 8 | 2 | 0 | 2 |
| Row Percent | 87.5% | 12.5% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 6.5% | 2.1% | 5.2% | 3.3% | .0% | 2.7% |
| TOTAL | 108 | 47 | 155 | 61 | 14 | 75 |
| Row Percent | 69.7% | 30.3% | 100.0% | 81.3% | 18.7% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table C-7

BS CHEMISTRY GRADUATES WHO ARE NOT EMPLOYED and NOT SEEKING EMPLOYMENT
by SEX and PLANS FOR FURTHER STUDIES
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | |
| YES, FULL-TIME | 126 | 79 | 205 |
| Row Percent | 61.5% | 38.5% | 100.0% |
| Column Percent | 90.0% | 83.2% | 87.2% |
| YES, PART-TIME | 3 | 7 | 10 |
| Row Percent | 30.0% | 70.0% | 100.0% |
| Column Percent | 2.1% | 7.4% | 4.3% |
| NO | 11 | 9 | 20 |
| Row Percent | 55.0% | 45.0% | 100.0% |
| Column Percent | 7.9% | 9.5% | 8.5% |
| TOTAL | 140 | 95 | 235 |
| Row Percent | 59.6% | 40.4% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table C-8

BS CHEMICAL ENGINEERING GRADUATES
WHO ARE NOT EMPLOYED and NOT SEEKING EMPLOYMENT
by SEX and PLANS FOR FURTHER STUDIES
1989 Starting Salary Survey

| | SEX | | TOTAL |
|---|---|---|---|
| | MEN | WOMEN | |
| PURSUE ADVANCED STUDIES IN FALL 89 | | | |
| YES, FULL-TIME | 13 | 5 | 18 |
| Row Percent | 72.2% | 27.8% | 100.0% |
| Column Percent | 92.9% | 100.0% | 94.7% |
| NO | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 7.1% | .0% | 5.3% |
| TOTAL | 14 | 5 | 19 |
| Row Percent | 73.7% | 26.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

BS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1989 Starting Salary Survey

| | FIELD | | | | | |
|---|---|---|---|---|---|---|
| | CHEMICAL ENGINEERING | | | CHEMISTRY | | |
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| AGE | | | | | | |
| 20 OR UNDER | 0 | 0 | 0 | 10 | 8 | 18 |
| Row Percent | .0% | .0% | .0% | 55.6% | 44.4% | 100.0% |
| Column Percent | .0% | .0% | .0% | 1.0% | 1.2% | 1.1% |
| 21 | 55 | 42 | 97 | 108 | 109 | 217 |
| Row Percent | 56.7% | 43.3% | 100.0% | 49.8% | 50.2% | 100.0% |
| Column Percent | 9.7% | 15.0% | 11.5% | 10.6% | 16.9% | 13.0% |
| 22 | 207 | 120 | 327 | 450 | 308 | 758 |
| Row Percent | 63.3% | 36.7% | 100.0% | 59.4% | 40.6% | 100.0% |
| Column Percent | 36.5% | 42.9% | 38.6% | 44.1% | 47.8% | 45.5% |
| 23 | 169 | 83 | 252 | 190 | 100 | 290 |
| Row Percent | 67.1% | 32.9% | 100.0% | 65.5% | 34.5% | 100.0% |
| Column Percent | 29.8% | 29.6% | 29.8% | 18.6% | 15.5% | 17.4% |
| 24 | 55 | 20 | 75 | 75 | 36 | 111 |
| Row Percent | 73.3% | 26.7% | 100.0% | 67.6% | 32.4% | 100.0% |
| Column Percent | 9.7% | 7.1% | 8.9% | 7.4% | 5.6% | 6.7% |
| 25 | 37 | 4 | 41 | 41 | 12 | 53 |
| Row Percent | 90.2% | 9.8% | 100.0% | 77.4% | 22.6% | 100.0% |
| Column Percent | 6.5% | 1.4% | 4.8% | 4.0% | 1.9% | 3.2% |
| 26 | 12 | 1 | 13 | 33 | 9 | 42 |
| Row Percent | 92.3% | 7.7% | 100.0% | 78.6% | 21.4% | 100.0% |
| Column Percent | 2.1% | .4% | 1.5% | 3.2% | 1.4% | 2.5% |
| 27 | 5 | 0 | 5 | 23 | 12 | 35 |
| Row Percent | 100.0% | .0% | 100.0% | 65.7% | 34.3% | 100.0% |
| Column Percent | .9% | .0% | .6% | 2.3% | 1.9% | 2.1% |
| 28 | 6 | 2 | 8 | 10 | 7 | 17 |
| Row Percent | 75.0% | 25.0% | 100.0% | 58.8% | 41.2% | 100.0% |
| Column Percent | 1.1% | .7% | .9% | 1.0% | 1.1% | 1.0% |
| 29 | 3 | 1 | 4 | 17 | 8 | 25 |
| Row Percent | 75.0% | 25.0% | 100.0% | 68.0% | 32.0% | 100.0% |
| Column Percent | .5% | .4% | .5% | 1.7% | 1.2% | 1.5% |
| 30 to 34 | 12 | 5 | 17 | 33 | 28 | 61 |
| Row Percent | 70.6% | 29.4% | 100.0% | 54.1% | 45.9% | 100.0% |
| Column Percent | 2.1% | 1.8% | 2.0% | 3.2% | 4.3% | 3.7% |
| 35 to 39 | 6 | 2 | 8 | 17 | 3 | 20 |
| Row Percent | 75.0% | 25.0% | 100.0% | 85.0% | 15.0% | 100.0% |
| Column Percent | 1.1% | .7% | .9% | 1.7% | .5% | 1.2% |
| 40 to 49 | 0 | 0 | 0 | 12 | 3 | 15 |
| Row Percent | .0% | .0% | .0% | 80.0% | 20.0% | 100.0% |
| Column Percent | .0% | .0% | .0% | 1.2% | .5% | .9% |
| 50 to 64 | 0 | 0 | 0 | 1 | 2 | 3 |
| Row Percent | .0% | .0% | .0% | 33.3% | 66.7% | 100.0% |
| Column Percent | .0% | .0% | .0% | .1% | .3% | .2% |
| TOTAL | 567 | 280 | 847 | 1020 | 645 | 1665 |
| Row Percent | 66.9% | 33.1% | 100.0% | 61.3% | 38.7% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table D-2

MS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1989 Starting Salary Survey

| | FIELD | | | | | |
|---|---|---|---|---|---|---|
| | CHEMICAL ENGINEERING | | | CHEMISTRY | | |
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| AGE | | | | | | |
| 21 | 1 | 0 | 1 | 0 | 0 | 0 |
| Row Percent | 100.0% | .0% | 100.0% | .0% | .0% | .0% |
| Column Percent | .6% | .0% | .4% | .0% | .0% | .0% |
| 22 | 3 | 2 | 5 | 2 | 2 | 4 |
| Row Percent | 60.0% | 40.0% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 1.7% | 3.6% | 2.2% | .9% | 1.6% | 1.1% |
| 23 | 9 | 8 | 17 | 5 | 8 | 13 |
| Row Percent | 52.9% | 47.1% | 100.0% | 38.5% | 61.5% | 100.0% |
| Column Percent | 5.2% | 14.5% | 7.5% | 2.1% | 6.3% | 3.6% |
| 24 | 32 | 10 | 42 | 27 | 12 | 39 |
| Row Percent | 76.2% | 23.8% | 100.0% | 69.2% | 30.8% | 100.0% |
| Column Percent | 18.5% | 18.2% | 18.4% | 11.6% | 9.4% | 10.8% |
| 25 | 37 | 10 | 47 | 35 | 28 | 63 |
| Row Percent | 78.7% | 21.3% | 100.0% | 55.6% | 44.4% | 100.0% |
| Column Percent | 21.4% | 18.2% | 20.6% | 15.0% | 22.0% | 17.5% |
| 26 | 25 | 7 | 32 | 35 | 18 | 53 |
| Row Percent | 78.1% | 21.9% | 100.0% | 66.0% | 34.0% | 100.0% |
| Column Percent | 14.5% | 12.7% | 14.0% | 15.0% | 14.2% | 14.7% |
| 27 | 16 | 3 | 19 | 28 | 10 | 38 |
| Row Percent | 84.2% | 15.8% | 100.0% | 73.7% | 26.3% | 100.0% |
| Column Percent | 9.2% | 5.5% | 8.3% | 12.0% | 7.9% | 10.6% |
| 28 | 18 | 2 | 20 | 21 | 5 | 26 |
| Row Percent | 90.0% | 10.0% | 100.0% | 80.8% | 19.2% | 100.0% |
| Column Percent | 10.4% | 3.6% | 8.8% | 9.0% | 3.9% | 7.2% |
| 29 | 7 | 4 | 11 | 9 | 8 | 17 |
| Row Percent | 63.6% | 36.4% | 100.0% | 52.9% | 47.1% | 100.0% |
| Column Percent | 4.0% | 7.3% | 4.8% | 3.9% | 6.3% | 4.7% |
| 30 to 34 | 15 | 8 | 23 | 51 | 20 | 71 |
| Row Percent | 65.2% | 34.8% | 100.0% | 71.8% | 28.2% | 100.0% |
| Column Percent | 8.7% | 14.5% | 10.1% | 21.9% | 15.7% | 19.7% |
| 35 to 39 | 8 | 1 | 9 | 14 | 9 | 23 |
| Row Percent | 88.9% | 11.1% | 100.0% | 60.9% | 39.1% | 100.0% |
| Column Percent | 4.6% | 1.8% | 3.9% | 6.0% | 7.1% | 6.4% |
| 40 to 49 | 2 | 0 | 2 | 6 | 7 | 13 |
| Row Percent | 100.0% | .0% | 100.0% | 46.2% | 53.8% | 100.0% |
| Column Percent | 1.2% | .0% | .9% | 2.6% | 5.5% | 3.6% |
| TOTAL | 173 | 55 | 228 | 233 | 127 | 360 |
| Row Percent | 75.9% | 24.1% | 100.0% | 64.7% | 35.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table D-3

PHD CHEMISTRY and CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1989 Starting Salary Survey

| | FIELD | | | | | |
|---|---|---|---|---|---|---|
| | CHEMICAL ENGINEERING | | | CHEMISTRY | | |
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| AGE | | | | | | |
| 25 | 2 | 0 | 2 | 3 | 2 | 5 |
| Row Percent | 100.0% | .0% | 100.0% | 60.0% | 40.0% | 100.0% |
| Column Percent | 1.3% | .0% | 1.2% | .8% | 1.3% | .9% |
| 26 | 9 | 4 | 13 | 25 | 13 | 38 |
| Row Percent | 69.2% | 30.8% | 100.0% | 65.8% | 34.2% | 100.0% |
| Column Percent | 6.0% | 18.2% | 7.6% | 6.3% | 8.7% | 6.9% |
| 27 | 19 | 3 | 22 | 56 | 29 | 85 |
| Row Percent | 86.4% | 13.6% | 100.0% | 65.9% | 34.1% | 100.0% |
| Column Percent | 12.7% | 13.6% | 12.8% | 14.0% | 19.5% | 15.5% |
| 28 | 33 | 9 | 42 | 89 | 35 | 124 |
| Row Percent | 78.6% | 21.4% | 100.0% | 71.8% | 28.2% | 100.0% |
| Column Percent | 22.0% | 40.9% | 24.4% | 22.3% | 23.5% | 22.6% |
| 29 | 22 | 0 | 22 | 47 | 12 | 59 |
| Row Percent | 100.0% | .0% | 100.0% | 79.7% | 20.3% | 100.0% |
| Column Percent | 14.7% | .0% | 12.8% | 11.8% | 8.1% | 10.8% |
| 30 to 34 | 50 | 5 | 55 | 132 | 42 | 174 |
| Row Percent | 90.9% | 9.1% | 100.0% | 75.9% | 24.1% | 100.0% |
| Column Percent | 33.3% | 22.7% | 32.0% | 33.1% | 28.2% | 31.8% |
| 35 to 39 | 14 | 0 | 14 | 33 | 12 | 45 |
| Row Percent | 100.0% | .0% | 100.0% | 73.3% | 26.7% | 100.0% |
| Column Percent | 9.3% | .0% | 8.1% | 8.3% | 8.1% | 8.2% |
| 40 to 49 | 1 | 0 | 1 | 14 | 3 | 17 |
| Row Percent | 100.0% | .0% | 100.0% | 82.4% | 17.6% | 100.0% |
| Column Percent | .7% | .0% | .6% | 3.5% | 2.0% | 3.1% |
| 50 to 64 | 0 | 1 | 1 | 0 | 1 | 1 |
| Row Percent | .0% | 100.0% | 100.0% | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 4.5% | .6% | .0% | .7% | .2% |
| TOTAL | 150 | 22 | 172 | 399 | 149 | 548 |
| Row Percent | 87.2% | 12.8% | 100.0% | 72.8% | 27.2% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table D-4

CHEMISTRY POSTDOCTORAL RECIPIENTS
by AGE and SEX
1989 Starting Salary Survey

| | MEN | WOMEN | TOTAL |
|---|---|---|---|
| AGE | | | |
| 25 | 2 | 0 | 2 |
| Row Percent | 100.0% | .0% | 100.0% |
| Column Percent | 1.1% | .0% | .9% |
| 26 | 12 | 6 | 18 |
| Row Percent | 66.7% | 33.3% | 100.0% |
| Column Percent | 6.5% | 12.5% | 7.7% |
| 27 | 20 | 10 | 30 |
| Row Percent | 66.7% | 33.3% | 100.0% |
| Column Percent | 10.8% | 20.8% | 12.9% |
| 28 | 45 | 10 | 55 |
| Row Percent | 81.8% | 18.2% | 100.0% |
| Column Percent | 24.3% | 20.8% | 23.6% |
| 29 | 18 | 3 | 21 |
| Row Percent | 85.7% | 14.3% | 100.0% |
| Column Percent | 9.7% | 6.3% | 9.0% |
| 30 to 34 | 69 | 11 | 80 |
| Row Percent | 86.3% | 13.8% | 100.0% |
| Column Percent | 37.3% | 22.9% | 34.3% |
| 35 to 39 | 15 | 6 | 21 |
| Row Percent | 71.4% | 28.6% | 100.0% |
| Column Percent | 8.1% | 12.5% | 9.0% |
| 40 to 49 | 4 | 1 | 5 |
| Row Percent | 80.0% | 20.0% | 100.0% |
| Column Percent | 2.2% | 2.1% | 2.1% |
| 50 to 64 | 0 | 1 | 1 |
| Row Percent | .0% | 100.0% | 100.0% |
| Column Percent | .0% | 2.1% | .4% |
| TOTAL | 185 | 48 | 233 |
| Row Percent | 79.4% | 20.6% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% |

Table E-1

FULL-TIME EMPLOYED INEXPERIENCED CHEMISTS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| OFFERS OF EMPLOYMENT | | | | | | | | | |
| 1 | 64 | 43 | 107 | 23 | 4 | 27 | 35 | 22 | 57 |
| Row Percent | 59.8% | 40.2% | 100.0% | 85.2% | 14.8% | 100.0% | 61.4% | 38.6% | 100.0% |
| Column Percent | 35.0% | 27.7% | 31.7% | 41.1% | 14.8% | 32.5% | 34.0% | 40.0% | 36.1% |
| 2 | 65 | 46 | 111 | 20 | 8 | 28 | 26 | 8 | 34 |
| Row Percent | 58.6% | 41.4% | 100.0% | 71.4% | 28.6% | 100.0% | 76.5% | 23.5% | 100.0% |
| Column Percent | 35.5% | 29.7% | 32.8% | 35.7% | 29.6% | 33.7% | 25.2% | 14.5% | 21.5% |
| 3 | 28 | 40 | 68 | 8 | 7 | 15 | 27 | 14 | 41 |
| Row Percent | 41.2% | 58.8% | 100.0% | 53.3% | 46.7% | 100.0% | 65.9% | 34.1% | 100.0% |
| Column Percent | 15.3% | 25.8% | 20.1% | 14.3% | 25.9% | 18.1% | 26.2% | 25.5% | 25.9% |
| 4 | 18 | 15 | 33 | 4 | 5 | 9 | 8 | 3 | 11 |
| Row Percent | 54.5% | 45.5% | 100.0% | 44.4% | 55.6% | 100.0% | 72.7% | 27.3% | 100.0% |
| Column Percent | 9.8% | 9.7% | 9.8% | 7.1% | 18.5% | 10.8% | 7.8% | 5.5% | 7.0% |
| 5 | 3 | 6 | 9 | 1 | 1 | 2 | 4 | 4 | 8 |
| Row Percent | 33.3% | 66.7% | 100.0% | 50.0% | 50.0% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 1.6% | 3.9% | 2.7% | 1.8% | 3.7% | 2.4% | 3.9% | 7.3% | 5.1% |
| 6 or 7 | 4 | 4 | 8 | 0 | 2 | 2 | 3 | 3 | 6 |
| Row Percent | 50.0% | 50.0% | 100.0% | .0% | 100.0% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 2.2% | 2.6% | 2.4% | .0% | 7.4% | 2.4% | 2.9% | 5.5% | 3.8% |
| 8 or 9 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 1 |
| Row Percent | 50.0% | 50.0% | 100.0% | .0% | .0% | .0% | .0% | 100.0% | 100.0% |
| Column Percent | .5% | .6% | .6% | .0% | .0% | .0% | .0% | 1.8% | .6% |
| TOTAL | 183 | 155 | 338 | 56 | 27 | 83 | 103 | 55 | 158 |
| Row Percent | 54.1% | 45.9% | 100.0% | 67.5% | 32.5% | 100.0% | 65.2% | 34.8% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table E-2

FULL-TIME EMPLOYED EXPERIENCED CHEMISTS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| OFFERS OF EMPLOYMENT | | | | | | | | | |
| 1 | 34 | 22 | 56 | 22 | 13 | 35 | 17 | 15 | 32 |
| Row Percent | 60.7% | 39.3% | 100.0% | 62.9% | 37.1% | 100.0% | 53.1% | 46.9% | 100.0% |
| Column Percent | 27.9% | 36.7% | 30.8% | 45.8% | 36.1% | 41.7% | 22.7% | 50.0% | 30.5% |
| 2 | 37 | 13 | 50 | 10 | 11 | 21 | 20 | 6 | 26 |
| Row Percent | 74.0% | 26.0% | 100.0% | 47.6% | 52.4% | 100.0% | 76.9% | 23.1% | 100.0% |
| Column Percent | 30.3% | 21.7% | 27.5% | 20.8% | 30.6% | 25.0% | 26.7% | 20.0% | 24.8% |
| 3 | 23 | 16 | 39 | 10 | 9 | 19 | 23 | 6 | 29 |
| Row Percent | 59.0% | 41.0% | 100.0% | 52.6% | 47.4% | 100.0% | 79.3% | 20.7% | 100.0% |
| Column Percent | 18.9% | 26.7% | 21.4% | 20.8% | 25.0% | 22.6% | 30.7% | 20.0% | 27.6% |
| 4 | 11 | 7 | 18 | 4 | 2 | 6 | 6 | 0 | 6 |
| Row Percent | 61.1% | 38.9% | 100.0% | 66.7% | 33.3% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 9.0% | 11.7% | 9.9% | 8.3% | 5.6% | 7.1% | 8.0% | .0% | 5.7% |
| 5 | 8 | 0 | 8 | 1 | 0 | 1 | 6 | 1 | 7 |
| Row Percent | 100.0% | .0% | 100.0% | 100.0% | .0% | 100.0% | 85.7% | 14.3% | 100.0% |
| Column Percent | 6.6% | .0% | 4.4% | 2.1% | .0% | 1.2% | 8.0% | 3.3% | 6.7% |
| 6 or 7 | 6 | 2 | 8 | 1 | 0 | 1 | 2 | 2 | 4 |
| Row Percent | 75.0% | 25.0% | 100.0% | 100.0% | .0% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 4.9% | 3.3% | 4.4% | 2.1% | .0% | 1.2% | 2.7% | 6.7% | 3.8% |
| 8 or 9 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Row Percent | 100.0% | .0% | 100.0% | .0% | .0% | .0% | .0% | .0% | .0% |
| Column Percent | .8% | .0% | .5% | .0% | .0% | .0% | .0% | .0% | .0% |
| 10 OR MORE | 2 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 |
| Row Percent | 100.0% | .0% | 100.0% | .0% | 100.0% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 1.6% | .0% | 1.1% | .0% | 2.8% | 1.2% | 1.3% | .0% | 1.0% |
| TOTAL | 122 | 60 | 182 | 48 | 36 | 84 | 75 | 30 | 105 |
| Row Percent | 67.0% | 33.0% | 100.0% | 57.1% | 42.9% | 100.0% | 71.4% | 28.6% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table E-3

FULL-TIME EMPLOYED INEXPERIENCED CHEMICAL ENGINEERS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| OFFERS OF EMPLOYMENT | | | | | | | | | |
| 1 | 77 | 28 | 105 | 14 | 2 | 16 | 20 | 3 | 23 |
| Row Percent | 73.3% | 26.7% | 100.0% | 87.5% | 12.5% | 100.0% | 87.0% | 13.0% | 100.0% |
| Column Percent | 28.0% | 19.0% | 24.9% | 25.0% | 18.2% | 23.9% | 28.6% | 30.0% | 28.8% |
| 2 | 51 | 32 | 83 | 15 | 3 | 18 | 16 | 2 | 18 |
| Row Percent | 61.4% | 38.6% | 100.0% | 83.3% | 16.7% | 100.0% | 88.9% | 11.1% | 100.0% |
| Column Percent | 18.5% | 21.8% | 19.7% | 26.8% | 27.3% | 26.9% | 22.9% | 20.0% | 22.5% |
| 3 | 51 | 32 | 83 | 14 | 3 | 17 | 13 | 3 | 16 |
| Row Percent | 61.4% | 38.6% | 100.0% | 82.4% | 17.6% | 100.0% | 81.3% | 18.8% | 100.0% |
| Column Percent | 18.5% | 21.8% | 19.7% | 25.0% | 27.3% | 25.4% | 18.6% | 30.0% | 20.0% |
| 4 | 26 | 19 | 45 | 6 | 1 | 7 | 11 | 0 | 11 |
| Row Percent | 57.8% | 42.2% | 100.0% | 85.7% | 14.3% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 9.5% | 12.9% | 10.7% | 10.7% | 9.1% | 10.4% | 15.7% | .0% | 13.8% |
| 5 | 20 | 14 | 34 | 3 | 2 | 5 | 4 | 0 | 4 |
| Row Percent | 58.8% | 41.2% | 100.0% | 60.0% | 40.0% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 7.3% | 9.5% | 8.1% | 5.4% | 18.2% | 7.5% | 5.7% | .0% | 5.0% |
| 6 or 7 | 36 | 17 | 53 | 4 | 0 | 4 | 5 | 2 | 7 |
| Row Percent | 67.9% | 32.1% | 100.0% | 100.0% | .0% | 100.0% | 71.4% | 28.6% | 100.0% |
| Column Percent | 13.1% | 11.6% | 12.6% | 7.1% | .0% | 6.0% | 7.1% | 20.0% | 8.8% |
| 8 or 9 | 10 | 4 | 14 | 0 | 0 | 0 | 1 | 0 | 1 |
| Row Percent | 71.4% | 28.6% | 100.0% | .0% | .0% | .0% | 100.0% | .0% | 100.0% |
| Column Percent | 3.6% | 2.7% | 3.3% | .0% | .0% | .0% | 1.4% | .0% | 1.3% |
| 10 OR MORE | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Row Percent | 80.0% | 20.0% | 100.0% | .0% | .0% | .0% | .0% | .0% | .0% |
| Column Percent | 1.5% | .7% | 1.2% | .0% | .0% | .0% | .0% | .0% | .0% |
| TOTAL | 275 | 147 | 422 | 56 | 11 | 67 | 70 | 10 | 80 |
| Row Percent | 65.2% | 34.8% | 100.0% | 83.6% | 16.4% | 100.0% | 87.5% | 12.5% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table E-4

## FULL-TIME EMPLOYED EXPERIENCED CHEMICAL ENGINEERS
## by NUMBER OF JOB OFFERS, SEX, and DEGREE
## 1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| OFFERS OF EMPLOYMENT | | | | | | | | | |
| 1 | 21 | 8 | 29 | 16 | 4 | 20 | 10 | 3 | 13 |
| Row Percent | 72.4% | 27.6% | 100.0% | 80.0% | 20.0% | 100.0% | 76.9% | 23.1% | 100.0% |
| Column Percent | 15.9% | 11.9% | 14.6% | 37.2% | 22.2% | 32.8% | 25.0% | 42.9% | 27.7% |
| 2 | 25 | 11 | 36 | 13 | 4 | 17 | 14 | 2 | 16 |
| Row Percent | 69.4% | 30.6% | 100.0% | 76.5% | 23.5% | 100.0% | 87.5% | 12.5% | 100.0% |
| Column Percent | 18.9% | 16.4% | 18.1% | 30.2% | 22.2% | 27.9% | 35.0% | 28.6% | 34.0% |
| 3 | 18 | 20 | 38 | 3 | 3 | 6 | 6 | 0 | 6 |
| Row Percent | 47.4% | 52.6% | 100.0% | 50.0% | 50.0% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 13.6% | 29.9% | 19.1% | 7.0% | 16.7% | 9.8% | 15.0% | .0% | 12.8% |
| 4 | 19 | 11 | 30 | 3 | 2 | 5 | 5 | 1 | 6 |
| Row Percent | 63.3% | 36.7% | 100.0% | 60.0% | 40.0% | 100.0% | 83.3% | 16.7% | 100.0% |
| Column Percent | 14.4% | 16.4% | 15.1% | 7.0% | 11.1% | 8.2% | 12.5% | 14.3% | 12.8% |
| 5 | 7 | 6 | 13 | 4 | 2 | 6 | 3 | 1 | 4 |
| Row Percent | 53.8% | 46.2% | 100.0% | 66.7% | 33.3% | 100.0% | 75.0% | 25.0% | 100.0% |
| Column Percent | 5.3% | 9.0% | 6.5% | 9.3% | 11.1% | 9.8% | 7.5% | 14.3% | 8.5% |
| 6 or 7 | 25 | 7 | 32 | 4 | 0 | 4 | 2 | 0 | 2 |
| Row Percent | 78.1% | 21.9% | 100.0% | 100.0% | .0% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 18.9% | 10.4% | 16.1% | 9.3% | .0% | 6.6% | 5.0% | .0% | 4.3% |
| 8 or 9 | 16 | 1 | 17 | 0 | 3 | 3 | 0 | 0 | 0 |
| Row Percent | 94.1% | 5.9% | 100.0% | .0% | 100.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 12.1% | 1.5% | 8.5% | .0% | 16.7% | 4.9% | .0% | .0% | .0% |
| 10 OR MORE | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Row Percent | 25.0% | 75.0% | 100.0% | .0% | .0% | .0% | .0% | .0% | .0% |
| Column Percent | .8% | 4.5% | 2.0% | .0% | .0% | .0% | .0% | .0% | .0% |
| TOTAL | 132 | 67 | 199 | 43 | 18 | 61 | 40 | 7 | 47 |
| Row Percent | 66.3% | 33.7% | 100.0% | 70.5% | 29.5% | 100.0% | 85.1% | 14.9% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-1

BS CHEMISTRY GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER | |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 9 | 6 | 9 | 21 | 34 | 23 | 1389 | 9 | 1500 |
| Row Percent | .6% | .4% | .6% | 1.4% | 2.3% | 1.5% | 92.6% | .6% | 100.0% |
| Column Percent | 100.0% | 40.0% | 23.1% | 33.3% | 69.4% | 62.2% | 97.1% | 56.3% | 90.4% |
| U.S. NATURALIZED | 0 | 7 | 18 | 27 | 3 | 8 | 18 | 2 | 83 |
| Row Percent | .0% | 8.4% | 21.7% | 32.5% | 3.6% | 9.6% | 21.7% | 2.4% | 100.0% |
| Column Percent | .0% | 46.7% | 46.2% | 42.9% | 6.1% | 21.6% | 1.3% | 12.5% | 5.0% |
| U.S. PERMANENT RESIDENT | 0 | 2 | 6 | 12 | 5 | 3 | 19 | 4 | 51 |
| Row Percent | .0% | 3.9% | 11.8% | 23.5% | 9.8% | 5.9% | 37.3% | 7.8% | 100.0% |
| Column Percent | .0% | 13.3% | 15.4% | 19.0% | 10.2% | 8.1% | 1.3% | 25.0% | 3.1% |
| OTHER VISA | 0 | 0 | 6 | 3 | 7 | 3 | 5 | 1 | 25 |
| Row Percent | .0% | .0% | 24.0% | 12.0% | 28.0% | 12.0% | 20.0% | 4.0% | 100.0% |
| Column Percent | .0% | .0% | 15.4% | 4.8% | 14.3% | 8.1% | .3% | 6.3% | 1.5% |
| TOTAL | 9 | 15 | 39 | 63 | 49 | 37 | 1431 | 16 | 1659 |
| Row Percent | .5% | .9% | 2.4% | 3.8% | 3.0% | 2.2% | 86.3% | 1.0% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-1 Continued

MS CHEMISTRY GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER | |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 0 | 0 | 3 | 2 | 2 | 7 | 252 | 0 | 266 |
| Row Percent | .0% | .0% | 1.1% | .8% | .8% | 2.6% | 94.7% | .0% | 100.0% |
| Column Percent | .0% | .0% | 5.9% | 11.1% | 22.2% | 77.8% | 95.1% | .0% | 74.1% |
| U.S. NATURALIZED | 0 | 1 | 6 | 3 | 0 | 0 | 3 | 1 | 14 |
| Row Percent | .0% | 7.1% | 42.9% | 21.4% | .0% | .0% | 21.4% | 7.1% | 100.0% |
| Column Percent | .0% | 25.0% | 11.8% | 16.7% | .0% | .0% | 1.1% | 50.0% | 3.9% |
| U.S. PERMANENT RESIDENT | 1 | 2 | 2 | 2 | 2 | 0 | 4 | 1 | 14 |
| Row Percent | 7.1% | 14.3% | 14.3% | 14.3% | 14.3% | .0% | 28.6% | 7.1% | 100.0% |
| Column Percent | 100.0% | 50.0% | 3.9% | 11.1% | 22.2% | .0% | 1.5% | 50.0% | 3.9% |
| OTHER VISA | 0 | 1 | 40 | 11 | 5 | 2 | 6 | 0 | 65 |
| Row Percent | .0% | 1.5% | 61.5% | 16.9% | 7.7% | 3.1% | 9.2% | .0% | 100.0% |
| Column Percent | .0% | 25.0% | 78.4% | 61.1% | 55.6% | 22.2% | 2.3% | .0% | 18.1% |
| TOTAL | 1 | 4 | 51 | 18 | 9 | 9 | 265 | 2 | 359 |
| Row Percent | .3% | 1.1% | 14.2% | 5.0% | 2.5% | 2.5% | 73.8% | .6% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-1 Continued

PHD CHEMISTRY GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

| | RACE OR ETHNIC GROUP | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER | |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 0 | 0 | 4 | 2 | 2 | 6 | 376 | 5 | 395 |
| Row Percent | .0% | .0% | 1.0% | .5% | .5% | 1.5% | 95.2% | 1.3% | 100.0% |
| Column Percent | .0% | .0% | 5.1% | 5.6% | 28.6% | 42.9% | 94.0% | 83.3% | 71.6% |
| U.S. NATURALIZED | 0 | 1 | 5 | 3 | 1 | 1 | 7 | 0 | 18 |
| Row Percent | .0% | 5.6% | 27.8% | 16.7% | 5.6% | 5.6% | 38.9% | .0% | 100.0% |
| Column Percent | .0% | 9.1% | 6.4% | 8.3% | 14.3% | 7.1% | 1.8% | .0% | 3.3% |
| U.S. PERMANENT RESIDENT | 0 | 0 | 10 | 2 | 1 | 2 | 4 | 0 | 19 |
| Row Percent | .0% | .0% | 52.6% | 10.5% | 5.3% | 10.5% | 21.1% | .0% | 100.0% |
| Column Percent | .0% | .0% | 12.8% | 5.6% | 14.3% | 14.3% | 1.0% | .0% | 3.4% |
| OTHER VISA | 0 | 10 | 59 | 29 | 3 | 5 | 13 | 1 | 120 |
| Row Percent | .0% | 8.3% | 49.2% | 24.2% | 2.5% | 4.2% | 10.8% | .8% | 100.0% |
| Column Percent | .0% | 90.9% | 75.6% | 80.6% | 42.9% | 35.7% | 3.3% | 16.7% | 21.7% |
| TOTAL | 0 | 11 | 78 | 36 | 7 | 14 | 400 | 6 | 552 |
| Row Percent | .0% | 2.0% | 14.1% | 6.5% | 1.3% | 2.5% | 72.5% | 1.1% | 100.0% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-2

CHEMISTRY GRADUATES
by CITIZENSHIP, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 923 | 583 | 1506 | 169 | 100 | 269 | 279 | 116 | 395 |
| Row Percent | 61.3% | 38.7% | 100.0% | 62.8% | 37.2% | 100.0% | 70.6% | 29.4% | 100.0% |
| Column Percent | 90.2% | 90.7% | 90.4% | 71.9% | 78.7% | 74.3% | 69.4% | 77.9% | 71.7% |
| U.S. NATURALIZED | 49 | 34 | 83 | 10 | 4 | 14 | 12 | 6 | 18 |
| Row Percent | 59.0% | 41.0% | 100.0% | 71.4% | 28.6% | 100.0% | 66.7% | 33.3% | 100.0% |
| Column Percent | 4.8% | 5.3% | 5.0% | 4.3% | 3.1% | 3.9% | 3.0% | 4.0% | 3.3% |
| U.S. PERMANENT RESIDENT | 34 | 18 | 52 | 8 | 6 | 14 | 13 | 6 | 19 |
| Row Percent | 65.4% | 34.6% | 100.0% | 57.1% | 42.9% | 100.0% | 68.4% | 31.6% | 100.0% |
| Column Percent | 3.3% | 2.8% | 3.1% | 3.4% | 4.7% | 3.9% | 3.2% | 4.0% | 3.4% |
| OTHER VISA | 17 | 8 | 25 | 48 | 17 | 65 | 98 | 21 | 119 |
| Row Percent | 68.0% | 32.0% | 100.0% | 73.8% | 26.2% | 100.0% | 82.4% | 17.6% | 100.0% |
| Column Percent | 1.7% | 1.2% | 1.5% | 20.4% | 13.4% | 18.0% | 24.4% | 14.1% | 21.6% |
| TOTAL | 1023 | 643 | 1666 | 235 | 127 | 362 | 402 | 149 | 551 |
| Row Percent | 61.4% | 38.6% | 100.0% | 64.9% | 35.1% | 100.0% | 73.0% | 27.0% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-3

MINORITY CHEMISTRY GRADUATES
by MINORITY CLASSIFICATION, SEX, AND DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| MINORITY CLASSIFICATION | | | | | | | | | |
| AMER INDIAN | 4 | 5 | 9 | 1 | 0 | 1 | 0 | 0 | 0 |
| Row Percent | 44.4% | 55.6% | 100.0% | 100.0% | .0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 3.1% | 5.0% | 3.9% | 1.5% | .0% | 1.1% | .0% | .0% | .0% |
| CHINESE | 9 | 6 | 15 | 4 | 0 | 4 | 8 | 2 | 10 |
| Row Percent | 60.0% | 40.0% | 100.0% | 100.0% | .0% | 100.0% | 80.0% | 20.0% | 100.0% |
| Column Percent | 7.1% | 5.9% | 6.6% | 6.1% | .0% | 4.3% | 6.7% | 6.5% | 6.6% |
| SUBCONT INDIAN | 23 | 16 | 39 | 33 | 18 | 51 | 63 | 15 | 78 |
| Row Percent | 59.0% | 41.0% | 100.0% | 64.7% | 35.3% | 100.0% | 80.8% | 19.2% | 100.0% |
| Column Percent | 18.1% | 15.8% | 17.1% | 50.0% | 64.3% | 54.3% | 52.5% | 48.4% | 51.7% |
| OTHER ASIAN | 37 | 26 | 63 | 11 | 7 | 18 | 29 | 7 | 36 |
| Row Percent | 58.7% | 41.3% | 100.0% | 61.1% | 38.9% | 100.0% | 80.6% | 19.4% | 100.0% |
| Column Percent | 29.1% | 25.7% | 27.6% | 16.7% | 25.0% | 19.1% | 24.2% | 22.6% | 23.8% |
| BLACK | 21 | 28 | 49 | 9 | 0 | 9 | 6 | 1 | 7 |
| Row Percent | 42.9% | 57.1% | 100.0% | 100.0% | .0% | 100.0% | 85.7% | 14.3% | 100.0% |
| Column Percent | 16.5% | 27.7% | 21.5% | 13.6% | .0% | 9.6% | 5.0% | 3.2% | 4.6% |
| HISPANIC | 24 | 13 | 37 | 7 | 2 | 9 | 9 | 5 | 14 |
| Row Percent | 64.9% | 35.1% | 100.0% | 77.8% | 22.2% | 100.0% | 64.3% | 35.7% | 100.0% |
| Column Percent | 18.9% | 12.9% | 16.2% | 10.6% | 7.1% | 9.6% | 7.5% | 16.1% | 9.3% |
| OTHER | 9 | 7 | 16 | 1 | 1 | 2 | 5 | 1 | 6 |
| Row Percent | 56.3% | 43.8% | 100.0% | 50.0% | 50.0% | 100.0% | 83.3% | 16.7% | 100.0% |
| Column Percent | 7.1% | 6.9% | 7.0% | 1.5% | 3.6% | 2.1% | 4.2% | 3.2% | 4.0% |
| TOTAL | 127 | 101 | 228 | 66 | 28 | 94 | 120 | 31 | 151 |
| Row Percent | 55.7% | 44.3% | 100.0% | 70.2% | 29.8% | 100.0% | 79.5% | 20.5% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-4

BS CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

| | MINORITY CLASSIFICATION | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER | |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 7 | 2 | 14 | 10 | 22 | 13 | 711 | 4 | 783 |
| Row Percent | .9% | .3% | 1.8% | 1.3% | 2.8% | 1.7% | 90.8% | .5% | 100.0% |
| Column Percent | 100.0% | 40.0% | 58.3% | 33.3% | 84.6% | 68.4% | 98.2% | 50.0% | 92.9% |
| U.S. NATURALIZED | 0 | 1 | 5 | 14 | 2 | 3 | 4 | 1 | 30 |
| Row Percent | .0% | 3.3% | 16.7% | 46.7% | 6.7% | 10.0% | 13.3% | 3.3% | 100.0% |
| Column Percent | .0% | 20.0% | 20.8% | 46.7% | 7.7% | 15.8% | .6% | 12.5% | 3.6% |
| U.S. PERMANENT RESIDENT | 0 | 2 | 4 | 1 | 1 | 3 | 5 | 1 | 17 |
| Row Percent | .0% | 11.8% | 23.5% | 5.9% | 5.9% | 17.6% | 29.4% | 5.9% | 100.0% |
| Column Percent | .0% | 40.0% | 16.7% | 3.3% | 3.8% | 15.8% | .7% | 12.5% | 2.0% |
| OTHER VISA | 0 | 0 | 1 | 5 | 1 | 0 | 4 | 2 | 13 |
| Row Percent | .0% | .0% | 7.7% | 38.5% | 7.7% | .0% | 30.8% | 15.4% | 100.0% |
| Column Percent | .0% | .0% | 4.2% | 16.7% | 3.8% | .0% | .6% | 25.0% | 1.5% |
| TOTAL | 7 | 5 | 24 | 30 | 26 | 19 | 724 | 8 | 843 |
| Row Percent | .8% | .6% | 2.8% | 3.6% | 3.1% | 2.3% | 85.9% | .9% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-4 Continued

MS CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

| | MINORITY CLASSIFICATION | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER | |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 1 | 0 | 0 | 1 | 0 | 3 | 152 | 1 | 158 |
| Row Percent | .6% | .0% | .0% | .6% | .0% | 1.9% | 96.2% | .6% | 100.0% |
| Column Percent | 100.0% | .0% | .0% | 5.3% | .0% | 50.0% | 91.0% | 33.3% | 69.3% |
| U.S. NATURALIZED | 0 | 1 | 1 | 3 | 2 | 0 | 2 | 1 | 10 |
| Row Percent | .0% | 10.0% | 10.0% | 30.0% | 20.0% | .0% | 20.0% | 10.0% | 100.0% |
| Column Percent | .0% | 6.7% | 10.0% | 15.8% | 28.6% | .0% | 1.2% | 33.3% | 4.4% |
| U.S. PERMANENT RESIDENT | 0 | 0 | 0 | 2 | 3 | 3 | 4 | 0 | 12 |
| Row Percent | .0% | .0% | .0% | 16.7% | 25.0% | 25.0% | 33.3% | .0% | 100.0% |
| Column Percent | .0% | .0% | .0% | 10.5% | 42.9% | 50.0% | 2.4% | .0% | 5.3% |
| OTHER VISA | 0 | 14 | 9 | 13 | 2 | 0 | 9 | 1 | 48 |
| Row Percent | .0% | 29.2% | 18.8% | 27.1% | 4.2% | .0% | 18.8% | 2.1% | 100.0% |
| Column Percent | .0% | 93.3% | 90.0% | 68.4% | 28.6% | .0% | 5.4% | 33.3% | 21.1% |
| TOTAL | 1 | 15 | 10 | 19 | 7 | 6 | 167 | 3 | 228 |
| Row Percent | .4% | 6.6% | 4.4% | 8.3% | 3.1% | 2.6% | 73.2% | 1.3% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-4 Continued

PHD CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

| | MINORITY CLASSIFICATION | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | AMER INDIAN | CHINESE | SUBCONT INDIAN | OTHER ASIAN | BLACK | HISP | WHITE | OTHER | |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 0 | 0 | 3 | 3 | 0 | 0 | 108 | 1 | 115 |
| Row Percent | .0% | .0% | 2.6% | 2.6% | .0% | .0% | 93.9% | .9% | 100.0% |
| Column Percent | .0% | .0% | 16.7% | 33.3% | .0% | .0% | 87.1% | 100.0% | 67.6% |
| U.S. NATURALIZED | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 5 |
| Row Percent | .0% | 20.0% | 40.0% | .0% | .0% | 20.0% | 20.0% | .0% | 100.0% |
| Column Percent | .0% | 6.7% | 11.1% | .0% | .0% | 50.0% | .8% | .0% | 2.9% |
| U.S. PERMANENT RESIDENT | 0 | 4 | 3 | 1 | 0 | 1 | 4 | 0 | 13 |
| Row Percent | .0% | 30.8% | 23.1% | 7.7% | .0% | 7.7% | 30.8% | .0% | 100.0% |
| Column Percent | .0% | 26.7% | 16.7% | 11.1% | .0% | 50.0% | 3.2% | .0% | 7.6% |
| OTHER VISA | 0 | 10 | 10 | 5 | 1 | 0 | 11 | 0 | 37 |
| Row Percent | .0% | 27.0% | 27.0% | 13.5% | 2.7% | .0% | 29.7% | .0% | 100.0% |
| Column Percent | .0% | 66.7% | 55.6% | 55.6% | 100.0% | .0% | 8.9% | .0% | 21.8% |
| TOTAL | 0 | 15 | 18 | 9 | 1 | 2 | 124 | 1 | 170 |
| Row Percent | .0% | 8.8% | 10.6% | 5.3% | .6% | 1.2% | 72.9% | .6% | 100.0% |
| Column Percent | .0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-5

CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP, SEX, and DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| CITIZENSHIP | | | | | | | | | |
| U.S. NATIVE | 525 | 263 | 788 | 111 | 46 | 157 | 100 | 17 | 117 |
| Row Percent | 66.6% | 33.4% | 100.0% | 70.7% | 29.3% | 100.0% | 85.5% | 14.5% | 100.0% |
| Column Percent | 92.6% | 93.6% | 92.9% | 64.2% | 83.6% | 68.9% | 67.1% | 73.9% | 68.0% |
| U.S. NATURALIZED | 20 | 10 | 30 | 8 | 2 | 10 | 4 | 1 | 5 |
| Row Percent | 66.7% | 33.3% | 100.0% | 80.0% | 20.0% | 100.0% | 80.0% | 20.0% | 100.0% |
| Column Percent | 3.5% | 3.6% | 3.5% | 4.6% | 3.6% | 4.4% | 2.7% | 4.3% | 2.9% |
| U.S. PERMANENT RESIDENT | 12 | 5 | 17 | 8 | 4 | 12 | 12 | 1 | 13 |
| Row Percent | 70.6% | 29.4% | 100.0% | 66.7% | 33.3% | 100.0% | 92.3% | 7.7% | 100.0% |
| Column Percent | 2.1% | 1.8% | 2.0% | 4.6% | 7.3% | 5.3% | 8.1% | 4.3% | 7.6% |
| OTHER VISA | 10 | 3 | 13 | 46 | 3 | 49 | 33 | 4 | 37 |
| Row Percent | 76.9% | 23.1% | 100.0% | 93.9% | 6.1% | 100.0% | 89.2% | 10.8% | 100.0% |
| Column Percent | 1.8% | 1.1% | 1.5% | 26.6% | 5.5% | 21.5% | 22.1% | 17.4% | 21.5% |
| TOTAL | 567 | 281 | 848 | 173 | 55 | 228 | 149 | 23 | 172 |
| Row Percent | 66.9% | 33.1% | 100.0% | 75.9% | 24.1% | 100.0% | 86.6% | 13.4% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table F-6

MINORITY CHEMICAL ENGINEERING GRADUATES
by MINORITY CLASSIFICATION, SEX, AND DEGREE
1989 Starting Salary Survey

| | BS | | | MS | | | PHD | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL |
| RACE OR ETHNIC GROUP | | | | | | | | | |
| AMER INDIAN | 2 | 5 | 7 | 0 | 1 | 1 | 0 | 0 | 0 |
| Row Percent | 28.6% | 71.4% | 100.0% | .0% | 100.0% | 100.0% | .0% | .0% | .0% |
| Column Percent | 3.2% | 8.9% | 5.9% | .0% | 9.1% | 1.6% | .0% | .0% | .0% |
| CHINESE | 2 | 3 | 5 | 15 | 0 | 15 | 15 | 0 | 15 |
| Row Percent | 40.0% | 60.0% | 100.0% | 100.0% | .0% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 3.2% | 5.4% | 4.2% | 30.0% | .0% | 24.6% | 37.5% | .0% | 32.6% |
| SUBCONT INDIAN | 9 | 15 | 24 | 9 | 1 | 10 | 16 | 2 | 18 |
| Row Percent | 37.5% | 62.5% | 100.0% | 90.0% | 10.0% | 100.0% | 88.9% | 11.1% | 100.0% |
| Column Percent | 14.3% | 26.8% | 20.2% | 18.0% | 9.1% | 16.4% | 40.0% | 33.3% | 39.1% |
| OTHER ASIAN | 20 | 10 | 30 | 17 | 2 | 19 | 6 | 3 | 9 |
| Row Percent | 66.7% | 33.3% | 100.0% | 89.5% | 10.5% | 100.0% | 66.7% | 33.3% | 100.0% |
| Column Percent | 31.7% | 17.9% | 25.2% | 34.0% | 18.2% | 31.1% | 15.0% | 50.0% | 19.6% |
| BLACK | 13 | 13 | 26 | 6 | 1 | 7 | 1 | 0 | 1 |
| Row Percent | 50.0% | 50.0% | 100.0% | 85.7% | 14.3% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 20.6% | 23.2% | 21.8% | 12.0% | 9.1% | 11.5% | 2.5% | .0% | 2.2% |
| HISPANIC | 10 | 9 | 19 | 1 | 5 | 6 | 1 | 1 | 2 |
| Row Percent | 52.6% | 47.4% | 100.0% | 16.7% | 83.3% | 100.0% | 50.0% | 50.0% | 100.0% |
| Column Percent | 15.9% | 16.1% | 16.0% | 2.0% | 45.5% | 9.8% | 2.5% | 16.7% | 4.3% |
| OTHER | 7 | 1 | 8 | 2 | 1 | 3 | 1 | 0 | 1 |
| Row Percent | 87.5% | 12.5% | 100.0% | 66.7% | 33.3% | 100.0% | 100.0% | .0% | 100.0% |
| Column Percent | 11.1% | 1.8% | 6.7% | 4.0% | 9.1% | 4.9% | 2.5% | .0% | 2.2% |
| TOTAL | 63 | 56 | 119 | 50 | 11 | 61 | 40 | 6 | 46 |
| Row Percent | 52.9% | 47.1% | 100.0% | 82.0% | 18.0% | 100.0% | 87.0% | 13.0% | 100.0% |
| Column Percent | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

American Chemical Society

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4534

*JOHN K CRUM*
*Executive Director*

Summer 1989

Dear Colleague:

Every year, the American Chemical Society conducts a mail survey of persons who have recently earned degrees in chemistry or chemical engineering. Published results, which include information about salaries and employment, are useful to the profession, and especially to those beginning their careers.

I urge you, as a service to your colleagues and profession, to respond to this year's questionnaire. The procedure is confidential. The information you provide will be combined with returns from other graduates so that only aggregated data will be available. To ensure confidentiality, your name and address will not be coded with the information you provide.

Please complete this questionnaire and return it promptly. For your convenience, I have enclosed a self-addressed, postage-paid envelope. Results of the survey will be published in the CHEMICAL AND ENGINEERING NEWS' Career Issue this October and in a more extensive report later in the year.

Thank you for your assistance with this survey. I extend my best wishes for every success in your professional pursuits.

Sincerely,

John K Crum

John K Crum

Enclosure

# AMERICAN CHEMICAL SOCIETY
# Survey of Starting Salaries and Employment Status of 1989 Chemistry and Chemical Engineering Graduates

**1. Highest degree earned:**
- Bachelor's ☐ 1
- Master's ☐ 2
- Doctorate ☐ 3

**2. Field of highest degree:**
- Chemical engineering ☐ 01
- Biochemical engineering ☐ 02
- Biochemistry ☐ 03
- Analytical chemistry ☐ 04
- Inorganic chemistry ☐ 05
- Organic chemistry ☐ 06
- Physical chemistry ☐ 07
- Polymer chemistry ☐ 08
- Other chemistry ☐ 09
- Other (please specify) _____ ☐ 10

**3. Grade point average:**
**[Use A = 4.00; B = 3.00; C = 2.00]**

In your major _____

Overall _____

**4. Please describe the school that granted your degree:**

a. Public ☐ 1
Private ☐ 2

b. Total number of students:
- Less than 1,500 ☐ 1
- 1,500 to 4,999 ☐ 2
- 5,000 to 9,999 ☐ 3
- 10,000 to 19,999 ☐ 4
- 20,000 or more ☐ 5

c. The highest degree offered by your department is:
- BS ☐ 1
- MS ☐ 2
- PhD ☐ 3

d. Location of school. Please give first three digits of zip code:

— — —

e. Is the school an historically or predominantly black institution?
- Yes ☐ 1
- No ☐ 2

f. Is the school a traditionally women's institution?
- Yes ☐ 1
- No ☐ 2

**5. How would you rate the state of equipment in your chemistry or chemical engineering classes?**

a. The type of equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

b. The access to equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

c. How up-to-date was the equipment?
- Extremely ☐ 1
- Moderately ☐ 2
- Not at all ☐ 3

**6. In your chemistry classes, did you get a chance to:**

a. Work in teams?
- Yes ☐ 1
- No ☐ 2

b. Work on independent research projects?
- Yes ☐ 1
- No ☐ 2

**7. Will you pursue advanced studies in the fall of 1989?**
- Yes, full-time ☐ 1
- Yes, part-time ☐ 2
- No ☐ 3

a. If yes, field of further studies:
- Chemistry ☐ 01
- Other physical science or mathematics ☐ 02
- Chemical engineering or biochemical engineering ☐ 03
- Other engineering ☐ 04
- Biochemistry ☐ 05
- Life science ☐ 06
- Medicine ☐ 07
- Dentistry ☐ 08
- Pharmacy, pharmacology ☐ 09
- Business management ☐ 10
- Education ☐ 11
- Law ☐ 12
- Other (please specify) _____ ☐ 13

**8. Age at last birthday? __ __ years old**

**9. Sex:**
- Male ☐ 1
- Female ☐ 2

**10. Citizenship or visa status:**
- U.S. native ☐ 1
- U.S. naturalized ☐ 2
- U.S. permanent resident visa ☐ 3
- Other visa ☐ 4

**11. Race or ethnic group:**
- American Indian or Alaskan Native ☐ 1
- Subcontinental Indian ☐ 2
- Chinese ☐ 3
- Other Asian or Pacific Islander ☐ 4
- Black (not of Hispanic origin) ☐ 5
- Hispanic ☐ 6
- White (not of Hispanic origin) ☐ 7
- Other race or ethnic group ☐ 8

**12. Current employment status:**
- Accepted or continuing full-time employment (excluding summer employment) ☐ 1
- Accepted a graduate assistantship, fellowship or postdoctoral fellowship ☐ 2
- Part-time employment ☐ 3
- Temporary/summer employment ☐ 4
- Not employed ☐ 5

a. If not continuing full-time employment, are you:
- *seeking* full-time, year-round employment ☐ 1
- *not seeking* full-time, year-round employment ☐ 2

**IF YOU CHECKED BOX 3,4, OR 5 IN QUESTION 12 ABOVE, PLEASE STOP HERE AND RETURN THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED**

**13. Your base annual salary from principal job:**

$ _____ per year

**IF YOU HOLD AN ASSISTANTSHIP OR FELLOWSHIP, PLEASE STOP HERE AND RETURN THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED.**

**14. How many firm offers of employment did you receive in a field of chemistry or chemical engineering?**

Specify number _____

**15. Professional or technical work experience prior to graduation**

Less than 12 months (or none) ☐ 1
12 to 36 months ☐ 2
More than 36 months ☐ 3

**16. Check the one specialty most related to your job:**

Chemical engineering ☐ 1
Chemistry (including biochemistry) ☐ 2
Other ☐ 3

**17. Check the one category that best describes your employer:**

Private industry ☐ 1
College or university ☐ 2
High school or other school ☐ 3
Federal government (civilian) ☐ 4
Military ☐ 5
State or local government ☐ 6
Hospital or independent laboratory ☐ 7
Other (please specify) _____ ☐ 8

**18. Check the one work function that best describes your job:**

Teaching ☐ 1
Management or administration ☐ 2
Basic research ☐ 3
Applied research/Development/Design ☐ 4
Production/Quality control ☐ 5
Other (please specify) _____ ☐ 6

a. Is your job classified as a technician position?
Yes ☐ 1
No ☐ 2

**19. Employer's approximate number of employees (total for the whole organization, all locations):**

Less than 500 ☐ 1
500 to 2,499 ☐ 2
2,500 to 9,999 ☐ 3
10,000 to 24,999 ☐ 4
24,000 or more ☐ 5

**20. Geographic location of employment: Please give first three digits of zip code.**

— — —

**Comments:**

*THANK YOU FOR YOUR PARTICIPATION*

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