

# STARTING SALARIES

Of Chemists and  
Chemical Engineers

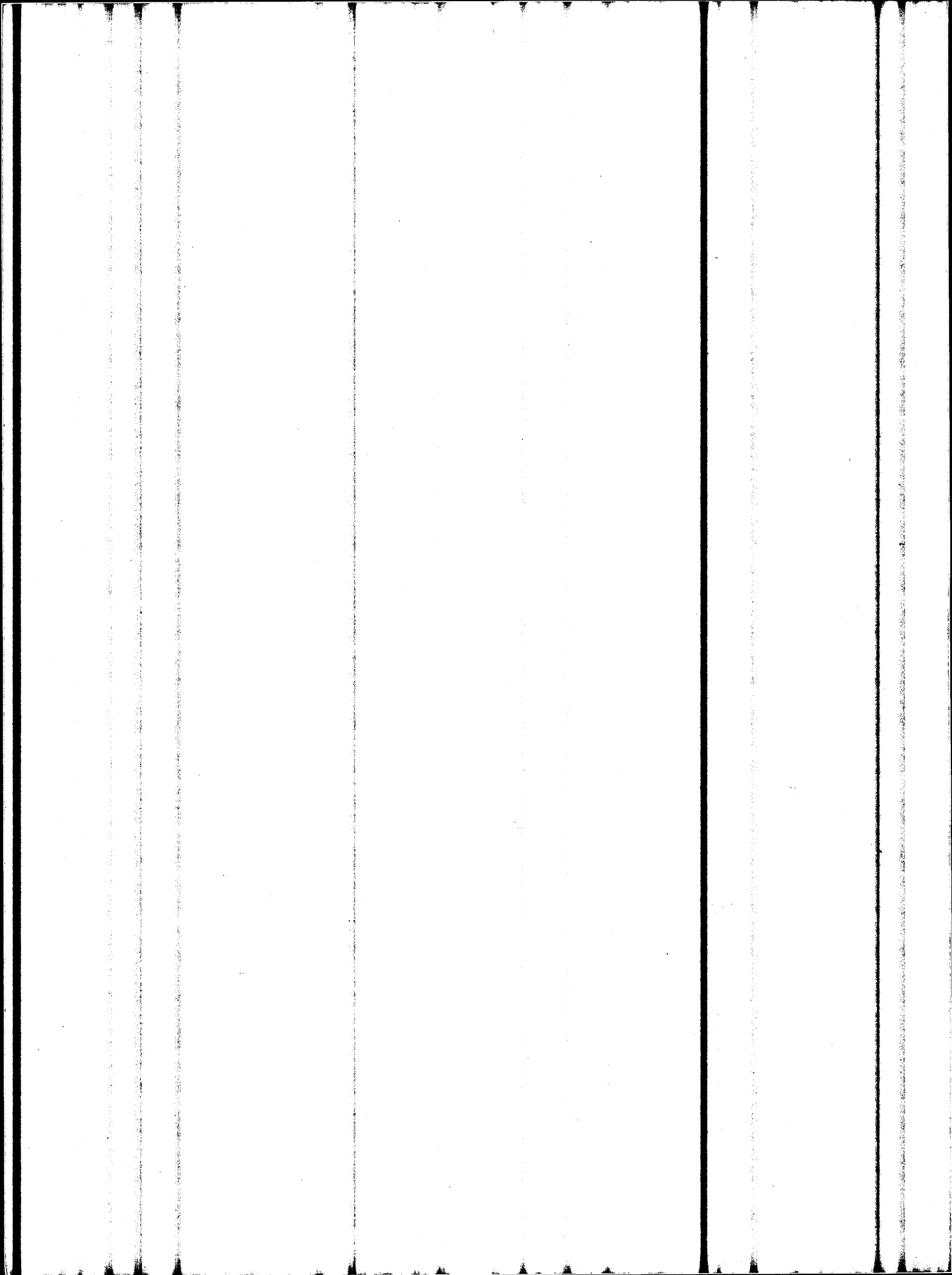
Analysis of the  
American Chemical Society's  
Survey of Graduates in  
Chemistry and Chemical Engineering

1996



AMERICAN CHEMICAL SOCIETY  
COMMITTEE ON ECONOMIC AND PROFESSIONAL AFFAIRS  
DEPARTMENT OF CAREER SERVICES

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

American Chemical Society  
1155 Sixteenth Street, NW  
Washington, DC 20036

Available from the ACS Membership Service Center



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## ACKNOWLEDGMENTS

Each year, at the direction of its Council Committee on Economic and Professional Affairs, 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 1996 Starting Salary Survey. A summary of the preliminary survey findings was published in the October 28 issue of *Chemical & Engineering News*.

Mary Jordan, Senior Research Analyst, conducted this year's survey, analyzed the data and wrote the summary and comment on the following pages. Special thanks go to the more than 5000 graduates who took the time to respond to this year's survey.

Mary L. Funke, Head  
Department of Career Services

## SUMMARY OF FINDINGS

### SALARIES

This year's new BS chemistry graduates saw few increases in overall starting salaries from 1995. The mean salary for inexperienced (those with less than 12 months experience) BS chemists was \$26,119 this year, an increase of 2.8 percent over 1995. The median starting salary was again \$25,000 this year. Adjusting for inflation\*, BS chemists' mean salaries decreased by 0.1 percent.

The news on starting salaries for MS and PhD chemists was not encouraging for inexperienced graduates receiving their degrees. The mean starting salary for MS chemists fell by 2.5 percent this year to \$33,886, erasing last year's largest increase for all new chemists. At the same time the mean starting salary for PhD chemists fell farther below even the 1993 level with another decline this year, from \$45,087 to \$44,408. Inflation-adjusted salaries for MS chemists were down 5.4 percent and for PhD chemists down 4.4 percent.

Chemical engineers continued to earn higher salaries than those of chemists. Inexperienced BS chemical engineers showed substantial increases between 1995 and 1996. The mean starting salary for BS chemical engineers was \$39,287 in 1996, up 4.6 percent from 1995. The salary in current dollars exceeded an inflation adjustment by 1.7 percent during that period. The mean starting salary for inexperienced MS chemical engineers was \$42,672, falling 1.5 percent from 1995, and the mean starting salary for PhD chemical engineers was \$55,188, down by 2.7 percent since 1995.

Table 1 shows average starting salaries paid to inexperienced chemistry and chemical engineering graduates for 1995 and 1996, and gives additional information concerning the variation among salaries within each group. Table 2 presents corresponding information for chemical engineers.

For inexperienced chemists, 1996 mean starting salaries changed in the following ways from 1995:

**Table 1** **INEXPERIENCED CHEMISTRY GRADUATES**

\$26,111 for the BS,	up	2.8%,	or in constant dollars	down	0.1%
\$33,854 for the MS,	down	2.5%,	or in constant dollars	down	5.4%
\$44,408 for the PhD,	down	1.5%,	or in constant dollars	down	4.4%

Among inexperienced chemical engineers, the 1996 mean starting salaries changed in the following ways from 1993:

**Table 2** **INEXPERIENCED CHEMICAL ENGINEERING GRADUATES**

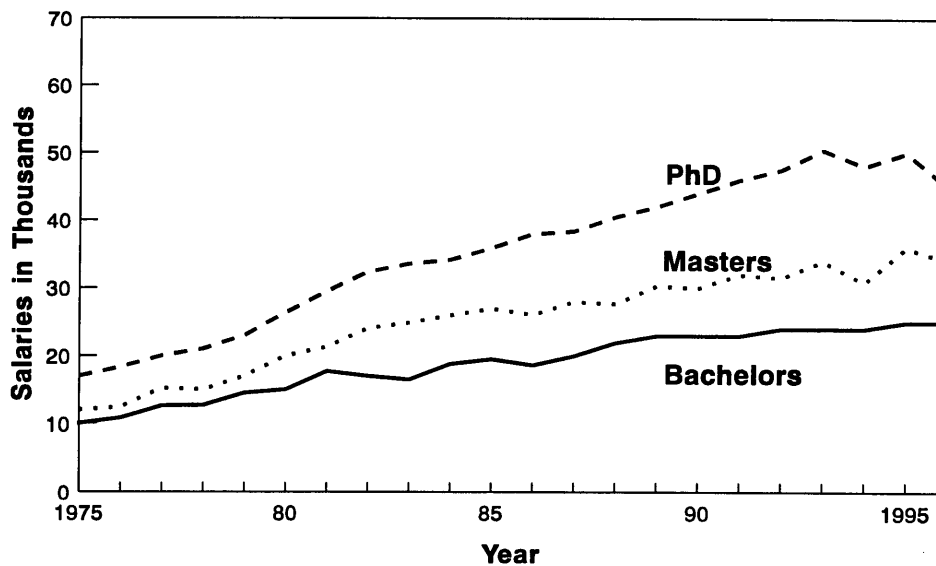
\$40,143 for the BS,	up	6.8%,	or in constant dollars	up	3.9%
\$42,854 for the MS,	down	1.1%,	or in constant dollars	down	4.0%
\$55,319 for the PhD,	down	2.5%,	or in constant dollars	down	5.4%

Mean salaries represent the average starting salary and are subject to distortion from very high salaries. They are, however, used in statistical analysis. For the rest of this summary, the median salary is used as the descriptive statistic. The median is the salary representing the midpoint of the salary range for new graduates, where half of the salaries are above the median salary and half of the salaries are below. The trends in median starting salaries from 1983 to the present for inexperienced chemists and chemical engineers are shown in Figures 1 and 2.

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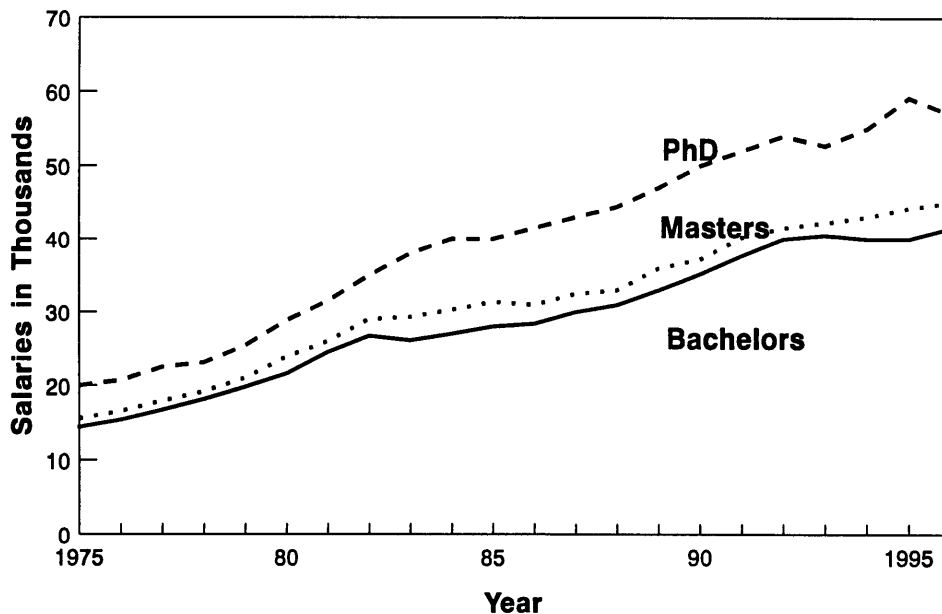
\* The Consumer Price Index rose 2.9 percent from August 1995 to August 1996. It is used as an approximation for inflation.

**Figure 1**  
**Median Starting Salaries of Inexperienced Chemists**  
**(in current dollars)**



Source: Starting Salary Surveys

**Figure 2**  
**Median Starting Salaries of Inexperienced Chemical Engineers**  
**(in current dollars)**



Source: Starting Salary Surveys  
Note: 1994 figures extrapolated



Table 3

**Median Starting Salaries, 1975-1996  
(by Degree and in 1000s and Current Dollars)**

Year	Chemists			Chemical Engineers		
	BS	MS	PHD	BS	MS	PHD
1975	10.0	12.0	17.0	14.4	15.6	20.0
76	10.8	12.4	18.3	15.4	16.6	20.7
77	12.6	15.2	20.0	16.8	18.0	22.5
78	12.7	15.0	21.0	18.2	19.2	23.1
79	14.5	17.0	23.0	19.8	21.0	25.4
1980	15.0	20.0	26.4	21.6	23.9	28.8
81	17.7	21.3	29.5	24.5	26.0	31.5
82	17.0	24.1	32.4	26.7	29.0	35.0
83	16.5	24.9	33.6	26.1	29.3	38.0
84	18.8	26.0	34.2	27.0	30.3	40.0
1985	19.5	27.0	35.9	28.0	31.4	40.0
86	18.6	26.1	38.0	28.4	31.0	41.5
87	20.0	28.0	38.4	30.0	32.5	43.0
88	21.9	27.7	40.5	31.0	33.0	44.4
89	23.0	30.3	42.0	33.0	36.0	47.0
1990	23.0	30.0	44.0	35.2	37.2	50.0
91	23.0	32.0	46.0	37.5	40.2	52.0
92	24.0	31.5	47.5	40.0	41.5	54.0
93	24.0	34.0	50.4	40.5	42.2	52.7
94	24.0	30.8	48.0	na	na	na
1995	25.0	36.0	50.0	40.0	44.2	59.2
96	25.0	34.1	45.0	41.5	45.0	57.0

Overall median starting salaries for new graduates, as presented in Table 3, are a summary measure. Thus, any trends must be seen in the light of generalization of figures where other factors may affect the median salaries for the population. Some of these factors are regional differences in pay structures, the type of employer, and the type of industry that hires a large proportion of new graduates.

The salary trends for the past twenty years in chemistry, as shown in Figure 1, and chemical engineering, as shown in Figure 2, began with similar patterns and wages in 1975 and have followed more divergent paths since then. Those chemists with bachelor's degrees show the least increase in starting salaries in that period. From 1989, the new BS chemists show very little increase in starting pay. Chemical engineers with bachelor's degrees showed much larger increases throughout the period until 1992, when they also showed no increases and small decreases in starting pay until 1996.

Chemists and chemical engineers with doctorates displayed similar patterns of increasing starting salaries, showing greater proportional increases than other degrees. Chemical engineers started higher in 1975 and increased at greater rates than chemists. These groups both show declines in median starting salaries in the 1990s. In 1996, median starting salaries for those with doctorates showed decreases for both chemists and chemical engineers.

As noted in Table 3, until the 1990s, median starting salaries for chemical engineers with master's degrees showed little variation from chemical engineers holding a bachelor's. Chemists with master's degrees increased more rapidly than the rate of increase for the bachelor's until this year.

**STARTING YEARLY SALARIES  
OF INEXPERIENCED FULL-TIME EMPLOYED**

**Table 4**

**CHEMISTRY GRADUATES  
by Degree: 1995 and 1996**

Salaries	DEGREE LEVEL					
	Bachelor's		Master's		Doctorate	
	1995	1996	1995	1996	1995	1996
90th Percentile	\$34,000	35,000	45,000	45,000	58,800	60,000
75th Percentile	29,000	30,000	40,000	40,000	55,000	55,000
50th Percentile	25,000	25,000	36,000	34,100	50,000	45,000
25th Percentile	21,000	21,000	28,000	25,500	35,000	33,000
10th Percentile	19,200	17,500	25,000	23,800	28,000	28,000
Mean	25,409	26,119	34,760	33,886	45,087	44,408
Count	348	632	47	72	73	93
Standard Deviation	5,805	8,076	7,736	8,414	12,662	12,778

**Table 5**

**CHEMICAL ENGINEERING GRADUATES  
by Degree: 1995 and 1996**

Salaries	DEGREE LEVEL					
	Bachelor's		Master's		Doctorate	
	1995	1996	1995	1996	1995	1996
90th Percentile	\$43,500	45,000	47,500	50,000	65,000	64,000
75th Percentile	42,000	43,500	46,000	46,500	62,000	60,000
50th Percentile	40,000	41,510	44,200	45,000	59,230	57,000
25th Percentile	35,000	37,000	41,000	39,000	52,500	50,000
10th Percentile	27,000	30,000	36,000	30,000	45,500	45,000
Mean	37,571	39,287	43,315	42,672	45,965	55,188
Count	342	462	22	29	20	33
Standard Deviation	6,397	5,974	5,744	6,922	7,246	7,843

As previously stated, salaries vary by the type and characteristics of the employer as well as the educational background of the graduates. For instance, salaries are generally highest in private industry and lowest in educational institutions. The median salary for new chemistry PhDs was \$55,000 for those employed in industry and just over \$31,000 for those employed in colleges or universities (see Table A-6). The vast majority of chemical engineers are employed in private industry. In 1996, the new chemical engineering PhD received a starting salary of \$57,800 in industry (see Table A-15).

Larger employers generally pay more than smaller ones. Bachelor's chemists employed in larger firms (25,000 or more employees) made about \$8,000 more than those employed in small firms (less than 500 employees) (see Table A-8). New bachelor's chemists are more likely to be employed in small firms than large firms. Less than 20 percent of new bachelor's chemists are employed in firms with 25,000 or more employees while more than 48 percent are employed in firms with less than 500 employees. The proportion of chemistry graduates who found employment in smaller firms increased this year (last year 41 percent of new bachelor's chemists found employment in firms with less than 500 employees).

Chemical engineers are generally newly employed in firms of all sizes. As with chemists the pay differs according to the size of the company. This year, over one-third of new BS chemical engineers found employment with large firms (25,000 or more employees). Their salaries differed by about \$7,500 between the larger firms and smaller firms (500 or less employees), as shown in Table A-16.

Salaries for new BS chemistry graduates were highest in the Middle Atlantic region (\$29,000) and lowest in the East South Central (\$19,713). The two highest regions, the Middle Atlantic and East North Central regions, employed over one-third of the of inexperienced BS chemists. Salaries for new BS chemical engineers were highest in the West South Central region (\$43,000) and lowest in the New England region (\$37,250). Proportionally, chemical engineers were employed nation-wide, with a slight edge to the eastern regions. (See page 13 for a list of the states included in each geographic region.)

Generally speaking, bachelor's chemists receive higher starting salaries if they have completed an ACS-approved program. This year, the difference in pay between those who had completed the program was over \$1900 than the salary for those who did not. The median starting salary of inexperienced bachelor's chemists who did not participate in a ACS-approved program was \$25,000; for those who did, it was \$26,916. Graduates who participated in internships received significantly higher starting salaries. Most graduates who participated in co-op programs also showed higher salaries when coupled with participation in an ACS-approved program. For those BS graduates who also studied abroad as part of their program, the starting salaries were higher. The median starting salary of a bachelor's chemist with a 'C' through 'B' average in his or her major was \$25,000; with an 'A' average, it was \$27,850. Thus, top grades made a difference in median starting salaries of chemists with bachelor's degrees, but the correlation between grades and starting salaries is much stronger amongst those with a bachelor's in chemical engineering.

For bachelor chemical engineers, salaries correlate closely with the grades they receive. The higher a BS chemical engineer's grade point, both in the major and overall, the higher is the starting salary. For example, a chemical engineer with a 'C' average in his or her major started at a \$36,000 starting salary; with a 'B' average, \$40,000; and with an 'A' average, it was \$43,000.

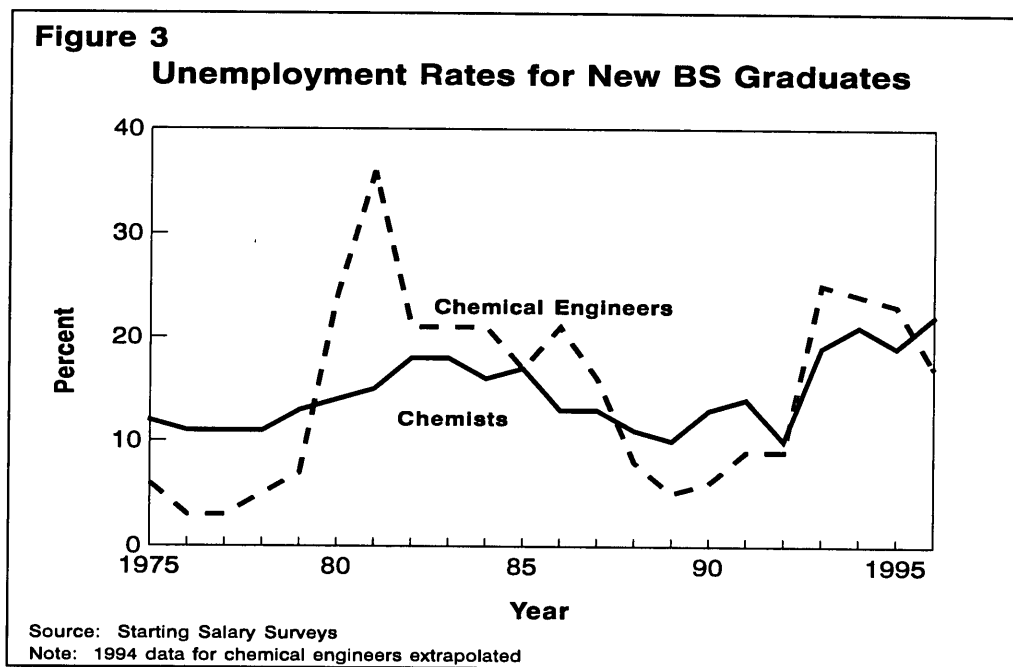
Bachelor's and master's graduates in chemistry and who are on graduate assistantships or fellowships typically received about \$15,000, up \$1000 over last year. Stipends for postdoctoral fellowships averaged about \$25,000 for chemistry postdocs, also increasing by \$1000 over last year. Chemical engineering graduates generally received \$16,000 at the bachelor's and master's level and \$28,500 (increasing by \$1500 over last year) at the postdoc level.

## POST-GRADUATION EMPLOYMENT STATUS

Unemployment rates for this report are based on full-time and permanent employment. It reflects the fall status of the graduates. For bachelor's chemistry graduates, the rate increased to record levels this year, while the rate for bachelor's chemical engineers fell sharply. The recent history for unemployment rates of bachelor's chemistry and chemical engineering graduates is†:

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Chemistry	13%	11%	10%	13%	14%	10%	19%	21%	19%	22%
Chemical Engineering	16%	8%	5%	6%	9%	9%	25%	na%	23%	17%

As Figure 3 shows, unemployment for chemistry and chemical engineering graduates this year continues to be relatively high. Chemistry graduates appear to find the chemistry job market more attractive this year as a much lower proportion are opting to stay out of the job market for a few more years by going to graduate school. The proportion of new bachelor's chemistry graduates in the labor force‡ who found employment in chemistry or chemical engineering grew more this year to 57 percent this year, up from last year's 53 percent and 50 percent in 1994.



†Note that the calculation for the unemployment rate excludes those persons who are not seeking employment. In Table B-1a, 635 bachelor's chemists indicated they were not seeking employment. They are subtracted from the total before calculating the unemployment rate ( $2777 - 635 = 2142$ ). Since the number of bachelor's chemists seeking employment is 462, the fall unemployment rate is calculated as  $(462 \div 2142) \times 100 = 22\%$ .

‡Here the "labor force" is defined as those persons who are either employed full-time or are seeking work. New graduates who are not seeking employment or who are on fellowships are excluded from this calculation. In Table B-1a, 635 bachelor's chemists indicated they were not seeking employment and 696 bachelor's chemists indicated they were on fellowships. Subtracted from a total of 2777, the labor force as defined is 1331 people. Since 760 bachelor's chemists reported they are working full-time in chemistry, the calculation is as follows:  $(760 \div 1331) \times 100 = 57\%$ .

## **EMPLOYMENT OF BACHELOR'S CHEMISTS AS TECHNICIANS**

About 36 percent of the bachelor's chemistry graduates who were employed full-time in industry 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 in industry as technicians was \$24,900 whereas the median salary of those employed as scientists was \$28,500. For the chemical engineering graduate with a bachelor's degree, this year the difference was insignificant, between those employed as technicians and those employed as engineers.

## **NUMBER OF OFFERS**

This year the average number of firm offers of employment fell from last year's overall, but the proportion who received only one offer rose for the second year. In 1996, for inexperienced chemistry graduates who are employed, 52 percent of chemistry graduates had one firm offer. Inexperienced chemical engineering graduates had slightly more offers of employment this year, with 47 percent receiving one offer. This year also, just under 7 percent of the chemical engineers had five or more offers of employment, higher last year's percentage (see Tables E-1 and E-3).

New master's and PhD chemistry graduates had about the same average number of offers of employment, on average, as bachelor's graduates, but with slightly different distributions. Experience made a large difference in average number of offers of employment for chemical engineers. Both inexperienced and experienced BS chemistry graduates had, on average, two offers of employment. New PhD chemists whose field was biochemistry or polymer chemistry had more offers this year, on average, than those in other fields.

## **POSTDOCTORAL FELLOWSHIPS**

The proportion of new PhDs who accept postdoctoral fellowships can sometimes be used as a rough indicator of demand. Because some of the new doctoral graduates who accept postdoctoral fellowships would have preferred full-time employment had it been available, an increase in the proportion accepting postdoctoral fellowships can indicate insufficient full-time employment. This year, the proportion accepting postdoctoral fellowships increased precipitously while the unemployment rate decreased by the same amount. More than 44 percent of new chemistry doctorates accepted postdoctoral fellowships this year (Table 6). This increase may indicate, among other things, a tough market for PhDs and a greater demand by some industries for postdoctoral experience.

## **PLANS FOR ADVANCED STUDY**

Traditionally, between 50 percent and 55 percent of bachelor's chemistry graduates plan full-time studies in the coming year (in any field) and another roughly 10% plan part-time studies. In 1995, the percent of bachelor's chemistry graduates declined to 48 percent who planned to study full-time in the fall of 1995. This year, the decline continued, with only 44 percent who planned to study full-time in the fall of 1996. Most bachelor's in chemical engineering opt for employment. Hence, only 14 percent of them are planning to study full-time in the fall of 1996, down from 17 percent in 1995. A summary of the plans of the 1996 graduates appears in Tables 7 and 8.

Table 6

**POST-GRADUATION STATUS OF CHEMISTRY AND  
CHEMICAL ENGINEERING GRADUATES: FALL 1996**

Major and Employment Status	Bachelor's	Master's	Doctorate
<b>CHEMISTRY</b>			
Full-time employed:			
In chemistry or chemical engineering	27.4%	44.0%	43.4%
Outside chemistry or chemical engineering	8.1%	3.9%	2.2%
Grad. asst./postdoctoral or other fellowship	25.1%	32.2%	44.3%
Unemployed and seeking full-time employment	16.6%	15.5%	8.9%
Unemployed and not seeking full-time employment	22.9%	4.4%	1.1%
Total*	100.0	100.0	100.0
Number of responses	2777	407	447
<b>CHEMICAL ENGINEERING</b>			
Full-time employed:			
In chemistry or chemical engineering	56.2%	45.2%	67.9%
Outside chemistry or chemical engineering	13.6%	11.5%	11.1%
Grad. asst./postdoctoral or other fellowship	9.6%	29.8%	13.6%
Unemployed and seeking full-time employment	16.3%	10.6%	6.2%
Unemployed and not seeking full-time employment	4.3%	2.9%	-1.2%
Total*	100.0	100.0	100.0
Number of responses	977	104	81

\*Any difference is due to rounding

Table 7

**PLANS FOR FURTHER STUDY OF BACHELOR'S  
CHEMISTRY & CHEMICAL ENGINEERING GRADUATES: FALL 1996**

Plans	Chemistry	Chemical Engineering
Further studies	51.2%	21.3%
Full-time	(44.0%)	(14.3%)
Part-time	( 7.2%)	( 7.0%)
No plans for further studies	48.8%	78.7%
Total	100.0	100.0
Number of responses	2856	1000

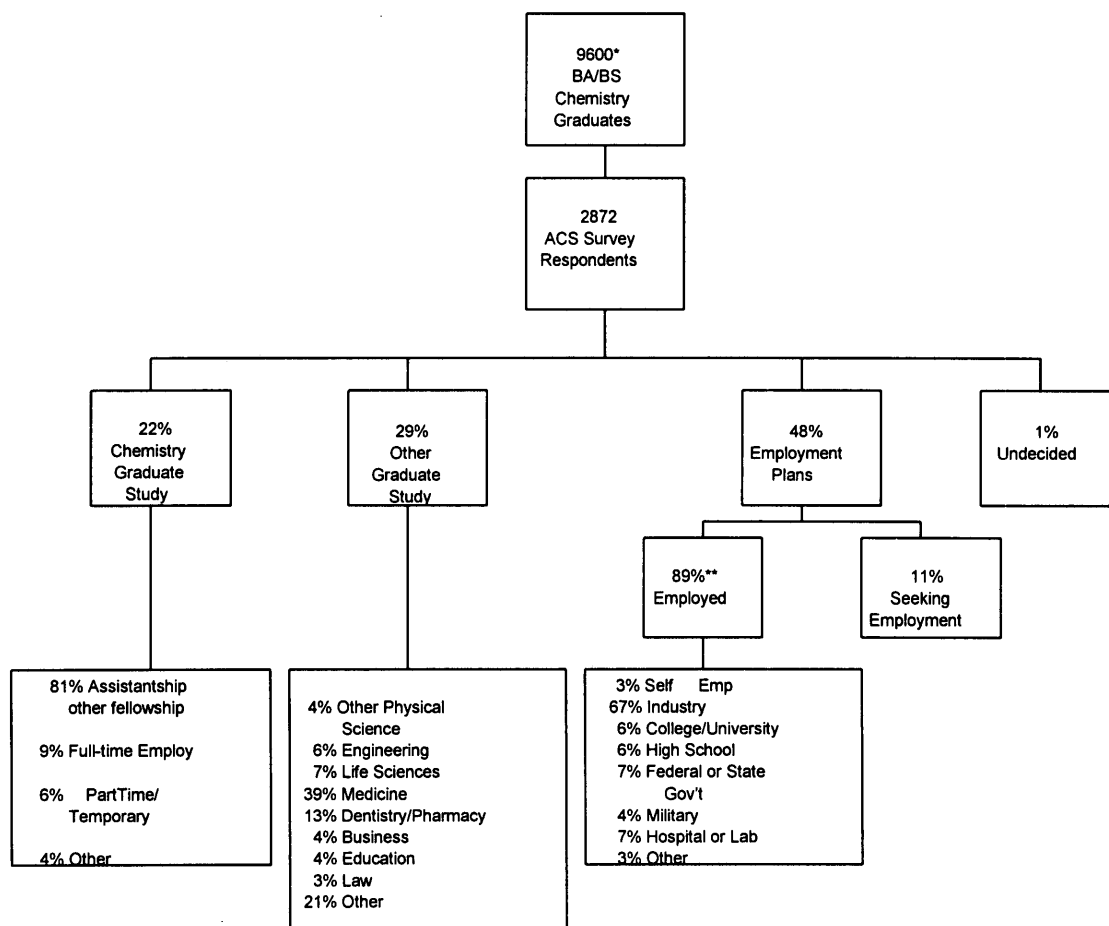
Table 8

**FIELDS OF STUDY OF BACHELOR'S CHEMISTRY AND  
CHEMICAL ENGINEERING GRADUATES WHO PLAN FURTHER STUDIES  
FALL 1996**

Plans	Chemistry	Chemical Engineering
<b>FULL-TIME STUDY</b>		
Chemistry or biochemistry	45.0%	2.1%
Chemical or biochemical engineering	1.8%	58.0%
Other engineering	1.4%	5.6%
Physical science	1.2%	0.7%
Life science	3.5%	1.4%
Medicine, dentistry, or pharmacy	32.3%	10.5%
Business or management	0.8%	9.1%
All others	13.9%	13.6%
Total	100.0	100.0
Number of responses	1194	143
<b>PART-TIME STUDY</b>		
Chemistry or biochemistry	35.3%	1.4%
Chemical or biochemical engineering	3.4%	42.9%
Other engineering	2.0%	11.4%
Physical science	6.9%	2.9%
Life science	7.4%	0.0%
Medicine, dentistry, or pharmacy	8.8%	2.9%
Business or management	9.8%	31.4%
Education	6.4%	0.0%
All others	20.1%	7.1%
Total	100.0	100.0
Number of responses	204	70

Traditionally, roughly one-third of new bachelor's chemistry graduates planned to pursue chemistry graduate study, one-third planned graduate study in another field, and one-third had plans for immediate employment. Last year that division of plans changed, with fewer planning graduate studies. Those planning for advanced study in the fall of 1996 fell even farther below last year's figures (see Figure 4). Only 22 percent of the 1996 bachelor's chemistry graduates planned to pursue graduate studies in chemistry and only 29 percent planned to pursue graduate studies in another field. The proportion of bachelor's in chemistry who pursued employment over advanced study increased again this year, about 16 percent over the traditional pattern and 6 percent more than last year. Of those bachelor's chemistry graduates who planned further studies in another discipline in 1996, the choice of field of study has not changed appreciably in the last decade, with studies in the medicine-related fields topping the list. Of those chemistry graduates who chose immediate employment, the majority chose industrial employment.

**Figure 4**  
**Post Graduation Plans of 1996 Bachelor's chemistry Graduates**



\*Estimate

\*\* May be employed full-time, part-time or temporary



## CHEMISTRY GRADUATES WHO HAVE COMPLETED ACS-APPROVED PROGRAMS

Graduates completing undergraduate chemistry programs approved by the ACS Committee on Professional Training have historically received higher starting salaries than graduates completing non-approved programs. This year, graduates who completed the ACS-approved program earned, on average, almost \$27,000 per year in industry, compared to about \$25,000 for those who did not complete the approved program (Table A-10).

Graduates completing approved programs are more likely than graduates not completing approved programs to plan further studies and to plan further studies in chemistry. Fifty percent of graduates of approved programs planned full-time studies compared with 32 percent of graduates of non-approved programs (Table B-4b). Of the bachelor's chemistry graduates who plan full-time studies, 56 percent of those completing approved programs plan to study chemistry, compared with only 19 percent of those from non-approved programs. Conversely, 35 percent of those from non-approved programs plan to study medicine compared with only about 15 percent of those from approved programs (Table C-5).

Graduates of approved programs are also less likely than those from non-approved programs to be unemployed and among those employed, are more likely to be employed in chemistry or chemical engineering. The unemployment rate for bachelor's graduates of approved programs was 18 percent this year, compared to 25 percent for graduates of non-approved programs. Among the full-time employed bachelor's chemistry graduates, 83 percent of graduates of ACS approved programs, but only 73 percent of graduates of non-approved programs were employed in chemistry or chemical engineering. (Table B-4a).<sup>§</sup>

## RACE/ETHNIC COMPOSITION OF NEW GRADUATES

Minorities, and particularly Asians, are an increasing proportion of new graduates in chemistry and chemical engineering. The proportion of new bachelor's chemistry graduates who are African-American or Hispanic has increased fairly slowly since 1973, when ACS first collected such information. In 1973, African-Americans were 2.3 percent and Hispanics were 0.7 percent of bachelor's chemistry graduates. This year, African-Americans were 3.9 percent and Hispanics fell 1.4 percent, to 2.4 percent of bachelor's chemistry graduates. Native Americans are a very small proportion (less than 1 percent) of new graduates in chemistry at all degree levels.

The proportion of new chemistry graduates who are Asian has more than trebled since 1973. In that year, Asians were 3 percent of bachelor's, 9 percent of master's, and 9 percent of PhD graduates. This year, Asians are 11 percent of bachelor's, 29 percent of master's, and 33 percent of PhD graduates. Eighty percent of bachelor's chemistry graduates of Asian descent are U.S. citizens (either native or naturalized). Only 8 percent are here on temporary visas. The reverse is true for PhDs. Only 7 percent of doctoral chemistry graduates of Asian descent are U.S. citizens and 46 percent are here on temporary visas.

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<sup>§</sup>Note that the calculation for the unemployment rate excludes those persons who are not seeking employment. In Table B-4a, the number of full-time employed bachelor's chemistry graduates who completed ACS-approved programs is 399 (333+66) and the number of full-time employed bachelor's chemistry graduates who did not complete ACS-approved programs is 592 (430+162). Therefore, the proportions of graduates employed in chemistry or chemical engineering are  $(333 \div 399) \times 100 = 83\%$  and  $(430 \div 592) \times 100 = 73\%$ .

## CITIZENSHIP STATUS OF NEW GRADUATES

In chemistry and chemical engineering, the proportion of graduates who are U.S. citizens has decreased and the proportion of graduates with temporary visas has increased over the last decade, especially among master's and doctoral graduates. Among bachelor's chemistry graduates, 96 percent of the graduates are U.S. citizens. (see Table F-2). Among chemical engineering bachelor's recipients, the proportion who are U.S. citizens rose this year from below 90 percent in 1995 to 96 percent in 1996 (Table F-5). Among master's chemistry graduates, the proportion of graduates who have temporary visas increased from 5 percent of the chemistry graduates in 1983 to 19 percent of the chemistry graduates in 1995 and 27 percent in 1996. Similarly, among graduates with doctoral degrees, the proportion of graduates who have temporary visas has increased from 8 percent of the chemistry graduates in 1983 to 21 percent in 1996.

New bachelor's graduates with temporary visas are much more likely than those with U.S. citizenship to have plans for further studies. More than three-fourths of the bachelor's graduates on temporary visas, but only half of those with U.S. citizenship plan full-time studies in the fall of 1996. It should be noted, however, that the majority of students with temporary visas, and who receive degrees in chemistry or chemical engineering, earn graduate degrees.

Among new PhDs, those with temporary visas are more likely to have postdoctoral appointments and are more likely to be unemployed than those with U.S. citizenship. Over 52 percent of new PhDs with temporary visas have postdoctoral fellows opposed to about 41 percent of those with U. S. citizenship. The fall unemployment rates for those PhD graduates with temporary visas is about twice that of citizens (see Tables B-2a and B-2b).

For new chemical engineering graduates, the proportion who are U.S. citizens exceeds 95 percent for those with bachelor's degrees. The proportion of bachelor's recipients on temporary visas is less than 2 percent. For chemical engineers with master's and the doctorate, the proportion with temporary visas is 28 percent and 37 percent respectively. The dynamics of citizenship are similar between the two fields, with the proportions of graduates with temporary visas increasing significantly with graduate degrees.

## SCOPE AND METHOD

### OBJECTIVES

The 1996 Starting Salary Survey is the 46th in the series of annual surveys conducted by the American Chemical Society. Summaries of the results of these surveys appear annually in the "Employment Outlook" issue of *Chemical & Engineering News*. This year, preliminary results were published on October 28.

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 1995-96 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 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 who graduated between July, 1995 and June, 1996. During August of 1996, questionnaires were mailed to those graduates whose names had been provided and who had U.S. addresses.

### EXTENT OF COVERAGE

Survey questionnaires were mailed by first class mail August to 10,351 graduates. Approximately 1 week after the initial mailing, a postcard reminder was sent, then a second questionnaire and cover letter were sent to non-respondents a month later. By the cutoff date of November 15, ACS had received 5,020 usable responses.

### 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. Salary tables are based on full-time employment. 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 by sex and another by 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, 1990, 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, 1320 respondents classified as chemists indicated their highest degree as the bachelor's degree and their gender as female. The percent of this group who are employed full-time in chemistry is 28.0 percent ( $p=28.0$ ). A "95 percent confidence interval" for this percent may be approximated by taking  $n$  and  $p$  to be about 1000 and 20 percent. The above table shows an approximate sampling error of 2.5 percent. Hence, the 95 percent confidence interval is 25.6 percent to 30.5 percent. 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.

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Table A-1

**SALARIES of CHEMISTS employed FULL-TIME  
by DEGREE and EXPERIENCE  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Work Experience			
Less than 12 months			
Median	25,000	34,100	45,000
Mean	26,119	33,886	44,408
Std Dev	8,076	8,414	12,778
Count	632	72	93
12-36 months			
Median	25,000	35,000	50,000
Mean	26,589	34,594	48,855
Std Dev	6,180	8,773	11,147
Count	227	41	43
More than 36 months			
Median	32,000	39,000	44,500
Mean	33,262	39,672	44,450
Std Dev	9,872	10,208	12,461
Count	93	79	63
TOTAL			
Median	25,836	36,000	45,000
Mean	26,929	36,418	45,382
Std Dev	8,134	9,618	12,417
Count	952	192	199

Table A-2

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME  
by DEGREE and EXPERIENCE  
1996 ACS Starting Salary Survey

	Highest Degree		
	BS	MS	PHD
Work Experience			
Less than 12 months			
Median	41,510	45,000	57,000
Mean	39,287	42,672	55,188
Std Dev	5,974	6,922	7,843
Count	462	29	33
12-36 months			
Median	42,000	45,000	59,000
Mean	40,974	44,870	57,250
Std Dev	4,911	5,936	13,088
Count	183	20	12
More than 36 months			
Median	43,000	44,000	62,000
Mean	40,509	50,494	56,503
Std Dev	7,849	15,286	11,702
Count	23	9	17
TOTAL			
Median	42,000	45,000	57,300
Mean	39,791	44,644	55,948
Std Dev	5,819	8,688	9,990
Count	668	58	62

Table A-3

**SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
in PRIVATE INDUSTRY by SEX and DEGREE  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Sex			
Male			
Median	26,510	36,750	54,750
Mean	27,912	37,106	52,099
Std Dev	10,280	7,269	8,968
Count	222	20	30
Female			
Median	27,000	36,000	55,000
Mean	27,272	36,390	53,347
Std Dev	6,622	7,898	7,650
Count	204	30	22
TOTAL			
Median	27,000	36,500	55,000
Mean	27,606	36,676	52,627
Std Dev	8,718	7,585	8,380
Count	426	50	52

Table A-4

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
in PRIVATE INDUSTRY by SEX and DEGREE  
1996 ACS Starting Salary Survey

	Highest Degree		
	BS	MS	PHD
Sex			
Male			
Median	41,400	45,500	58,900
Mean	39,626	43,265	58,390
Std Dev	5,169	6,029	6,327
Count	259	17	20
Female			
Median	42,000	45,000	57,000
Mean	40,794	43,700	54,733
Std Dev	4,650	7,631	4,534
Count	166	10	6
TOTAL			
Median	42,000	45,000	57,800
Mean	40,082	43,426	57,546
Std Dev	4,999	6,525	6,083
Count	425	27	26

Table A-5

**SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
by SEX and DEGREE  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Sex			
Male			
Median	25,000	35,000	45,000
Mean	26,357	34,072	44,721
Std Dev	9,315	8,725	12,122
Count	325	30	50
Female			
Median	25,040	33,000	46,920
Mean	25,846	33,699	43,784
Std Dev	6,497	8,384	13,694
Count	305	41	42
TOTAL			
Median	25,000	34,000	45,000
Mean	26,110	33,856	44,293
Std Dev	8,072	8,470	12,800
Count	630	71	92

Table A-6

**SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
by DEGREE and EMPLOYER  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Employer			
Self			
Median	24.000	25.000	60.000
Mean	24.039	25.000	60.000
Std Dev	6.093	---	---
Count	19	1	1
Industry			
Median	27.000	36.000	55.000
Mean	27.587	36.663	52.672
Std Dev	8.697	7.509	8.305
Count	431	51	53
College or univ			
Median	20.000	22.900	31.187
Mean	21.086	22.633	31.241
Std Dev	4.786	5.51	5.943
Count	19	3	24
Medical sch1			
Median	21.000	---	---
Mean	21.194	---	---
Std Dev	1.952	---	---
Count	9	0	0
Elem/Sec sch1			
Median	23.000	25.000	32.500
Mean	23.349	29.200	32.000
Std Dev	4.216	7.480	2.944
Count	51	10	4
Federal govt			
Median	25.030	37.049	42.500
Mean	26.019	37.049	42.192
Std Dev	5.511	---	3.280
Count	14	1	4
Military			
Median	25.000	---	23.000
Mean	26.182	---	23.000
Std Dev	5.618	---	---
Count	11	0	1
State or local govt			
Median	24.459	22.032	25.300
Mean	23.606	21.344	25.300
Std Dev	6.196	3.059	---
Count	24	3	1
Hospital or lab			
Median	20.000	26.900	30.250
Mean	20.622	26.900	30.250
Std Dev	4.432	4.384	13.789
Count	41	2	2
Other			
Median	22.250	30.203	43.000
Mean	23.833	30.203	41.000
Std Dev	6.754	---	15.100
Count	16	1	3
TOTAL			
Median	25.000	34.100	45.000
Mean	26.102	33.886	44.408
Std Dev	8.057	8.414	12.778
Count	635	72	93



Table A-7

**SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
by DEGREE and TYPE OF INDUSTRY  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Type of Industry			
Nonmanufacturing			
Median	23.000	32.000	40.000
Mean	24.459	31.192	42.727
Std Dev	10.625	5.603	11.481
Count	135	13	11
Aerospace			
Median	33.000	37.000	46.000
Mean	32.100	37.000	46.000
Std Dev	7.526	3.960	---
Count	7	2	1
Basic chemicals			
Median	22.000	37.000	55.000
Mean	21.953	37.000	56.420
Std Dev	6.114	18.385	2.254
Count	10	2	5
Specialty chemicals			
Median	28.000	39.500	58.000
Mean	27.799	39.500	56.600
Std Dev	5.392	---	5.719
Count	56	1	8
Agricultural chemicals			
Median	22.000	27.500	55.000
Mean	23.875	27.500	55.000
Std Dev	8.645	---	---
Count	4	1	1
Electronics			
Median	30.160	43.100	60.500
Mean	33.790	40.980	60.500
Std Dev	15.045	5.110	---
Count	21	5	1
Petroleum			
Median	26.760	---	42.500
Mean	29.052	---	43.875
Std Dev	4.917	---	7.598
Count	10	0	4
Pharmaceuticals			
Median	28.000	41.750	58.500
Mean	28.740	40.366	57.530
Std Dev	6.004	6.859	6.004
Count	130	20	9
Plastics			
Median	26.290	35.000	52.800
Mean	28.548	35.000	52.800
Std Dev	8.292	---	10.182
Count	12	1	2
Other manuf			
Median	27.000	30.500	55.000
Mean	27.326	31.387	53.089
Std Dev	6.710	6.683	6.070
Count	86	8	15
TOTAL			
Median	26.000	36.000	55.000
Mean	27.234	36.204	51.958
Std Dev	8.556	7.727	9.001
Count	471	53	57

Table A-8

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
in INDUSTRY by DEGREE and EMPLOYER SIZE  
1996 ACS Starting Salary Survey

	Highest Degree		
	BS	MS	PHD
Employer Size			
Less than 500			
Median	25,000	33,500	45,500
Mean	25,002	32,750	44,953
Std Dev	8,944	6,803	8,993
Count	205	20	14
500 to 2,499			
Median	27,000	35,000	57,000
Mean	27,721	37,667	53,240
Std Dev	9,411	7,427	7,329
Count	83	9	5
2,500 to 9,999			
Median	30,000	41,000	55,000
Mean	31,371	38,686	52,000
Std Dev	6,530	9,291	7,995
Count	39	7	7
10,000 to 24,999			
Median	28,081	40,000	57,000
Mean	28,921	40,373	55,617
Std Dev	6,361	11,445	4,178
Count	22	3	12
25,000 or more			
Median	33,000	41,250	58,170
Mean	31,794	40,325	57,645
Std Dev	6,213	3,963	5,551
Count	77	12	15
TOTAL			
Median	27,000	36,000	55,000
Mean	27,545	36,663	52,672
Std Dev	8,720	7,509	8,305
Count	426	51	53

Table A-9

**SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
by DEGREE and WORK FUNCTION  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Work Function			
Teaching			
Median	23,000	25,000	32,000
Mean	23,250	29,291	31,932
Std Dev	4,761	7,103	3,487
Count	56	11	21
Management			
Median	25,000	35,000	45,000
Mean	26,807	35,667	45,000
Std Dev	14,927	14,012	---
Count	50	3	1
Basic research			
Median	23,750	41,000	28,000
Mean	25,222	38,707	35,746
Std Dev	6,243	8,287	15,818
Count	76	7	13
Applied research			
Median	27,000	38,150	55,000
Mean	27,937	37,229	52,997
Std Dev	6,094	7,662	7,638
Count	142	28	46
Production			
Median	25,000	30,000	45,000
Mean	25,757	31,080	43,260
Std Dev	6,683	5,877	16,248
Count	173	15	5
Professional svcs			
Median	26,000	25,000	40,000
Mean	27,358	29,339	43,200
Std Dev	7,627	10,458	9,731
Count	57	6	5
Other			
Median	25,000	27,500	39,750
Mean	25,127	27,500	39,750
Std Dev	10,420	7,778	4,596
Count	79	2	2
TOTAL			
Median	25,000	34,100	45,000
Mean	26,108	33,886	44,408
Std Dev	8,048	8,414	12,778
Count	633	72	93

Table A-10

**SALARIES of INEXPERIENCED B.S. CHEMISTS employed FULL-TIME  
by EMPLOYER and CERTIFICATION  
1996 ACS Starting Salary Survey**

	Completed Approved Program?		TOTAL
	Yes	No	
Employer			
Self			
Median	30.000	23.050	24.000
Mean	26.663	22.508	24.039
Std Dev	6.151	5.760	6.093
Count	7	12	19
Industry			
Median	27.700	26.000	27.000
Mean	28.331	26.961	27.587
Std Dev	6.603	10.102	8.697
Count	197	234	431
College or univ			
Median	23.000	20.000	20.000
Mean	24.187	19.979	21.086
Std Dev	5.824	4.031	4.786
Count	5	14	19
Medical sch1			
Median	21.000	20.950	21.000
Mean	21.950	20.817	21.194
Std Dev	2.561	1.721	1.952
Count	3	6	9
Elem/Sec sch1			
Median	22.215	23.000	23.000
Mean	23.153	23.375	23.349
Std Dev	3.434	4.342	4.216
Count	6	45	51
Federal govt			
Median	25.030	26.750	25.030
Mean	26.406	25.050	26.019
Std Dev	5.258	6.849	5.511
Count	10	4	14
Military			
Median	24.000	26.000	25.000
Mean	26.400	26.000	26.182
Std Dev	7.765	3.847	5.618
Count	5	6	11
State or local govt			
Median	26.416	22.978	24.459
Mean	26.472	22.650	23.606
Std Dev	6.471	5.980	6.196
Count	6	18	24
Hospital or lab			
Median	19.500	20.000	20.000
Mean	20.386	20.698	20.622
Std Dev	3.008	4.843	4.432
Count	10	31	41
Other			
Median	36.000	21.000	22.250
Mean	36.000	23.021	23.833
Std Dev	---	6.131	6.754
Count	1	15	16
TOTAL			
Median	26.916	25.000	25.000
Mean	27.553	25.159	26.102
Std Dev	6.575	8.769	8.057
Count	250	385	635

Table A-11

SALARIES of INEXPERIENCED MS and PHD CHEMISTS employed FULL-TIME  
by DEGREE and DEGREE SPECIALTY  
1996 ACS Starting Salary Survey

	Highest Degree	
	MS	PHD
Degree Field		
Biochemistry		
Median	27,500	27,500
Mean	30,755	28,875
Std Dev	9,129	8,370
Count	11	4
General chem		
Median	38,250	37,885
Mean	38,780	37,885
Std Dev	9,506	1,252
Count	10	2
Analytical chem		
Median	30,000	52,000
Mean	30,475	50,098
Std Dev	6,398	11,358
Count	15	26
Inorganic chem		
Median	26,300	45,000
Mean	28,806	42,741
Std Dev	9,008	12,968
Count	6	17
Organic chem		
Median	37,900	45,000
Mean	37,325	43,429
Std Dev	6,732	11,888
Count	20	17
Physical chem		
Median	35,000	33,000
Mean	30,457	39,515
Std Dev	7,580	12,837
Count	7	17
Polymer chem		
Median	45,000	57,000
Mean	45,000	57,000
Std Dev	---	2,582
Count	1	4
Other chem		
Median	39,525	45,500
Mean	39,525	45,250
Std Dev	3,501	13,971
Count	2	6
TOTAL		
Median	34,100	45,000
Mean	33,886	44,408
Std Dev	8,414	12,778
Count	72	93

Table A-12

**SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME  
by DEGREE and GEOGRAPHIC REGION  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
REGION			
Pacific			
Median	25.936	39.500	42.500
Mean	27.699	40.000	41.917
Std Dev	10.981	4.967	12.665
Count	60	4	12
Mountain			
Median	23.000	32.100	30.000
Mean	25.986	34.633	31.700
Std Dev	12.253	10.516	9.080
Count	39	6	5
West North Central			
Median	22.000	28.560	50.000
Mean	22.446	30.020	46.383
Std Dev	6.333	10.971	14.633
Count	58	6	6
West South Central			
Median	25.000	26.300	36.500
Mean	24.246	28.439	40.918
Std Dev	5.576	6.158	10.105
Count	57	6	11
East North Central			
Median	26.250	37.500	45.300
Mean	26.995	34.209	43.821
Std Dev	6.201	7.806	11.602
Count	126	11	16
East South Central			
Median	19.713	27.100	47.500
Mean	20.330	27.351	46.313
Std Dev	5.617	2.324	14.273
Count	22	4	4
Middle Atlantic			
Median	29.100	38.300	48.000
Mean	28.571	38.446	45.344
Std Dev	7.408	7.154	14.765
Count	95	13	13
South Atlantic			
Median	25.000	30.000	52.000
Mean	26.163	31.625	47.659
Std Dev	8.821	8.683	12.379
Count	105	14	17
New England			
Median	24.000	35.500	55.000
Mean	25.558	36.625	53.857
Std Dev	6.473	7.501	10.395
Count	41	8	7
TOTAL			
Median	25.000	34.100	45.000
Mean	26.065	33.886	44.538
Std Dev	8.130	8.414	12.652
Count	603	72	91

Table A-13

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
by SEX and DEGREE  
1996 ACS Starting Salary Survey

	Highest Degree		
	BS	MS	PHD
Sex			
Male			
Median	41,000	45,000	57,000
Mean	38,667	42,132	56,272
Std Dev	6,565	6,672	7,746
Count	283	19	25
Female			
Median	42,000	45,000	57,000
Mean	39,859	43,700	54,057
Std Dev	5,939	7,631	4,509
Count	180	10	7
TOTAL			
Median	41,500	45,000	57,000
Mean	39,130	42,672	55,788
Std Dev	6,349	6,922	7,159
Count	463	29	32

Table A-14

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
by DEGREE and EMPLOYER  
1996 ACS Starting Salary Survey

	Highest Degree		
	BS	MS	PHD
Employer			
Self			
Median	35.000	30.000	---
Mean	32.750	30.000	---
Std Dev	11.718	---	---
Count	5	1	0
Industry			
Median	42.000	45.000	57.800
Mean	40.021	43.426	57.546
Std Dev	5.255	6.525	6.083
Count	428	27	26
College or univ			
Median	26.500	---	45.000
Mean	26.500	---	43.400
Std Dev	9.192	---	7.057
Count	2	0	5
Medical sch1			
Median	22.000	---	---
Mean	22.000	---	---
Std Dev	---	---	---
Count	1	0	0
Elem/Sec sch1			
Median	30.000	---	---
Mean	30.000	---	---
Std Dev	---	---	---
Count	1	0	0
Federal govt			
Median	37.500	---	54.000
Mean	37.500	---	54.000
Std Dev	9.192	---	1.414
Count	2	0	2
Military			
Median	26.500	---	---
Mean	26.800	---	---
Std Dev	2.044	---	---
Count	10	0	0
State or local govt			
Median	27.154	---	---
Mean	27.385	---	---
Std Dev	5.38	---	---
Count	3	0	0
Hospital or lab			
Median	25.000	35.000	---
Mean	24.000	35.000	---
Std Dev	3.606	---	---
Count	3	1	0
Other			
Median	35.000	---	---
Mean	31.056	---	---
Std Dev	13.259	---	---
Count	10	0	0
TOTAL			
Median	41.500	45.000	57.000
Mean	39.152	42.672	55.188
Std Dev	6.344	6.922	7.843
Count	465	29	33



Table A-15

**SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
by DEGREE and TYPE OF INDUSTRY  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Type of Industry			
Nonmanufacturing			
Median	36.000	34.000	56.000
Mean	35.027	34.000	52.000
Std Dev	7.255	5.612	10.863
Count	63	5	4
Aerospace			
Median	37.500	45.000	---
Mean	36.775	45.000	---
Std Dev	1.871	---	---
Count	4	1	0
Basic chemicals			
Median	43.900	46.500	64.000
Mean	43.356	45.033	62.000
Std Dev	1.494	2.984	4.359
Count	40	3	3
Specialty chemicals			
Median	42.000	45.000	63.000
Mean	39.710	43.833	59.000
Std Dev	6.098	2.466	7.810
Count	63	3	3
Agricultural chemicals			
Median	42.550	---	54.000
Mean	40.350	---	54.000
Std Dev	7.123	---	---
Count	6	0	1
Electronics			
Median	39.000	45.000	59.000
Mean	38.489	43.267	59.000
Std Dev	4.095	3.717	4.243
Count	40	3	2
Petroleum			
Median	43.000	50.100	58.000
Mean	42.308	50.100	58.333
Std Dev	3.375	---	11.504
Count	38	1	3
Pharmaceuticals			
Median	43.000	39.500	54.000
Mean	40.002	38.500	55.000
Std Dev	6.320	6.557	8.000
Count	36	4	5
Plastics			
Median	43.000	47.000	57.600
Mean	40.805	47.000	57.600
Std Dev	4.576	---	---
Count	22	1	1
Other manuf			
Median	42.000	47.500	58.800
Mean	40.605	49.000	56.320
Std Dev	4.159	5.865	4.721
Count	124	6	5
TOTAL			
Median	42.000	45.000	57.600
Mean	39.798	42.833	56.748
Std Dev	5.540	6.992	7.265
Count	436	27	27

Table A-16

**SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
by DEGREE and EMPLOYER SIZE  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Employer Size Less than 500			
Median	35,000	39,000	48,000
Mean	33,823	37,889	47,714
Std Dev	6,831	6,112	7,228
Count	77	9	7
500 to 2,499			
Median	40,800	45,500	51,500
Mean	38,740	43,833	49,150
Std Dev	7,320	10,759	9,307
Count	69	6	4
2,500 to 9,999			
Median	42,000	45,250	55,000
Mean	39,288	45,625	54,250
Std Dev	6,227	946	3,096
Count	75	4	4
10,000 to 24,999			
Median	42,550	41,600	58,900
Mean	41,267	42,867	60,800
Std Dev	3,362	6,592	5,614
Count	72	3	6
25,000 or more			
Median	42,500	46,150	60,400
Mean	40,640	45,900	59,067
Std Dev	5,392	2,968	5,214
Count	163	6	12
TOTAL			
Median	41,400	45,000	57,000
Mean	39,078	42,518	55,188
Std Dev	6,368	6,998	7,843
Count	456	28	33

Table A-17

**SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
by DEGREE and WORK FUNCTION  
1996 ACS Starting Salary Survey**

	Highest Degree		
	BS	MS	PHD
Work Function			
Teaching			
Median	18,000	---	43,000
Mean	18,000	---	43,000
Std Dev	16,971	---	9,899
Count	2	0	2
Management			
Median	39,000	45,750	49,000
Mean	36,074	45,750	49,000
Std Dev	7,906	1,061	5,657
Count	23	2	2
Basic research			
Median	36,000	35,000	57,000
Mean	32,900	35,000	57,000
Std Dev	10,025	---	9,899
Count	7	1	2
Applied research			
Median	42,000	45,250	57,600
Mean	40,402	44,433	56,661
Std Dev	5,031	3,630	7,484
Count	141	12	23
Production			
Median	42,500	45,000	---
Mean	40,684	41,125	---
Std Dev	4,756	8,408	---
Count	179	8	0
Professional svcs			
Median	37,500	39,000	56,000
Mean	36,466	37,667	56,000
Std Dev	7,088	3,215	1,414
Count	62	3	2
Other			
Median	39,500	45,800	54,000
Mean	36,693	45,267	54,000
Std Dev	7,794	15,007	8,485
Count	50	3	2
TOTAL			
Median	41,510	45,000	57,000
Mean	39,161	42,672	55,188
Std Dev	6,348	6,922	7,843
Count	464	29	33

Table A-18

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME  
by DEGREE and GEOGRAPHIC REGION  
1996 ACS Starting Salary Survey

	Highest Degree		
	BS	MS	PHD
REGION			
Pacific			
Median	39,680	48,000	52,000
Mean	39,886	49,020	52,500
Std Dev	3,827	6,859	3,000
Count	22	5	4
Mountain			
Median	39,000	27,000	36,000
Mean	38,784	27,000	36,000
Std Dev	3,054	---	---
Count	16	1	1
West North Central			
Median	41,760	41,000	---
Mean	39,065	42,333	---
Std Dev	6,294	4,163	---
Count	52	3	0
West South Central			
Median	43,000	45,800	60,000
Mean	41,590	41,660	59,571
Std Dev	4,405	7,038	7,138
Count	83	5	7
East North Central			
Median	42,000	47,000	58,400
Mean	39,963	47,000	57,800
Std Dev	5,442	---	5,146
Count	70	1	6
East South Central			
Median	41,642	46,000	55,000
Mean	39,043	46,000	55,000
Std Dev	6,056	---	---
Count	34	1	1
Middle Atlantic			
Median	40,700	41,000	52,500
Mean	38,615	40,625	52,933
Std Dev	6,529	5,406	8,175
Count	80	4	6
South Atlantic			
Median	42,000	45,000	58,900
Mean	38,840	44,520	57,967
Std Dev	6,446	4,342	5,507
Count	70	5	6
New England			
Median	37,250	38,500	---
Mean	35,427	38,000	---
Std Dev	6,797	7,165	---
Count	26	4	0
TOTAL			
Median	41,700	45,000	57,000
Mean	39,372	42,672	55,813
Std Dev	5,880	6,922	7,276
Count	453	29	31

Table A-19

STIPENDS of NEW GRADUATES on ASSISTANTSHIPS, FELLOWSHIPS  
or POSTDOCTORAL FELLOWSHIPS BY DEGREE and FIELD  
1996 ACS Starting Salary Survey

	FIELD	
	CHEM ENG	CHEMISTRY
Salary		
Highest Degree		
Bachelors		
Median	16,000	15,000
Mean	15,836	14,961
Std Dev	2,619	3,204
Count	96	699
Masters		
Median	16,000	14,000
Mean	14,100	14,913
Std Dev	3,745	4,563
Count	32	133
Doctorate		
Median	28,500	25,000
Mean	30,800	27,254
Std Dev	7,099	7,682
Count	12	200
TOTAL		
Median	16,000	15,600
Mean	17,456	18,199
Std Dev	6,609	7,331
Count	140	1032

Table B-1a

**CHEMISTRY GRADUATES**  
**by EMPLOYMENT STATUS, SEX, and DEGREE**  
**1996 ACS Starting Salary Survey**

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Employment Status									
Full-Time in Chemistry	27.0% 393	27.8% 367	27.4% 760	41.6% 92	46.8% 87	44.0% 179	43.6% 125	43.1% 69	43.4% 194
Full-Time in Non-Chemistry	8.3% 121	7.8% 103	8.1% 224	3.6% 8	4.3% 8	3.9% 16	2.4% 7	1.9% 3	2.2% 10
Fellowship	26.3% 383	23.7% 313	25.1% 696	38.0% 84	25.3% 47	32.2% 131	45.6% 131	41.9% 67	44.3% 198
Seeking Employment	15.6% 228	17.7% 234	16.6% 462	13.6% 30	17.7% 33	15.5% 63	7.3% 21	11.9% 19	8.9% 40
Not Seeking Employment	22.8% 332	23.0% 303	22.9% 635	3.2% 7	5.9% 11	4.4% 18	1.0% 3	1.3% 2	1.1% 5
Total	100.0% 52.5% 1457	100.0% 47.5% 1320	100.0% 100.0% 2777	100.0% 54.3% 221	100.0% 45.7% 186	100.0% 100.0% 407	100.0% 64.2% 287	100.0% 35.8% 160	100.0% 100.0% 447

Table B-1b

**CHEMISTRY GRADUATES**  
**by PLANS FOR FURTHER STUDIES IN FALL 1996, SEX, and DEGREE**  
**1996 ACS Starting Salary Survey**

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	Pursue Advanced Studies in Fall 1996								
Yes, full-time	45.4% 677	42.5% 580	44.0% 1257	40.7% 92	28.8% 55	35.3% 147	3.4% 10	2.5% 4	3.1% 14
Yes, part-time	8.0% 120	6.2% 85	7.2% 205	5.3% 12	1.0% 2	3.4% 14	1.0% 3	2.5% 4	1.5% 7
No	46.6% 695	51.2% 699	48.8% 1394	54.0% 122	70.2% 134	61.4% 256	95.6% 280	95.0% 153	95.4% 433
Total	100.0% 1492	100.0% 1364	100.0% 2856	100.0% 226	100.0% 191	100.0% 417	100.0% 293	100.0% 161	100.0% 454

Table B-2a

**CHEMISTRY GRADUATES**  
by EMPLOYMENT STATUS, CITIZENSHIP, and DEGREE  
1996 ACS Starting Salary Survey

	Citizenship				Total
	U.S. Native	U.S. Naturali zed	U.S. Permanent Resident	Other Visa	
<b>Bachelors</b>					
Employment Status					
Full-Time in Chemistry	28.2% 675	33.0% 62	25.9% 22	2.9% 1	28.1% 760
Full-Time in Non-Chemistry	8.5% 204	9.0% 17	4.7% 4	.0% 0	8.3% 225
Fellowship	25.5% 611	11.2% 21	22.4% 19	55.9% 19	24.8% 670
Seeking Employment	15.5% 371	23.9% 45	22.4% 19	17.6% 6	16.3% 441
Not Seeking Employment	22.3% 535	22.9% 43	24.7% 21	23.5% 8	22.5% 607
<b>Masters</b>					
Employment Status					
Full-Time in Chemistry	50.2% 123	73.3% 11	39.4% 13	30.3% 33	44.8% 180
Full-Time in Non-Chemistry	5.3% 13	.0% 0	3.0% 1	1.8% 2	4.0% 16
Fellowship	25.7% 63	13.3% 2	27.3% 9	47.7% 52	31.3% 126
Seeking Employment	14.7% 36	6.7% 1	24.2% 8	15.6% 17	15.4% 62
Not Seeking Employment	4.1% 10	6.7% 1	6.1% 2	4.6% 5	4.5% 18
<b>Doctorate</b>					
Employment Status					
Full-Time in Chemistry	48.6% 126	53.3% 8	38.0% 30	31.5% 29	43.4% 193
Full-Time in Non-Chemistry	1.9% 5	.0% 0	3.8% 3	3.3% 3	2.5% 11
Fellowship	41.3% 107	40.0% 6	43.0% 34	52.2% 48	43.8% 195
Seeking Employment	6.6% 17	.0% 0	15.2% 12	13.0% 12	9.2% 41
Not Seeking Employment	1.5% 4	6.7% 1	.0% 0	.0% 0	1.1% 5
<b>Total</b>	100.0% 81.7% 2900	100.0% 6.1% 218	100.0% 5.5% 197	100.0% 6.6% 235	100.0% 100.0% 3550



Table B-2b

CHEMISTRY GRADUATES  
by PLANS FOR FURTHER STUDIES IN FALL 1996, CITIZENSHIP, and DEGREE  
1996 ACS Starting Salary Survey

	Citizenship				Total
	U.S. Native	U.S. Naturalized	U.S. Permanent Resident	Other Visa	
Bachelors					
Pursue Advanced Studies in Fall 1996					
Yes, full-time	43.5% 1071	33.7% 67	47.7% 41	76.5% 26	43.3% 1205
Yes, part-time	7.0% 173	9.5% 19	14.0% 12	.0% 0	7.3% 204
No	49.5% 1217	56.8% 113	38.4% 33	23.5% 8	49.3% 1371
Masters					
Pursue Advanced Studies in Fall 1996					
Yes, full-time	29.0% 73	13.3% 2	26.5% 9	52.7% 58	34.5% 142
Yes, part-time	2.4% 6	.0% 0	8.8% 3	4.5% 5	3.4% 14
No	68.7% 173	86.7% 13	64.7% 22	42.7% 47	62.0% 255
Doctorate					
Pursue Advanced Studies in Fall 1996					
Yes, full-time	3.8% 10	.0% 0	2.5% 2	.0% 0	2.7% 12
Yes, part-time	1.1% 3	.0% 0	3.7% 3	.0% 0	1.3% 6
No	95.0% 249	100.0% 14	93.8% 76	100.0% 94	96.0% 433
Total	100.0% 81.7% 2975	100.0% 6.3% 228	100.0% 5.5% 201	100.0% 6.5% 238	100.0% 100.0% 3642

Table B-3a

CHEMISTRY GRADUATES  
by EMPLOYMENT STATUS, ETHNICITY, and DEGREE  
1996 ACS Starting Salary Survey

	RACE						Total
	Amer Indian	Asian	Black	Hisp	White	Other	
<b>Bachelors</b>							
Employment Status							
Full-Time in Chemistry	55.6% 10	26.1% 75	22.6% 24	25.0% 16	28.7% 624	19.0% 8	28.1% 757
Full-Time in Non-Chemistry	.0% 0	7.3% 21	4.7% 5	7.8% 5	8.8% 192	2.4% 1	8.3% 224
Fellowship	5.6% 1	17.8% 51	21.7% 23	21.9% 14	26.2% 570	11.9% 5	24.7% 664
Seeking Employment	27.8% 5	19.5% 56	24.5% 26	20.3% 13	15.2% 331	26.2% 11	16.4% 442
Not Seeking Employment	11.1% 2	29.3% 84	26.4% 28	25.0% 16	21.1% 458	40.5% 17	22.5% 605
Total	100.0% 7% 18	100.0% 10.7% 287	100.0% 3.9% 106	100.0% 2.4% 64	100.0% 80.8% 2175	100.0% 1.6% 42	100.0% 100.0% 2692
<b>Masters</b>							
Employment Status							
Full-Time in Chemistry	.0% 0	41.2% 47	22.2% 2	41.7% 5	47.4% 119	50.0% 6	44.9% 179
Full-Time in Non-Chemistry	.0% 0	1.8% 2	.0% 0	.0% 0	5.6% 14	.0% 0	4.0% 16
Fellowship	100.0% 1	37.7% 43	33.3% 3	33.3% 4	28.7% 72	25.0% 3	31.6% 126
Seeking Employment	.0% 0	14.0% 16	33.3% 3	16.7% 2	14.7% 37	25.0% 3	15.3% 61
Not Seeking Employment	.0% 0	5.3% 6	11.1% 1	8.3% 1	3.6% 9	.0% 0	4.3% 17
Total	100.0% 3% 1	100.0% 28.6% 114	100.0% 2.3% 9	100.0% 3.0% 12	100.0% 62.9% 251	100.0% 3.0% 12	100.0% 100.0% 399
<b>Doctorate</b>							
Employment Status							
Full-Time in Chemistry	50.0% 1	34.5% 50	53.3% 8	55.6% 5	47.1% 121	35.7% 5	43.0% 190
Full-Time in Non-Chemistry	.0% 0	4.1% 6	.0% 0	.0% 0	1.9% 5	.0% 0	2.5% 11
Fellowship	50.0% 1	47.6% 69	40.0% 6	33.3% 3	42.8% 110	42.9% 6	44.1% 195
Seeking Employment	.0% 0	13.1% 19	.0% 0	11.1% 1	7.0% 18	21.4% 3	9.3% 41
Not Seeking Employment	.0% 0	.7% 1	6.7% 1	.0% 0	1.2% 3	.0% 0	1.1% 5
Total	100.0% 5% 2	100.0% 32.8% 145	100.0% 3.4% 15	100.0% 2.0% 9	100.0% 58.1% 257	100.0% 3.2% 14	100.0% 100.0% 442

Table B-3b

CHEMISTRY GRADUATES  
by PLANS FOR FURTHER STUDIES IN FALL 1996, ETHNICITY, and DEGREE  
1996 ACS Starting Salary Survey

	RACE						Total
	Amer Indian	Asian	Black	Hisp	White	Other	
<b>Bachelors</b>							
Pursue Advanced Studies in Fall 1996							
Yes, full-time	11.1% 2	43.0% 130	47.2% 51	43.1% 28	43.1% 964	55.8% 24	43.3% 1199
Yes, part-time	11.1% 2	6.6% 20	16.7% 18	4.6% 3	6.9% 155	4.7% 2	7.2% 200
No	77.8% 14	50.3% 152	36.1% 39	52.3% 34	50.0% 1117	39.5% 17	49.5% 1373
Total	100.0% .6% 18	100.0% 10.9% 302	100.0% 3.9% 108	100.0% 2.3% 65	100.0% 80.7% 2236	100.0% 1.6% 43	100.0% 100.0% 2772
<b>Masters</b>							
Pursue Advanced Studies in Fall 1996							
Yes, full-time	100.0% 1	41.4% 48	40.0% 4	41.7% 5	29.8% 77	50.0% 6	34.5% 141
Yes, part-time	.0% 0	4.3% 5	10.0% 1	.0% 0	3.1% 8	.0% 0	3.4% 14
No	.0% 0	54.3% 63	50.0% 5	58.3% 7	67.1% 173	50.0% 6	62.1% 254
Total	100.0% .2% 1	100.0% 28.4% 116	100.0% 2.4% 10	100.0% 2.9% 12	100.0% 63.1% 258	100.0% 2.9% 12	100.0% 100.0% 409
<b>Doctorate</b>							
Pursue Advanced Studies in Fall 1996							
Yes, full-time	.0% 0	2.0% 3	6.7% 1	.0% 0	3.5% 9	.0% 0	2.9% 13
Yes, part-time	50.0% 1	.7% 1	.0% 0	.0% 0	1.2% 3	.0% 0	1.1% 5
No	50.0% 1	97.3% 143	93.3% 14	100.0% 10	95.4% 248	100.0% 14	96.0% 430
Total	100.0% .4% 2	100.0% 32.8% 147	100.0% 3.3% 15	100.0% 2.2% 10	100.0% 58.0% 260	100.0% 3.1% 14	100.0% 100.0% 448

Table B-4a

BS CHEMISTRY GRADUATES  
by EMPLOYMENT STATUS and CERTIFICATION  
1996 ACS Starting Salary Survey

	Completed Approved Program?		Total
	Yes	No	
Employment Status			
Full-Time in Chemistry	27.8% 333	27.0% 430	27.3% 763
Full-Time in Non-Chemistry	5.5% 66	10.2% 162	8.2% 228
Fellowship	36.0% 432	16.6% 264	24.9% 696
Seeking Employment	14.8% 178	17.9% 285	16.6% 463
Not Seeking Employment	15.9% 191	28.2% 449	22.9% 640
Total	100.0% 43.0% 1200	100.0% 57.0% 1590	100.0% 100.0% 2790

Table B-4b

BS CHEMISTRY GRADUATES  
by PLANS FOR FURTHER STUDIES IN FALL 1996 and CERTIFICATION  
1996 ACS Starting Salary Survey

	Completed Approved Program?		Total
	Yes	No	
Pursue Advanced Studies in Fall 1996			
Yes, full-time	49.7% 614	32.2% 810	38.0% 1424
Yes, part-time	5.2% 64	6.5% 163	6.1% 227
No	45.1% 558	61.3% 1541	56.0% 2099
Total	100.0% 33.0% 1236	100.0% 67.0% 2514	100.0% 100.0% 3750

Table B-5

**MASTERS CHEMISTRY GRADUATES**  
**by EMPLOYMENT STATUS and DEGREE SPECIALTY**  
**1996 ACS Starting Salary Survey**

	Employment Status					Total
	Full-Time Chemis-try	Full-Time Non-Chem	Fellow-ship	Seeking Employ-ment	Not Seeking Employ-ment	
Degree Field						
Biochemistry	10.5%	18.8%	9.2%	7.9%	15.8%	10.2%
	45.2%	7.1%	28.6%	11.9%	7.1%	100.0%
	19	3	12	5	3	42
General chem	18.8%	31.3%	13.7%	9.5%	15.8%	16.1%
	51.5%	7.6%	27.3%	9.1%	4.5%	100.0%
	34	5	18	6	3	66
Analytical chem	24.9%	.0%	16.0%	22.2%	26.3%	20.7%
	52.9%	.0%	24.7%	16.5%	5.9%	100.0%
	45	0	21	14	5	85
Inorganic chem	6.6%	.0%	10.7%	7.9%	10.5%	8.0%
	36.4%	.0%	42.4%	15.2%	6.1%	100.0%
	12	0	14	5	2	33
Organic chem	24.3%	18.8%	29.8%	27.0%	5.3%	25.4%
	42.3%	2.9%	37.5%	16.3%	1.0%	100.0%
	44	3	39	17	1	104
Physical chem	5.5%	18.8%	16.8%	14.3%	15.8%	11.5%
	21.3%	6.4%	46.8%	19.1%	6.4%	100.0%
	10	3	22	9	3	47
Polymer chem	4.4%	.0%	.8%	3.2%	5.3%	2.9%
	66.7%	.0%	8.3%	16.7%	8.3%	100.0%
	8	0	1	2	1	12
Other chem	5.0%	12.5%	3.1%	7.9%	5.3%	5.1%
	42.9%	9.5%	19.0%	23.8%	4.8%	100.0%
	9	2	4	5	1	21
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	44.1%	3.9%	32.0%	15.4%	4.6%	100.0%
	181	16	131	63	19	410

Table B-6

PhD CHEMISTRY GRADUATES  
by EMPLOYMENT STATUS and DEGREE SPECIALTY  
1996 ACS Starting Salary Survey

	Employment Status					Total
	Full-Time Chemistry	Full-Time Non-Chem	Fellowship	Seeking Employment	Not Seeking Employment	
Degree Field						
Biochemistry	4.1%	18.2%	12.0%	16.7%	40.0%	9.5%
	18.6%	4.7%	55.8%	16.3%	4.7%	100.0%
	8	2	24	7	2	43
General chem	3.1%	.0%	2.0%	.0%	.0%	2.2%
	60.0%	.0%	40.0%	.0%	.0%	100.0%
	6	0	4	0	0	10
Analytical chem	33.7%	27.3%	12.0%	31.0%	20.0%	23.6%
	61.7%	2.8%	22.4%	12.1%	.9%	100.0%
	66	3	24	13	1	107
Inorganic chem	14.3%	18.2%	21.0%	9.5%	.0%	16.7%
	36.8%	2.6%	55.3%	5.3%	.0%	100.0%
	28	2	42	4	0	76
Organic chem	18.4%	9.1%	30.0%	14.3%	20.0%	22.9%
	34.6%	1.0%	57.7%	5.8%	1.0%	100.0%
	36	1	60	6	1	104
Physical chem	12.8%	18.2%	12.5%	21.4%	20.0%	13.7%
	40.3%	3.2%	40.3%	14.5%	1.6%	100.0%
	25	2	25	9	1	62
Polymer chem	7.7%	.0%	2.5%	4.8%	.0%	4.8%
	68.2%	.0%	22.7%	9.1%	.0%	100.0%
	15	0	5	2	0	22
Other chem	6.1%	9.1%	8.0%	2.4%	.0%	6.6%
	40.0%	3.3%	53.3%	3.3%	.0%	100.0%
	12	1	16	1	0	30
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	43.2%	2.4%	44.1%	9.3%	1.1%	100.0%
	196	11	200	42	5	454

Table B-7a

**CHEMICAL ENGINEERING GRADUATES  
by EMPLOYMENT STATUS, SEX, and DEGREE  
1996 ACS Starting Salary Survey**

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Employment Status Full-Time in Chemistry	55.5% 348	57.4% 201	56.2% 549	46.7% 35	41.4% 12	45.2% 47	71.4% 45	55.6% 10	67.9% 55
Full-Time in Non-Chemistry	12.4% 78	15.7% 55	13.6% 133	10.7% 8	13.8% 4	11.5% 12	7.9% 5	22.2% 4	11.1% 9
Fellowship	10.4% 65	8.3% 29	9.6% 94	29.3% 22	31.0% 9	29.8% 31	14.3% 9	11.1% 2	13.6% 11
Seeking Employment	17.2% 108	14.6% 51	16.3% 159	12.0% 9	6.9% 2	10.6% 11	6.3% 4	5.6% 1	6.2% 5
Not Seeking Employment	4.5% 28	4.0% 14	4.3% 42	1.3% 1	6.9% 2	2.9% 3	.0% 0	5.6% 1	1.2% 1
Total	100.0% 627	100.0% 350	100.0% 977	100.0% 75	100.0% 29	100.0% 104	100.0% 63	100.0% 18	100.0% 81





Table B-8a

**CHEMICAL ENGINEERING GRADUATES**  
by EMPLOYMENT STATUS, CITIZENSHIP, and DEGREE  
1996 ACS Starting Salary Survey

	Citizenship				Total
	U.S. Native	U.S. Naturalized	U.S. Permanent Resident	Other Visa	
<b>Bachelors</b>					
Employment Status					
Full-Time in Chemistry	57.5% 503	51.9% 28	58.6% 17	35.7% 5	56.9% 553
Full-Time in Non-Chemistry	14.1% 123	11.1% 6	6.9% 2	14.3% 2	13.7% 133
Fellowship	9.3% 81	7.4% 4	10.3% 3	21.4% 3	9.4% 91
Seeking Employment	15.4% 135	22.2% 12	20.7% 6	14.3% 2	15.9% 155
Not Seeking Employment	3.8% 33	7.4% 4	3.4% 1	14.3% 2	4.1% 40
<b>Masters</b>					
Employment Status					
Full-Time in Chemistry	49.2% 29	100.0% 4	33.3% 3	35.7% 10	46.0% 46
Full-Time in Non-Chemistry	11.9% 7	.0% 0	33.3% 3	7.1% 2	12.0% 12
Fellowship	30.5% 18	.0% 0	22.2% 2	28.6% 8	28.0% 28
Seeking Employment	8.5% 5	.0% 0	11.1% 1	17.9% 5	11.0% 11
Not Seeking Employment	.0% 0	.0% 0	.0% 0	10.7% 3	3.0% 3
<b>Doctorate</b>					
Employment Status					
Full-Time in Chemistry	69.2% 27	50.0% 1	54.5% 6	71.0% 22	67.5% 56
Full-Time in Non-Chemistry	7.7% 3	.0% 0	27.3% 3	9.7% 3	10.8% 9
Fellowship	12.8% 5	.0% 0	18.2% 2	16.1% 5	14.5% 12
Seeking Employment	7.7% 3	50.0% 1	.0% 0	3.2% 1	6.0% 5
Not Seeking Employment	2.6% 1	.0% 0	.0% 0	.0% 0	1.2% 1
<b>Total</b>	100.0% 84.2% 973	100.0% 5.2% 60	100.0% 4.2% 49	100.0% 6.3% 73	100.0% 100.0% 1155

Table B-8b

CHEMICAL ENGINEERING GRADUATES  
by PLANS FOR FURTHER STUDIES IN FALL 1996, CITIZENSHIP, and DEGREE  
1996 ACS Starting Salary Survey

	Citizenship				Total
	U.S. Native	U.S. Natural- ized	U.S. Permanent Resident	Other Visa	
<b>Bachelors</b>					
Pursue Advanced Studies in Fall 1996					
Yes, full-time	13.1% 117	15.8% 9	24.1% 7	42.9% 6	14.0% 139
Yes, part-time	6.5% 58	10.5% 6	10.3% 3	7.1% 1	6.9% 68
No	80.4% 717	73.7% 42	65.5% 19	50.0% 7	79.1% 785
<b>Masters</b>					
Pursue Advanced Studies in Fall 1996					
Yes, full-time	30.0% 18	25.0% 1	22.2% 2	44.8% 13	33.3% 34
Yes, part-time	1.7% 1	.0% 0	.0% 0	3.4% 1	2.0% 2
No	68.3% 41	75.0% 3	77.8% 7	51.7% 15	64.7% 66
<b>Doctorate</b>					
Pursue Advanced Studies in Fall 1996					
Yes, full-time	7.5% 3	.0% 0	.0% 0	.0% 0	3.6% 3
No	92.5% 37	100.0% 2	100.0% 11	100.0% 31	96.4% 81
<b>Total</b>	100.0% 84.2% 992	100.0% 5.3% 63	100.0% 4.2% 49	100.0% 6.3% 74	100.0% 100.0% 1178

Table B-9a

**CHEMICAL ENGINEERING GRADUATES**  
**by EMPLOYMENT STATUS, ETHNICITY, and DEGREE**  
**1996 ACS Starting Salary Survey**

	RACE						Total
	Amer Indian	Asian	Black	Hisp	White	Other	
<b>Bachelors</b>							
Employment Status							
Full-Time in Chemistry	40.0% 2	50.0% 52	64.5% 20	60.0% 9	57.7% 455	47.1% 8	56.8% 546
Full-Time in Non-Chemistry	20.0% 1	14.4% 15	12.9% 4	.0% 0	13.6% 107	23.5% 4	13.6% 131
Fellowship	20.0% 1	10.6% 11	3.2% 1	13.3% 2	9.0% 71	17.6% 3	9.3% 89
Seeking Employment	.0% 0	18.3% 19	16.1% 5	20.0% 3	16.2% 128	5.9% 1	16.2% 156
Not Seeking Employment	20.0% 1	6.7% 7	3.2% 1	6.7% 1	3.5% 28	5.9% 1	4.1% 39
Total	100.0% .5% 5	100.0% 10.8% 104	100.0% 3.2% 31	100.0% 1.6% 15	100.0% 82.1% 789	100.0% 1.8% 17	100.0% 100.0% 961
<b>Masters</b>							
Employment Status							
Full-Time in Chemistry	.0% 0	45.7% 16	.0% 0	50.0% 1	46.6% 27	66.7% 2	46.5% 46
Full-Time in Non-Chemistry	.0% 0	11.4% 4	.0% 0	.0% 0	13.8% 8	.0% 0	12.1% 12
Fellowship	.0% 0	22.9% 8	100.0% 1	50.0% 1	29.3% 17	33.3% 1	28.3% 28
Seeking Employment	.0% 0	14.3% 5	.0% 0	.0% 0	10.3% 6	.0% 0	11.1% 11
Not Seeking Employment	.0% 0	5.7% 2	.0% 0	.0% 0	.0% 0	.0% 0	2.0% 2
Total	.0% 0	100.0% 35.4% 35	100.0% 1.0% 1	100.0% 2.0% 2	100.0% 58.6% 58	100.0% 3.0% 3	100.0% 100.0% 99
<b>Doctorate</b>							
Employment Status							
Full-Time in Chemistry	.0% 0	64.9% 24	100.0% 1	100.0% 1	66.7% 28	100.0% 1	67.1% 55
Full-Time in Non-Chemistry	.0% 0	13.5% 5	.0% 0	.0% 0	9.5% 4	.0% 0	11.0% 9
Fellowship	.0% 0	16.2% 6	.0% 0	.0% 0	14.3% 6	.0% 0	14.6% 12
Seeking Employment	.0% 0	2.7% 1	.0% 0	.0% 0	9.5% 4	.0% 0	6.1% 5
Not Seeking Employment	.0% 0	2.7% 1	.0% 0	.0% 0	.0% 0	.0% 0	1.2% 1
Total	.0% 0	100.0% 45.1% 37	100.0% 1.2% 1	100.0% 1.2% 1	100.0% 51.2% 42	100.0% 1.2% 1	100.0% 100.0% 82

Table B-9b

CHEMICAL ENGINEERING GRADUATES  
by PLANS FOR FURTHER STUDIES IN FALL 1996, ETHNICITY, and DEGREE  
1996 ACS Starting Salary Survey

	RACE						Total
	Amer Indian	Asian	Black	Hisp	White	Other	
<b>Bachelors</b>							
Pursue Advanced Studies in Fall 1996							
Yes, full-time	40.0% 2	18.5% 20	12.9% 4	20.0% 3	12.6% 102	23.5% 4	13.7% 135
Yes, part-time	.0% 0	9.3% 10	3.2% 1	6.7% 1	6.8% 55	5.9% 1	6.9% 68
No	60.0% 3	72.2% 78	83.9% 26	73.3% 11	80.5% 650	70.6% 12	79.3% 780
Total	100.0% .5% 5	100.0% 11.0% 108	100.0% 3.2% 31	100.0% 1.5% 15	100.0% 82.1% 807	100.0% 1.7% 17	100.0% 100.0% 983
<b>Masters</b>							
Pursue Advanced Studies in Fall 1996							
Yes, full-time	.0% 0	33.3% 12	100.0% 1	50.0% 1	30.5% 18	33.3% 1	32.7% 33
Yes, part-time	.0% 0	2.8% 1	.0% 0	.0% 0	1.7% 1	.0% 0	2.0% 2
No	.0% 0	63.9% 23	.0% 0	50.0% 1	67.8% 40	66.7% 2	65.3% 66
Total	.0% .0% 0	100.0% 35.6% 36	100.0% 1.0% 1	100.0% 2.0% 2	100.0% 58.4% 59	100.0% 3.0% 3	100.0% 100.0% 101
<b>Doctorate</b>							
Pursue Advanced Studies in Fall 1996							
Yes, full-time	.0% 0	2.7% 1	.0% 0	.0% 0	4.7% 2	.0% 0	3.6% 3
No	.0% 0	97.3% 36	100.0% 1	100.0% 1	95.3% 41	100.0% 1	96.4% 80
Total	.0% .0% 0	100.0% 44.6% 37	100.0% 1.2% 1	100.0% 1.2% 1	100.0% 51.8% 43	100.0% 1.2% 1	100.0% 100.0% 83

Table C-1

**CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1996**  
**by FIELD OF ADVANCED STUDY, DEGREE, and SEX**  
**1996 ACS Starting Salary Survey**

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Field of Further Studies									
Chemistry	30.0% 36	20.2% 17	26.0% 53	50.0% 6	.0% 0	42.9% 6	.0% 0	.0% 0	.0% 0
Other phys sci	8.3% 10	4.8% 4	6.9% 14	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Chem or biochem eng	4.2% 5	2.4% 2	3.4% 7	8.3% 1	50.0% 1	14.3% 2	.0% 0	.0% 0	.0% 0
Other eng	2.5% 3	1.2% 1	2.0% 4	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Biochemistry	10.8% 13	7.1% 6	9.3% 19	16.7% 2	50.0% 1	21.4% 3	33.3% 1	.0% 0	14.3% 1
Life science	5.8% 7	9.5% 8	7.4% 15	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Medicine	5.8% 7	2.4% 2	4.4% 9	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Dentistry	1.7% 2	.0% 0	1.0% 2	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Pharmacy	3.3% 4	3.6% 3	3.4% 7	8.3% 1	.0% 0	7.1% 1	.0% 0	.0% 0	.0% 0
Business	10.0% 12	9.5% 8	9.8% 20	8.3% 1	.0% 0	7.1% 1	.0% 0	25.0% 1	14.3% 1
Education	4.2% 5	9.5% 8	6.4% 13	.0% 0	.0% 0	.0% 0	.0% 0	50.0% 2	28.6% 2
Law	.0% 0	1.2% 1	.5% 1	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Other	13.3% 16	28.6% 24	19.6% 40	8.3% 1	.0% 0	7.1% 1	66.7% 2	25.0% 1	42.9% 3
Total	100.0% 120	100.0% 84	100.0% 204	100.0% 12	100.0% 2	100.0% 14	100.0% 3	100.0% 4	100.0% 7

Table C-2

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1996  
by FIELD OF ADVANCED STUDY and CERTIFICATION  
1996 ACS Starting Salary Survey

	Completed Approved Program?		Total
	Yes	No	
Field of Further Studies			
Chemistry	33.3% 21	23.2% 33	26.3% 54
Other phys sci	6.3% 4	7.0% 10	6.8% 14
Chem or biochem eng	1.6% 1	4.2% 6	3.4% 7
Other eng	6.3% 4	.0% 0	2.0% 4
Biochemistry	9.5% 6	9.2% 13	9.3% 19
Life science	4.8% 3	8.5% 12	7.3% 15
Medicine	3.2% 2	4.9% 7	4.4% 9
Dentistry	.0% 0	1.4% 2	1.0% 2
Pharmacy	3.2% 2	3.5% 5	3.4% 7
Business	12.7% 8	8.5% 12	9.8% 20
Education	4.8% 3	7.0% 10	6.3% 13
Law	1.6% 1	.0% 0	.5% 1
Other	12.7% 8	22.5% 32	19.5% 40
Total	100.0% 63	100.0% 142	100.0% 205

Table C-3

CHEMICAL ENG GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1996  
by FIELD OF ADVANCED STUDY, SEX, and DEGREE  
1996 ACS Starting Salary Survey

	Bachelors			Masters		
	Male	Female	Total	Male	Female	Total
Field of Further Studies Chemistry	.0% 0	5.3% 1	1.4% 1	.0% 0	.0% 0	.0% 0
Other phys sci	2.0% 1	5.3% 1	2.9% 2	.0% 0	.0% 0	.0% 0
Chem or biochem eng	45.1% 23	36.8% 7	42.9% 30	.0% 0	100.0% 1	50.0% 1
Other eng	13.7% 7	5.3% 1	11.4% 8	.0% 0	.0% 0	.0% 0
Medicine	3.9% 2	.0% 0	2.9% 2	.0% 0	.0% 0	.0% 0
Business	29.4% 15	36.8% 7	31.4% 22	.0% 0	.0% 0	.0% 0
Other	5.9% 3	10.5% 2	7.1% 5	100.0% 1	.0% 0	50.0% 1
Total	100.0% 51	100.0% 19	100.0% 70	100.0% 1	100.0% 1	100.0% 2



Table C-4

CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1996  
by FIELD OF ADVANCED STUDY, DEGREE, and SEX  
1996 ACS Starting Salary Survey

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Field of Further Studies Chemistry	40.1% 271	33.4% 194	37.0% 465	70.7% 65	72.7% 40	71.4% 105	40.0% 0	25.0% 0	35.7% 5
Other phys sci	1.3% 9	1.0% 6	1.2% 15	2.2% 2	1.8% 1	2.0% 3	0% 0	0% 0	0% 0
Chem or biochem eng	1.9% 13	1.7% 10	1.8% 23	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0
Other eng	1.5% 10	1.2% 7	1.4% 17	2.2% 2	0% 0	1.4% 2	0% 0	0% 0	0% 0
Biochemistry	8.3% 56	7.8% 45	8.0% 101	12.0% 11	12.7% 7	12.2% 18	0% 0	25.0% 1	7.1% 1
Life science	3.7% 25	3.3% 19	3.5% 44	1.1% 1	0% 0	0.7% 1	20.0% 2	25.0% 1	21.4% 3
Medicine	27.7% 187	21.4% 124	24.8% 311	2.2% 2	1.8% 1	2.0% 3	10.0% 1	0% 0	7.1% 1
Dentistry	2.1% 14	4.8% 28	3.3% 42	0% 0	1.8% 1	0.7% 1	0% 0	0% 0	0% 0
Pharmacy	3.1% 21	5.5% 32	4.2% 53	1.1% 1	0% 0	0.7% 1	0% 0	0% 0	0% 0
Business	1.0% 7	0.5% 3	0.8% 10	2.2% 2	0% 0	1.4% 2	10.0% 1	0% 0	7.1% 1
Education	1.3% 9	1.7% 10	1.5% 19	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0
Law	1.8% 12	1.9% 11	1.8% 23	2.2% 2	0% 0	1.4% 2	10.0% 1	25.0% 1	14.3% 2
Other	6.2% 42	15.7% 91	10.6% 133	4.3% 4	9.1% 5	6.1% 9	10.0% 1	0% 0	7.1% 1
Total	100.0% 676	100.0% 580	100.0% 1256	100.0% 92	100.0% 55	100.0% 147	100.0% 10	100.0% 4	100.0% 14

Table C-5

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1996  
by FIELD OF ADVANCED STUDY and CERTIFICATION  
1996 ACS Starting Salary Survey

	Completed Approved Program?		Total
	Yes	No	
Field of Further Studies			
Chemistry	56.2% 344	18.6% 121	36.9% 465
Other phys sci	1.5% 9	1.1% 7	1.3% 16
Chem or biochem eng	2.3% 14	1.4% 9	1.8% 23
Other eng	1.1% 7	1.5% 10	1.3% 17
Biochemistry	7.7% 47	8.3% 54	8.0% 101
Life science	1.5% 9	5.4% 35	3.5% 44
Medicine	14.5% 89	34.8% 226	25.0% 315
Dentistry	1.0% 6	5.5% 36	3.3% 42
Pharmacy	3.6% 22	4.8% 31	4.2% 53
Business	.8% 5	.8% 5	.8% 10
Education	1.6% 10	1.4% 9	1.5% 19
Law	1.5% 9	2.2% 14	1.8% 23
Other	6.7% 41	14.2% 92	10.5% 133
Total	100.0% 612	100.0% 649	100.0% 1261

Table C-6

CHEMICAL ENG GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1996  
by FIELD OF ADVANCED STUDY, SEX, and DEGREE  
1996 ACS Starting Salary Survey

	Bachelors			Masters		
	Male	Female	Total	Male	Female	Total
Field of Further Studies						
Chemistry	1.0% 1	4.5% 2	2.1% 3	.0% 0	.0% 0	.0% 0
Other phys sci	1.0% 1	.0% 0	.7% 1	.0% 0	.0% 0	.0% 0
Chem or biochem eng	62.6% 62	47.7% 21	58.0% 83	96.0% 24	91.7% 11	94.6% 35
Other eng	3.0% 3	11.4% 5	5.6% 8	4.0% 1	.0% 0	2.7% 1
Biochemistry	1.0% 1	2.3% 1	1.4% 2	.0% 0	.0% 0	.0% 0
Life science	.0% 0	4.5% 2	1.4% 2	.0% 0	.0% 0	.0% 0
Medicine	10.1% 10	6.8% 3	9.1% 13	.0% 0	.0% 0	.0% 0
Dentistry	2.0% 2	.0% 0	1.4% 2	.0% 0	.0% 0	.0% 0
Business	9.1% 9	9.1% 4	9.1% 13	.0% 0	.0% 0	.0% 0
Education	1.0% 1	.0% 0	.7% 1	.0% 0	.0% 0	.0% 0
Law	3.0% 3	4.5% 2	3.5% 5	.0% 0	.0% 0	.0% 0
Other	6.1% 6	9.1% 4	7.0% 10	.0% 0	8.3% 1	2.7% 1
Total	100.0% 99	100.0% 44	100.0% 143	100.0% 25	100.0% 12	100.0% 37

Table C-7

**BS CHEMISTRY GRADUATES WHO ARE NOT FULLY EMPLOYED  
and NOT SEEKING EMPLOYMENT  
by SEX, and PLANS FOR FURTHER STUDY  
1996 ACS Starting Salary Survey**

	Male	Female	Total
Yes, full-time	98.4% 376	96.8% 306	97.7% 682
Yes, part-time	.8% 3	1.3% 4	1.0% 7
No	.8% 3	1.9% 6	1.3% 9
Total	100.0% 382	100.0% 316	100.0% 698

Table C-8

**CHEMICAL ENG GRADUATES WHO ARE NOT FULLY EMPLOYED  
and NOT SEEKING EMPLOYMENT  
by SEX and PLANS FOR FURTHER STUDY  
1996 ACS Starting Salary Survey**

	Male	Female	Total
Yes, full-time	100.0% 67	100.0% 29	100.0% 96
Total	100.0% 67	100.0% 29	100.0% 96

Table D-1

**BS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES**  
by AGE and SEX  
1996 ACS Starting Salary Survey

	FIELD					
	CHEM ENG			CHEMISTRY		
	Male	Female	Total	Male	Female	Total
under 20	.0% 0	.0% 0	.0% 0	.2% 3	.1% 1	.1% 4
20	.2% 1	.6% 2	.3% 3	.4% 6	.8% 10	.6% 16
21	6.8% 43	10.4% 37	8.1% 80	7.1% 101	13.3% 174	10.0% 275
22	36.9% 233	46.8% 166	40.4% 399	39.3% 563	47.4% 620	43.2% 1183
23	30.4% 192	26.5% 94	29.0% 286	19.8% 283	17.1% 224	18.5% 507
24	12.3% 78	7.9% 28	10.7% 106	10.7% 153	6.3% 82	8.6% 235
25	4.7% 30	2.3% 8	3.9% 38	5.9% 85	2.8% 37	4.5% 122
26	2.1% 13	1.1% 4	1.7% 17	3.7% 53	2.1% 27	2.9% 80
27	.9% 6	.3% 1	.7% 7	2.1% 30	1.5% 20	1.8% 50
28	.6% 4	.3% 1	.5% 5	2.1% 30	1.1% 14	1.6% 44
29	1.1% 7	.3% 1	.8% 8	1.3% 18	.7% 9	1.0% 27
30 to 34	3.0% 19	2.3% 8	2.7% 27	3.6% 52	2.8% 37	3.2% 89
35 to 39	.8% 5	1.1% 4	.9% 9	2.2% 32	2.2% 29	2.2% 61
40 to 49	.2% 1	.3% 1	.2% 2	1.3% 18	1.8% 23	1.5% 41
50 to 59	.0% 0	.0% 0	.0% 0	.1% 1	.0% 0	.0% 1
60 to 64	.0% 0	.0% 0	.0% 0	.0% 0	.1% 1	.0% 1
65 and over	.0% 0	.0% 0	.0% 0	.3% 4	.0% 0	.1% 4
Total	100.0% 632	100.0% 355	100.0% 987	100.0% 1432	100.0% 1308	100.0% 2740

Table D-2

**MS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES**  
**by AGE and SEX**  
**1996 ACS Starting Salary Survey**

	FIELD					
	CHEM ENG			CHEMISTRY		
	Male	Female	Total	Male	Female	Total
under 20	.0% 0	.0% 0	.0% 0	.0% 0	.5% 1	.2% 1
22	.0% 0	.0% 0	.0% 0	.5% 1	1.6% 3	1.0% 4
23	4.1% 3	.0% 0	2.9% 3	1.9% 4	1.6% 3	1.7% 7
24	16.4% 12	3.4% 1	12.7% 13	8.8% 19	11.2% 21	9.9% 40
25	26.0% 19	20.7% 6	24.5% 25	9.3% 20	17.0% 32	12.9% 52
26	17.8% 13	20.7% 6	18.6% 19	11.6% 25	12.2% 23	11.9% 48
27	8.2% 6	17.2% 5	10.8% 11	6.5% 14	8.0% 15	7.2% 29
28	6.8% 5	6.9% 2	6.9% 7	9.3% 20	8.5% 16	8.9% 36
29	2.7% 2	10.3% 3	4.9% 5	7.4% 16	7.4% 14	7.4% 30
30 to 34	13.7% 10	13.8% 4	13.7% 14	27.3% 59	17.0% 32	22.5% 91
35 to 39	2.7% 2	3.4% 1	2.9% 3	10.2% 22	7.4% 14	8.9% 36
40 to 49	1.4% 1	.0% 0	1.0% 1	4.6% 10	4.3% 8	4.5% 18
50 to 59	.0% 0	.0% 0	.0% 0	1.9% 4	.5% 1	1.2% 5
60 to 64	.0% 0	.0% 0	.0% 0	.5% 1	1.1% 2	.7% 3
65 and over	.0% 0	3.4% 1	1.0% 1	.5% 1	1.6% 3	1.0% 4
Total	100.0% 73	100.0% 29	100.0% 102	100.0% 216	100.0% 188	100.0% 404

Table D-3

PHD CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES  
by AGE and SEX  
1996 ACS Starting Salary Survey

	FIELD					
	CHEM ENG			CHEMISTRY		
	Male	Female	Total	Male	Female	Total
22	.0% 0	.0% 0	.0% 0	.0% 0	.6% 1	.2% 1
24	.0% 0	.0% 0	.0% 0	.0% 0	1.3% 2	.5% 2
25	1.6% 1	.0% 0	1.2% 1	.4% 1	.6% 1	.5% 2
26	3.1% 2	.0% 0	2.5% 2	4.3% 12	5.2% 8	4.6% 20
27	9.4% 6	.0% 0	7.4% 6	8.6% 24	14.9% 23	10.9% 47
28	17.2% 11	29.4% 5	19.8% 16	15.1% 42	16.2% 25	15.5% 67
29	12.5% 8	.0% 0	9.9% 8	10.0% 28	14.3% 22	11.5% 50
30 to 34	40.6% 26	58.8% 10	44.4% 36	38.4% 107	31.8% 49	36.0% 156
35 to 39	10.9% 7	5.9% 1	9.9% 8	17.2% 48	8.4% 13	14.1% 61
40 to 49	1.6% 1	5.9% 1	2.5% 2	5.4% 15	4.5% 7	5.1% 22
50 to 59	1.6% 1	.0% 0	1.2% 1	.4% 1	.0% 0	.2% 1
60 to 64	1.6% 1	.0% 0	1.2% 1	.4% 1	1.9% 3	.9% 4
Total	100.0% 64	100.0% 17	100.0% 81	100.0% 279	100.0% 154	100.0% 433

Table D-4

POSTDOC CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES  
by AGE and SEX  
1996 ACS Starting Salary Survey

	FIELD					
	CHEM ENG			CHEMISTRY		
	Male	Female	Total	Male	Female	Total
22	.0% 0	.0% 0	.0% 0	.0% 0	1.6% 1	.5% 1
24	.0% 0	.0% 0	.0% 0	.0% 0	1.6% 1	.5% 1
26	.0% 0	.0% 0	.0% 0	4.9% 6	3.3% 2	4.3% 8
27	33.3% 3	.0% 0	27.3% 3	11.4% 14	11.5% 7	11.4% 21
28	11.1% 1	50.0% 1	18.2% 2	19.5% 24	16.4% 10	18.5% 34
29	.0% 0	.0% 0	.0% 0	8.1% 10	14.8% 9	10.3% 19
30 to 34	33.3% 3	50.0% 1	36.4% 4	37.4% 46	36.1% 22	37.0% 68
35 to 39	22.2% 2	.0% 0	18.2% 2	13.8% 17	9.8% 6	12.5% 23
40 to 49	.0% 0	.0% 0	.0% 0	4.1% 5	1.6% 1	3.3% 6
60 to 64	.0% 0	.0% 0	.0% 0	.8% 1	3.3% 2	1.6% 3
Total	100.0% 9	100.0% 2	100.0% 11	100.0% 123	100.0% 61	100.0% 184



Table E-1

OFFERS of FULL-TIME EMPLOYED INEXPERIENCED CHEMISTS  
by AGE and SEX  
1996 ACS Starting Salary Survey

	Highest Degree									
	Bachelors			Masters			Doctorate			Total
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
1	56.9% 136	46.5% 106	51.8% 242	47.4% 9	30.6% 11	36.4% 20	54.5% 24	50.0% 17	52.6% 41	
2	23.4% 56	32.0% 73	27.6% 129	31.6% 6	44.4% 16	40.0% 22	31.8% 14	38.2% 13	34.6% 27	
3	13.8% 33	15.4% 35	14.6% 68	10.5% 2	11.1% 4	10.9% 6	9.1% 4	.0% 0	5.1% 4	
4	3.3% 8	2.6% 6	3.0% 14	5.3% 1	8.3% 3	7.3% 4	.0% 0	2.9% 1	1.3% 1	
5	1.3% 3	2.6% 6	1.9% 9	.0% 0	2.8% 1	1.8% 1	.0% 0	5.9% 2	2.6% 2	
6 or 7	.8% 2	.4% 1	.6% 3	5.3% 1	2.8% 1	3.6% 2	4.5% 2	2.9% 1	3.8% 3	
8 or 9	.0% 0	.4% 1	.2% 1	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	
10 OR MORE	.4% 1	.0% 0	.2% 1	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	
Total	100.0% 239	100.0% 228	100.0% 467	100.0% 19	100.0% 36	100.0% 55	100.0% 44	100.0% 34	100.0% 78	

Table E-2

OFFERS of FULL-TIME EMPLOYED EXPERIENCED CHEMISTS  
by AGE and SEX  
1996 ACS Starting Salary Survey

	Highest Degree									
	Bachelors			Masters			Doctorate			Total
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
1	36.1% 44	47.3% 53	41.5% 97	47.9% 23	29.3% 12	39.3% 35	51.5% 34	65.2% 15	55.1% 49	
2	36.1% 44	31.3% 35	33.8% 79	43.8% 21	51.2% 21	47.2% 42	25.8% 17	21.7% 5	24.7% 22	
3	20.5% 25	12.5% 14	16.7% 39	4.2% 2	12.2% 5	7.9% 7	10.6% 7	8.7% 2	10.1% 9	
4	5.7% 7	4.5% 5	5.1% 12	4.2% 2	4.9% 2	4.5% 4	4.5% 3	4.3% 1	4.5% 4	
5	1.6% 2	3.6% 4	2.6% 6	.0% 0	.0% 0	.0% 0	4.5% 3	.0% 0	3.4% 3	
6 or 7	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	3.0% 2	.0% 0	2.2% 2	
8 or 9	.0% 0	.9% 1	.4% 1	.0% 0	2.4% 1	1.1% 1	.0% 0	.0% 0	.0% 0	
Total	100.0% 122	100.0% 112	100.0% 234	100.0% 48	100.0% 41	100.0% 89	100.0% 66	100.0% 23	100.0% 89	

Table E-3

OFFERS of FULL-TIME EMPLOYED INEXPERIENCED CHEMICAL ENGINEERS  
by DEGREE and SEX  
1996 ACS Starting Salary Survey

	Highest Degree											
	Bachelors			Masters			Doctorate					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	50.4% 125	41.3% 66	46.8% 191	75.0% 12	33.3% 3	60.0% 15	52.2% 12	40.0% 2	50.0% 14			
2	27.4% 68	25.6% 41	26.7% 109	12.5% 2	22.2% 2	16.0% 4	43.5% 10	.0% 0	35.7% 10			
3	14.5% 36	18.1% 29	15.9% 65	12.5% 2	33.3% 3	20.0% 5	4.3% 1	60.0% 3	14.3% 4			
4	3.2% 8	5.0% 8	3.9% 16	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0			
5	2.0% 5	5.6% 9	3.4% 14	.0% 0	11.1% 1	4.0% 1	.0% 0	.0% 0	.0% 0			
6 or 7	2.0% 5	1.9% 3	2.0% 8	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0			
8 or 9	.0% 0	1.3% 2	.5% 2	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0			
10 OR MORE	.4% 1	1.3% 2	.7% 3	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0			
Total	100.0% 248	100.0% 160	100.0% 408	100.0% 16	100.0% 9	100.0% 25	100.0% 23	100.0% 5	100.0% 28			

Table E-4

OFFERS OF FULL-TIME EMPLOYED EXPERIENCED CHEMICAL ENGINEERS  
by DEGREE and SEX  
1996 ACS Starting Salary Survey

	Highest Degree											
	Bachelors			Masters			Doctorate					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	29.2% 35	26.4% 19	28.1% 54	45.5% 10	20.0% 1	40.7% 11	42.1% 8	60.0% 3	45.8% 11	42.1% 8	20.0% 1	37.5% 9
2	32.5% 39	30.6% 22	31.8% 61	40.9% 9	40.0% 2	40.7% 11	42.1% 8	20.0% 1	37.5% 9	42.1% 8	20.0% 1	37.5% 9
3	18.3% 22	22.2% 16	19.8% 38	9.1% 2	40.0% 2	14.8% 4	5.3% 1	20.0% 1	8.3% 2	5.3% 1	20.0% 1	8.3% 2
4	10.0% 12	6.9% 5	8.9% 17	4.5% 1	.0% 0	3.7% 1	5.3% 1	.0% 0	4.2% 1	5.3% 1	.0% 0	4.2% 1
5	7.5% 9	5.6% 4	6.8% 13	.0% 0	.0% 0	.0% 0	5.3% 1	.0% 0	4.2% 1	5.3% 1	.0% 0	4.2% 1
6 or 7	.8% 1	5.6% 4	2.6% 5	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
8 or 9	.8% 1	1.4% 1	1.0% 2	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
10 OR MORE	.8% 1	1.4% 1	1.0% 2	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Total	100.0% 120	100.0% 72	100.0% 192	100.0% 22	100.0% 5	100.0% 27	100.0% 19	100.0% 5	100.0% 24	100.0% 19	100.0% 5	100.0% 24

Table F-1

**ALL CHEMISTRY GRADUATES**  
**by DEGREE and RACE/ETHNICITY**  
**1996 ACS Starting Salary Survey**

	RACE					Total
	American Indian	Asian	Black	White	Other	
<b>BACHELORS</b>						
US Native	100.0%	34.8%	88.8%	96.3%	67.1%	88.6%
	19	103	95	2170	55	2442
US Naturalized	.0%	48.0%	3.7%	1.6%	17.1%	7.1%
	0	142	4	36	14	196
US Permanent Res Visa	.0%	11.8%	5.6%	1.5%	13.4%	3.1%
	0	35	6	34	11	86
Other visa	.0%	5.4%	1.9%	.6%	2.4%	1.2%
	0	16	2	13	2	33
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	19	296	107	2253	82	2757
<b>MASTERS</b>						
US Native	100.0%	6.0%	50.0%	89.1%	33.3%	61.6%
	1	7	5	230	7	250
US Naturalized	.0%	6.9%	10.0%	1.6%	4.8%	3.4%
	0	8	1	4	1	14
US Permanent Res Visa	.0%	16.4%	20.0%	3.1%	19.0%	8.1%
	0	19	2	8	4	33
Other visa	.0%	70.7%	20.0%	6.2%	42.9%	26.8%
	0	82	2	16	9	109
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	1	116	10	258	21	406
<b>DOCTORATE</b>						
US Native	100.0%	2.7%	50.0%	89.1%	52.6%	57.8%
	2	4	7	236	10	259
US Naturalized	.0%	6.1%	14.3%	1.1%	5.3%	3.3%
	0	9	2	3	1	15
US Permanent Res Visa	.0%	42.6%	7.1%	4.2%	26.3%	17.9%
	0	63	1	11	5	80
Other visa	.0%	48.6%	28.6%	5.7%	15.8%	21.0%
	0	72	4	15	3	94
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	2	148	14	265	19	448

Table F-2

CITIZENSHIP OF ALL CHEMISTRY GRADUATES  
by DEGREE and SEX  
1996 ACS Starting Salary Survey

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
US Native	90.2% 1310	86.7% 1144	88.5% 2454	60.0% 132	63.5% 120	61.6% 252	55.9% 160	62.5% 100	58.3% 260
US Naturalized	5.8% 85	8.6% 114	7.2% 199	3.6% 8	3.2% 6	3.4% 14	3.1% 9	3.8% 6	3.4% 15
US Permanent Res Visa	2.9% 42	3.3% 44	3.1% 86	5.5% 12	11.6% 22	8.3% 34	16.4% 47	19.4% 31	17.5% 78
Other visa	1.1% 16	1.4% 18	1.2% 34	30.9% 68	21.7% 41	26.7% 109	24.5% 70	14.4% 23	20.9% 93
Total	100.0% 1453	100.0% 1320	100.0% 2773	100.0% 220	100.0% 189	100.0% 409	100.0% 286	100.0% 160	100.0% 446

Table F-3

**MINORITY CHEMISTRY GRADUATES  
by DEGREE and SEX  
1996 ACS Starting Salary Survey**

Race	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Amer Indian	.6% 9	.7% 9	.7% 18	.5% 1	.0% 0	.2% 1	.4% 1	.6% 1	.5% 2
Asian	9.1% 131	12.9% 171	10.9% 302	28.3% 62	28.2% 53	28.3% 115	33.2% 94	31.9% 51	32.7% 145
Black	2.4% 34	5.5% 73	3.9% 107	2.7% 6	2.1% 4	2.5% 10	4.6% 13	1.3% 2	3.4% 15
Hisp	2.4% 35	2.3% 30	2.3% 65	3.2% 7	2.7% 5	2.9% 12	3.2% 9	.6% 1	2.3% 10
White	83.8% 1209	77.2% 1022	80.7% 2231	63.0% 138	63.3% 119	63.1% 257	54.1% 153	65.0% 104	58.0% 257
Other	1.7% 25	1.4% 18	1.6% 43	2.3% 5	3.7% 7	2.9% 12	4.6% 13	.6% 1	3.2% 14
Total	100.0% 1443	100.0% 1323	100.0% 2766	100.0% 219	100.0% 188	100.0% 407	100.0% 283	100.0% 160	100.0% 443

Table F-4

ALL CHEMICAL ENGINEERING GRADUATES  
by DEGREE and RACE/ETHNICITY  
1996 ACS Starting Salary Survey

	Bachelors						Total
	Race						
	Amer Indian	Asian	Black	Hisp	White	Other	
US Native	100.0% 5	38.1% 40	93.5% 29	73.3% 11	97.3% 785	62.5% 10	89.9% 880
US Naturalized	.0% 0	37.1% 39	3.2% 1	13.3% 2	1.5% 12	12.5% 2	5.7% 56
US Permanent Res Visa	.0% 0	14.3% 15	.0% 0	6.7% 1	1.2% 10	18.8% 3	3.0% 29
Other visa	.0% 0	10.5% 11	3.2% 1	6.7% 1	.0% 0	6.3% 1	1.4% 14
Total	100.0% 5	100.0% 105	100.0% 31	100.0% 15	100.0% 807	100.0% 16	100.0% 979

Continued...



Table F-4 Continued...

**ALL CHEMICAL ENGINEERING GRADUATES**  
**by DEGREE and RACE/ETHNICITY**  
**1996 ACS Starting Salary Survey**

	Race					Total
	Asian	Black	Hisp	White	Other	
<b>MASTERS</b>						
US Native	5.7% 2	100.0% 1	50.0% 1	89.8% 53	66.7% 2	59.0% 59
US Naturalized	8.6% 3	.0% 0	.0% 0	1.7% 1	.0% 0	4.0% 4
US Permanent Res Visa	14.3% 5	.0% 0	50.0% 1	5.1% 3	.0% 0	9.0% 9
Other visa	71.4% 25	.0% 0	.0% 0	3.4% 2	33.3% 1	28.0% 28
Total	100.0% 35	100.0% 1	100.0% 2	100.0% 59	100.0% 3	100.0% 100
<b>DOCTORATE</b>						
US Native	2.7% 1	100.0% 1	.0% 0	86.0% 37	.0% 0	47.0% 39
US Naturalized	2.7% 1	.0% 0	.0% 0	2.3% 1	.0% 0	2.4% 2
US Permanent Res Visa	24.3% 9	.0% 0	.0% 0	4.7% 2	.0% 0	13.3% 11
Other visa	70.3% 26	.0% 0	100.0% 1	7.0% 3	100.0% 1	37.3% 31
Total	100.0% 37	100.0% 1	100.0% 1	100.0% 43	100.0% 1	100.0% 83

Table F-5

**CITIZENSHIP OF ALL CHEMICAL ENGINEERING GRADUATES  
by DEGREE and SEX  
1996 ACS Starting Salary Survey**

	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
US Native	90.2% 569	89.4% 319	89.9% 888	58.9% 43	58.6% 17	58.8% 60	45.3% 29	55.6% 10	47.6% 39
US Naturalized	5.1% 32	7.0% 25	5.8% 57	1.4% 1	10.3% 3	3.9% 4	1.6% 1	5.6% 1	2.4% 2
US Permanent Res Visa	3.2% 20	2.5% 9	2.9% 29	8.2% 6	10.3% 3	8.8% 9	12.5% 8	16.7% 3	13.4% 11
Other visa	1.6% 10	1.1% 4	1.4% 14	31.5% 23	20.7% 6	28.4% 29	40.6% 26	22.2% 4	36.6% 30
Total	100.0% 631	100.0% 357	100.0% 988	100.0% 73	100.0% 29	100.0% 102	100.0% 64	100.0% 18	100.0% 82

Table F-6

**MINORITY CHEMICAL ENGINEERING GRADUATES  
by DEGREE and SEX  
1996 ACS Starting Salary Survey**

Race	Bachelors			Masters			Doctorate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Amer Indian	.6% 4	.3% 1	.5% 5	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
Asian	10.8% 68	11.4% 40	11.0% 108	34.7% 25	37.9% 11	35.6% 36	49.2% 31	27.8% 5	44.4% 36
Black	2.4% 15	4.6% 16	3.2% 31	.0% 0	3.4% 1	1.0% 1	1.6% 1	.0% 0	1.2% 1
Hisp	1.0% 6	2.6% 9	1.5% 15	1.4% 1	3.4% 1	2.0% 2	.0% 0	5.6% 1	1.2% 1
White	83.2% 524	80.1% 281	82.1% 805	61.1% 44	51.7% 15	58.4% 59	47.6% 30	66.7% 12	51.9% 42
Other	2.1% 13	1.1% 4	1.7% 17	2.8% 2	3.4% 1	3.0% 3	1.6% 1	.0% 0	1.2% 1
Total	100.0% 630	100.0% 351	100.0% 981	100.0% 72	100.0% 29	100.0% 101	100.0% 63	100.0% 18	100.0% 81





# American Chemical Society

OFFICE OF THE  
EXECUTIVE DIRECTOR

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

Summer, 1996

Dear Colleague:

Congratulations on your degree. Each year, the American Chemical Society conducts a mail survey of persons who have recently earned degrees in chemistry or chemical engineering. The published results, which include information about employment, salaries and graduate plans, are useful to the profession, especially to graduates beginning their careers and future graduates.

Your participation is an important service to your colleagues and the profession. As you know, a high response rate is needed to assure accurate results. Please take a few minutes now to complete the questionnaire and return it in the enclosed business reply envelope. Your responses are strictly confidential. Your name and address will not be coupled with the information you provide. A code is included only to enable us to cross your name off our follow-up list once we have received your completed questionnaire. The information you provide will be combined with that from other respondents and only the aggregate data will be available.

The preliminary findings of the survey are scheduled to be reported in October in the *Chemical & Engineering News*. The final results of the survey will be published in an extensive report at the end of the year. Also throughout the next year, employment and salary information on new graduates will appear in workforce bulletins at our Web site: <http://www.acs.org>.

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

Sincerely,

A handwritten signature in cursive script that reads "John K. Crum".

John K Crum

JKC/mwj

Enclosure



AMERICAN CHEMICAL SOCIETY  
Survey of Starting Salaries and Employment Status of 1996  
Chemistry and Chemical Engineering Graduates

Today's date:   -   -96  
Month Day

**Section A. Education Information**


**1. What is the highest degree you have received?**

- 1  Bachelor's  
2  Master's  
3  Doctorate

**2. What date was your highest degree granted?**

-    
Month Year

**3. What is the field of your highest degree?**

- 01  Chemical engineering  
02  Biochemical engineering  
03  Biochemistry  
04  General chemistry  
05  Analytical chemistry  
06  Inorganic chemistry  
07  Organic chemistry  
08  Physical chemistry  
09  Polymer chemistry  
10  Other chemistry  
11  Other - Specify 

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

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

**c. The highest degree offered by your department is:**

- 1  BS  
2  MS  
3  PhD

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

\_\_\_\_\_

**e. Is the school an historically or predominantly black institution?**

- 1  Yes  
2  No

**f. Is the school a traditionally women's institution?**

- 1  Yes  
2  No

**5. In your chemistry classes, did you have the opportunity to:**

**a. Work in teams?**

- 1  Yes  
2  No

**b. Work on independent research projects?**

- 1  Yes  
2  No

6. While in college, did you participate in:

a. Chemistry/Chemical engineering cooperative program?

- 1  Yes  
2  No

b. Internship?

- 1  Yes  
2  No

c. Work or study abroad?

- 1  Yes  
2  No

7. What is your grade point average? [Use A=4.00; B=3.00; C=2.00]

In your major \_\_\_\_\_

Overall \_\_\_\_\_

8. Will you pursue advanced studies in the fall of 1996?

- 1  Yes, full-time  
2  Yes, part-time  
3  No

a. If yes, what is the field?

- 01  Chemistry  
02  Other physical sci., computer sci., math  
03  Chemical/biochemical engineering  
04  Other engineering  
05  Biochemistry  
06  Life science  
07  Medicine  
08  Dentistry  
09  Pharmacy, pharmacology  
10  Business management  
11  Education  
12  Law  
13  Other - Specify

↓  
[ ]

Section B. Employment Information

9. What is your current employment status?

- 1  Accepted or continuing full-time employment (excluding summer employment)  
2  Accepted a graduate assistantship, fellowship, or postdoctoral fellowship  
3  Part-time employment  
4  Temporary/summer employment  
5  Not employed

a. If not continuing full-time employment, are you:

- 1  Seeking full-time, year-round employment  
2  Not seeking full-time, year-round employment

PLEASE ANSWER THE EACH OF THE FOLLOWING QUESTIONS ABOUT YOUR CURRENT EMPLOYMENT STATUS:

10. Are you working part-time because suitable full-time employment was not available?

- 1  Yes  
2  No  
3  Not Applicable

11. Are you working in a temporary position because a permanent position was not available?

- 1  Yes  
2  No  
3  Not Applicable

12. The position is in my field or is closely related to my field.

- 1  Strongly Agree  
2  Agree  
3  No Opinion  
4  Disagree  
5  Strongly Disagree

13. The position is commensurate with my education/training.

- 1  Strongly Agree  
2  Agree  
3  No Opinion  
4  Disagree  
5  Strongly Disagree



**14. My position is professionally challenging.**

- 1  Strongly Agree  
 2  Agree  
 3  No Opinion  
 4  Disagree  
 5  Strongly Disagree

**15. The position is similar to what I expected to be doing when I began my doctoral program.**

- 1  Strongly Agree  
 2  Agree  
 3  Not Applicable  
 4  Disagree  
 5  Strongly Disagree

**16. I am currently actively looking for another position.**

- 1  Yes  
 2  No

IF YOU ARE PART-TIME EMPLOYED, HAVE TEMPORARY OR SUMMER EMPLOYMENT, OR ARE NOT EMPLOYED, PLEASE GO TO SECTION C.

**17. What is your base annual salary from your principal job?**

\$ \_\_\_\_\_ per year

IF YOU HOLD AN ASSISTANTSHIP OR FELLOWSHIP, PLEASE GO TO SECTION C.

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

Specify number \_\_\_\_\_

**19. How much professional or technical work experience have you had prior to graduation?**

- 1  Less than 12 months or none  
 2  12 to 36 months  
 3  More than 36 months

**20. What is the one specialty most related to your job?**

- 1  Chemical engineering  
 2  Chemistry (including biochemistry)  
 3  Other - Specify

\_\_\_\_\_

**21. What is the one category that best describes your employer? (Please mark one)**

- 01  Self-employed  
 02  Private industry  
 03  College or university  
 04  Medical school  
 05  Elementary/secondary school  
 06  Federal government (civilian)  
 07  Military  
 08  State or local government  
 09  Hospital or independent laboratory  
 10  Other - Specify

\_\_\_\_\_

**22. If you are employed in private industry, what is the one category that best describes the type of industry?**

- 01  Non-manufacturing  
 Manufacturing company primarily involved in:  
 02  Aerospace  
 03  Basic chemicals  
 04  Specialty chemicals  
 05  Agricultural chemicals  
 06  Electronics  
 07  Petroleum/natural gas  
 08  Pharmaceutical/personal care  
 09  Plastics  
 10  Other manufactures

**23. What is the primary work function that best describes your job? (Please check one)**

- 1  Teaching  
 2  Management or administration  
 3  Basic research  
 4  Applied research, Development or Design  
 5  Production/Quality control  
 6  Professional services (e.g., consulting)  
 7  Other - Specify

\_\_\_\_\_

## 24. Is your job classified as a:

- 1  Chemical or engineering technician  
 2  Scientist or engineer  
 3  Manager or administrator  
 4  Other - Specify

\_\_\_\_\_

## 25. Employer's approximate number of employees (total for the whole organization):

- 1  Less than 500  
 2  500 to 2,499  
 3  2,500 to 9,999  
 4  10,000 to 24,999  
 5  25,000 or more

## 26. Geographic location of employment. Please give the first three digits of zip code:

\_\_\_\_\_

## 27. Which was the one most effective initial job search method? (Please check one)

- 01  Faculty advisor(s)  
 02  Informal channel, e.g., colleague or friend  
 03  Newspaper advertisement  
 04  Newsletter/magazine/journal, please specify: \_\_\_\_\_  
 05  Placement service, please specify: \_\_\_\_\_  
 06  Employment agency  
 07  Met employer through former job or position  
 08  Sent unsolicited vita  
 09  Received unsolicited offer  
 10  Electronic resource, please specify \_\_\_\_\_  
 11  Other - Specify

\_\_\_\_\_

## Section C. Other Background Information

## 28. What is your sex?

- 1  Male  
 2  Female

## 29. What is your citizenship or visa status?

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

## 30. What is your age?

Years

## 31. Are you Hispanic?

- 1  Yes  
 2  No

## a. If yes, are you:

- 1  Mexican American  
 2  Puerto Rican  
 3  Other Hispanic - Please Specify

\_\_\_\_\_

## 32. What is your racial background?

- 1  American Indian or Alaskan Native  
 2  Asian or Pacific Islander  
 3  Black  
 4  White

**Your comments will be appreciated.**

## ACS CAREER SERVICES PUBLICATIONS

**Salaries:** The Society annually surveys the ACS membership, gathering detailed information on member chemists and chemical engineers. The reports based on this survey contain statistical tables describing the respondents' employment status, employer, work function and specialty, salaries, and demographic characteristics. Reports are available for each year from 1973 through the current year.

**Starting Salaries:** ACS also surveys new graduates in chemistry and chemical engineering each year, and publishes reports detailing the graduates' employment status, post-graduation plans, starting salaries and other employment and demographic characteristics. Reports are available for each year from 1975.

**Women Chemists:** Every five years, the Society produces a supplemental report on the economic status of women in the ACS. Reports are available for 1975, 1980, 1985, 1990, and a new edition for 1995 will be available in spring 1996.

**Current Trends** provides information on technology, business, economic, R&D, and hiring trends in the corporate, government, and academic worlds. Updated every five years.

**Employer Mailing List** is the mailing list, arranged by state, used to solicit employers for ACS employment services. It is arranged by state, and can be purchased for \$10. Use of this mailing list is restricted to personal use only.

**ACS Career, Employment and Professional Resources: A Catalog of Publications, Programs & Services.** This brochure lists all ACS career resources for high school and college students exploring career options; professionals seeking employment in chemistry and allied fields; and individuals facing the challenges of career development, career changes, and retirement.

**For prices and ordering information, please call or write:**

ACS Membership Service Center  
4000 Olson Memorial Highway  
PO Box 9389  
Minneapolis, MN 55422-9389  
Phone: 800/451-9190 or 612/520-6798  
Fax: 612/520-6706

## ON-LINE CAREER SERVICE EMPLOYMENT PROGRAMS

Department of Career Services information on publications and programs is available through the ChemCenter. Visit the "Professional Services" section at ChemCenter to view employment information for ACS members. <http://www.ChemCenter.org>.

**JOB BANK.** The ACS Job Bank includes classified and display ads from the two most recent issues of *Chemical & Engineering News (C&EN)*. The ACS Job Bank is updated weekly. Links to other online job banks and World Wide Web pages of major companies are also included. The Job Bank is available on the ACS Website.

**C&EN Situation Wanted Ads.** Employed ACS members and student affiliates may place an ad in C&EN at \$6.60 a line per insertion, no minimum charge. Unemployed ACS members, student affiliates, and retired members may place free situations wanted ads; certain restrictions apply.

