STARTING $ALARIE$

Of Chemists and Chemical Engineers

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

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AMERICAN CHEMICAL SOCIETY
DEPARTMENT OF CAREER SERVICES

STARTING SALARIES OF CHEMISTS & CHEMICAL ENGINEERS

1999

Analysis of the
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 Office of Society Services

CONTENTS

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 1999 new graduate study. Summaries of the survey findings were published in the March 14, 2000 issue of *Chemical & Engineering News* and the September, 2000 issue of *Today's Chemist at Work*.

Mary Jordan and Pamela Steiner conducted this year's survey and provided the tables for this report. Bruce Millar analyzed the data and wrote the summary on the following pages. Ms. Steiner formatted and edited the report. Special thanks go to the more than 6,300 graduates who took the time to respond to this year's survey.

Jean A. Parr, Head
Department of Career Services

SUMMARY OF FINDINGS

The booming U.S. economy continues to show positive effects for most new chemistry graduates. For the third year in a row, new grads showed improved salaries and strong figures in employment status. The 1999 job market saw the new MS chemists play catchup. The employment status of MS chemists who graduated between July 1998 and the end of June 1999 showed considerable improvement over previous years in the proportion that found full-time employment. Fewer MS chemists pursued additional graduate study, while the unemployment rate remained close to last year's figures. The employment status of the 1999 Ph.D.s was slightly tighter than their counterparts from the Class of 1998 with a small decline in full-time positions and a small increase in those who took postdoc positions.

SALARIES FOR THE CLASS OF 1999: Means and Median

Mean salaries represent the average starting salary and are subject to distortion usually due to some very high individual salaries. They are, however, used in statistical analysis. 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.

Median starting salaries for new graduates are a summary measure. Thus, any trends must be seen as a combination of factors affecting the responding population. Some of these factors are: regional differences in pay structures; characteristics of the new graduates, the type of employer, the size of employer, the work function performed; and the type of industry that hires a large proportion of new graduates.

Overall, chemistry and chemical engineering graduates experienced gains in median starting salaries between 1998 and 1999. These gains across degrees in both disciplines outpaced inflation.[1] This news must be tempered with the fact that mean (average) starting salaries in chemistry did not show as high an increase as the median starting salaries at Ph.D. levels, meaning that while there were more higher salaries, there was also a persistent cadre of relatively low salaries. [2]

In 1999, new chemistry graduates generally saw substantial increases in overall starting salaries from 1998. The mean salary for inexperienced B.S. chemists was $31,299 this year, an increase of 6.4 percent, or double the percentage increase notched from 1997 to 1998 (see table 1).[3] The median starting salary also grew from $29,500 in 1998 to $30,000 this year, an increase of 1.7 percent, but from 1997 to 1999 rose 7.1 percent from $28,000 to $30,000. The mean starting salary for M.S. chemists increased at an even faster rate climbing from $38,183 to $41,568, for a growth of 8.9 percent.

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[1] The Consumer Price Index rose 2.6 percent from October 1998 to October 1999. It is used as an approximation for inflation.

[2] Generally means of salaries are higher than medians because of the influence of very high salaries. In instances where salaries are somewhat close to the median at the high end and the persistence of relatively low salaries, the mean can be lower than the median. This occurs more often with chemical engineering new graduates than with chemistry new graduates because they usually have a narrower range of starting salaries, tending to cluster toward a high end, with few or no very high salaries, while still having some relatively low starting salaries.

[3] Inexperienced chemists and chemical engineers are those who have gone to work with less than twelve months prior technical experience – the starting professional.

The median M.S. starting salaries rose 9.1 percent from $38,500 to $42,000. The news on starting salaries for inexperienced Ph.D. chemists was good for the third year in a row. The mean starting salaries for Ph.D. chemists rose by 2.4 percent from $56,574, up from $55,224. The median salary for inexperienced Ph.Ds rose to $61,000, a 2.9 percent increase over the $59,300 median in 1998.

Inexperienced chemical engineers also experienced higher mean and median salaries at all degree levels (see table 2). But, in percentage terms, the engineers' increases were about half as large as those for inexperienced chemists. The 1999 mean starting salary for B.S. chemical engineers was $44,924, up 3.5 percent from $43,388 in 1998. The salary in current dollars outstripped an inflation adjustment by less than one percent during that period. The mean starting salary for inexperienced M.S. chemical engineers was $51,180, increasing by 4.0 percent from $49,223 in 1998, and the mean starting salary for Ph.D. chemical engineers was $66,368, up by 4.1 percent from $63,737 in 1998.

The median salaries for chemical engineers also rose at a rapid pace. The inexperienced bachelor's chemical engineers' median starting salary increased by 4.3 percent to $47,000 from $45,000 the prior year. Inexperienced masters increased by 4.4 percent ($49,800 to $52,000) and the doctorates increased by 3.8 percent ($65,000 to $67,700).

Table 1 shows mean (average) starting salaries paid to inexperienced chemistry graduates for 1999, including 1998 figures, and gives additional information concerning the change among salaries within each group. Table 2 presents corresponding information for chemical engineers.

Table 1. 1999 MEAN SALARIES FOR INEXPERIENCED CHEMISTRY GRADUATES

$31,299 (up from $29,422) for the B.S., up 6.4%, or in constant dollars up 3.8%
$41,568 (up from $38,183) for the M.S., up 8.9%, or in constant dollars up 6.37%
$56,574 (up from $55,224) for the Ph.D., up 2.4%, or in constant dollars down 0.2%

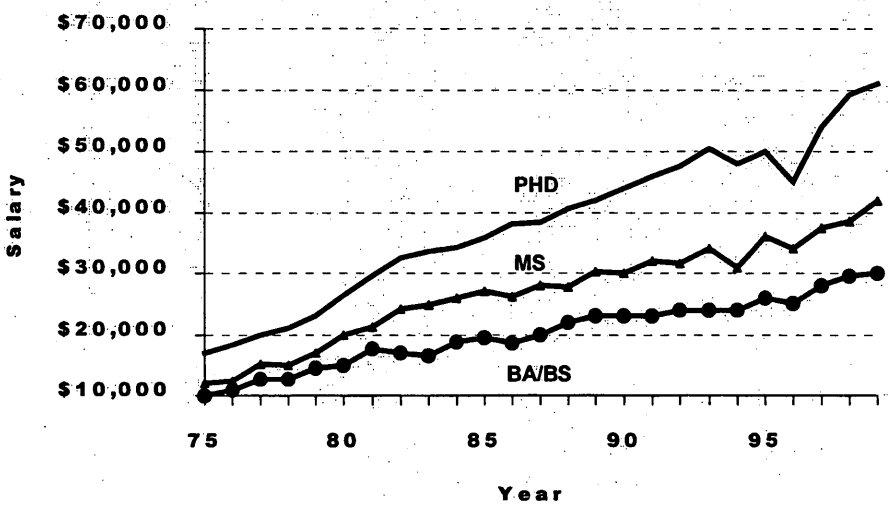
Table 2. 1999 MEAN SALARIES FOR INEXPERIENCED CHEMICAL ENGINEERING GRADUATES

$44,924 (up from $43,388) for the B.S., 3.5%, or in constant dollars up 0.9%
$51,180 (up from $49,223) for the M.S., up 4%, or in constant dollars up 1.4%
$66,368 (up from $63,737) for the Ph.D., up 4.1%, or in constant dollars up 1.5%

While Table 1 and Table 2 show the changes in means between 1998 and 1999, the balance of this report discusses the salaries of inexperienced chemists and chemical engineers in terms of their medians. The trends in median starting salaries from 1975 to the present for inexperienced chemists and chemical engineers are shown in Figures 1 and 2 and Table 3.

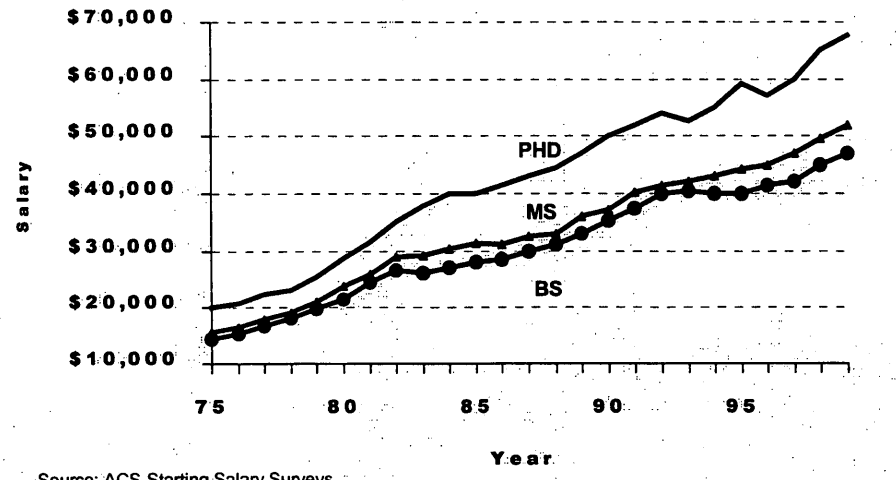
Figure 1 shows that after uneven years in the mid-1990s for all three degrees and a decade of stagnant or no growth for bachelor's chemists, all degrees have shown strong rebounds beginning with the Class of 1997. On the other hand, salaries for chemical engineers fluctuated at the doctorate level in the mid-1990s. But, overall, chemical engineers have posted relatively consistent starting salary increases since 1975.

Figure 1. Median Starting Salaries of Inexperienced Chemists (in current dollars, 1975-99)



Source: ACS Starting Salary Surveys

Figure 2. Median Starting Salaries of Inexperienced Chemical Engineers (in current dollars, 1975-99)



Source: ACS Starting Salary Surveys
Note: 1994 Chemical Engineering figures extrapolated due to lack of data.

Table 3
Median Starting Salaries for Inexperienced Graduates, 1975-1999
(by Degree and in 1000s of Current Dollars)

Year	Chemists			Chemical Engineers		
	B.S.	M.S.	PH.D	B.S.	M.S.	PH.D
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
97	28.0	37.5	54.0	42.0	47.0	60.0
98	29.5	38.5	59.3	45.0	49.8	65.0
99	30.0	42.0	61.0	47.0	52.0	67.7

Overall, chemists with bachelor's degrees show the least proportional and numerical increase in starting salaries since 1975. Even the vast improvement in starting salaries shown the past several years does not keep pace with the increases shown for M.S. and Ph.D. chemists. From 1989 until 1997, new bachelor's chemists were losing ground against inflation. Conversely, chemical engineers with bachelor's degrees generally showed larger annual increases and relatively constant increases in starting salaries.

Chemists and chemical engineers with doctorates displayed a similar pattern of increasing starting salaries: they continued to show greater proportional increases than chemists and chemical engineers with other degrees. Chemical engineers started higher in 1975 and have continually increased at greater rates than chemists. However, the 1.2 to 1 ratio of salaries between the groups in 1975 has declined to 1.1 to 1 for salaries of chemical engineering Ph.D.s versus chemistry Ph.D.s.

Tables 4 and 5 show the range of starting salaries for inexperienced new graduates in chemistry and chemical engineering. By comparing these tables, an interesting phenomenon becomes apparent — while chemical engineers consistently have higher median and mean starting salaries, chemists' starting salaries show a wider range around the central measures. This is reflected by the larger standard deviations for chemists. This phenomenon also holds true for experienced chemists: chemists tend to have salaries that are more diverse, higher and lower, than chemical engineers throughout their careers.

Table 4. RANGES OF STARTING SALARIES OF INEXPERIENCED FULL-TIME EMPLOYED: CHEMISTRY GRADUATES by Degree: 1998 and 1999

DEGREE LEVEL Salaries	Bachelor's		Master's		Doctorate	
	1998	1999	1998	1999	1998	1999
90th Percentile	$38,500	42,800	48,800	52,350	69,700	70,000
75th Percentile	34,000	36,000	45,000	49,425	64,500	67,500
50th Percentile	29,500	30,000	38,500	42,000	59,280	61,000
25th Percentile	24,500	25,000	32,000	35,000	45,500	45,000
10th Percentile	20,800	22,000	26,800	28,000	35,000	36,000
Mean	29,422	31,299	38,183	41,568	55,224	56,574
Count	832	843	111	122	205	170
Standard Deviation	7,409	8,632	8,290	9,904	12,722	13,504

Table 5. RANGES OF STARTING SALARIES OF INEXPERIENCED FULL-TIME EMPLOYED: CHEMICAL ENGINEERING GRADUATES by Degree: 1998 and 1999

DEGREE LEVEL Salaries	Bachelor's		Master's		Doctorate	
	1998	1999	1998	1999	1998	1999
90th Percentile	49,416	51,500	62,200	58,000	71,940	76,200
75th Percentile	47,500	49,500	53,063	56,000	69,300	70,110
50th Percentile	45,000	47,000	49,750	52,000	65,000	67,700
25th Percentile	40,000	42,000	43,500	45,000	60,300	60,000
10th Percentile	35,000	36,000	38,950	40,000	55,000	54,600
Mean	43,388	44,924	49,223	51,180	63,737	66,368
Count	416	601	26	51	52	85
Standard Deviation	6,164	6,672	8,044	6,893	8,170	9,002

SALARY FACTORS

As stated previously, salaries vary by the *type* and *characteristics* of the employer as well as the characteristics of the graduates. For instance, median starting salaries are typically higher in private industry and lower in educational institutions. The median salary for new chemistry Ph.D.'s was $64,000 for those employed full-time in industry, (i.e., the private sector), and $36,500 for those employed in colleges or universities. For inexperienced B.A./B.S. and M.S. chemists with new jobs in industry, the median salaries were $32,150 and $44,000, respectively. New bachelor's chemists who became elementary or secondary school teachers had a median starting salary of $28,000, up more than 3 percent from 1998. More than 60 percent of new bachelors' who went to work found jobs in industry. For masters' and Ph.D.s, the figure exceeded 70%.

More than 80 percent of chemical engineers are employed in private industry. Thus, their overall figures are closely aligned with the industrial salaries. In 1999, the new inexperienced chemical engineering doctorate received a starting salary of $68,000 in industry, while the B.S. and M.S. industrial chemical engineers had medians of $47,350 and $52,000, respectively.

In industry, larger employers generally pay more than smaller ones. In fact, one of the strongest predictors of starting salaries in industry is the *size of the company.* Bachelor's chemists employed in larger firms (25,000 or more employees) started at about $12,000 more than those employed in small firms (less than 50 employees). New bachelor's chemists were almost as apt to be employed in firms with fewer than 500 employees as in larger firms. New M.S. chemists in industry were apt to work at all sizes of firms, but the employer-size factor affects them also, with M.S. chemists starting at $40,000 at small firms and $49,400 at large firms. Ph.D.s tended to work at larger firms, where their starting salaries were $67,200, while the median for smaller companies was $56,500.

For chemical engineers, the higher the degree, the more apt they were to work in larger firms. Very few chemical engineers with master's and doctorate degrees found employment with firms with fewer than 500 employees. Bachelor's chemical engineers were newly employed in firms of all sizes, but the majority were working in larger firms with more than 500 employees. As with chemists, the pay differed according to the size of the company. The bachelor's chemical engineers' salaries differed by about $8,500 between the smallest firms and the largest firms (less than 50 employees and more than 25,000 employees).

Regional differences in pay tend to be tied to the type and size of employers in the region (for a list of regions see page 17). Salaries for new bachelor's chemistry graduates were highest in the Middle Atlantic, East North Central, New England and Pacific regions ($30,000 to $32,500), and lowest in the East South Central and Mountain regions ($25,000 to 26,750, respectively). Median salaries for new B.S. chemical engineers were highest for those employed in the West South Central and East South Central regions ($49,000 and $48,000, respectively) and lowest in the Mountain region ($42,000). Proportionally, bachelor's chemical engineers were employed nationwide, with an edge to the eastern U.S. Both for those with new masters and doctorates in chemistry, the employment distribution and higher starting salaries were generally found in the eastern regions of the U.S. On the other hand, both rates of employment and starting salaries continued to rise in the Pacific region.

Generally speaking, bachelor's chemists receive higher starting salaries if they received departmental *certification from an ACS-approved program.* The overall median salary for inexperienced chemists who were certified was $30,750, compared with $30,000 for chemists

without certification. The median salary for inexperienced chemists who had been certified and had an intern experience was $34,350 opposed to the $30,000 for those who did not have both experiences.

It appears that individuals who have accumulated experience in more than one of five extra activities to their degrees may have an edge in the starting salaries they receive. These activities include certification to ACS, independent research, co-op programs, internships and overseas study.

However, only in congress with at least one other of these experiences did B.S. graduates tend to realize a higher median salary. In other words, the mere fact that an individual signed up for any one of them did not necessarily spell an increase in their starting salary. But these factors were correlated: the student who participated in one tended to participate in more than one. It was the combination that produced the effective increase in starting salaries.

This occurrence of students having more than one extra experience tends to support the idea that these experiences are also indicators for other measures such as initiative, faculty-student interactions, etc. Grades, traditionally not a strong indicator of starting salaries for chemists, this year showed about a $2,000 spread around the $30,000 overall median for BS chemists with grade averages between "A"s and "B"s or "C"s.

The correlation between grades and starting salaries traditionally has been much stronger among those with a bachelor's in chemical engineering. The higher a B.S. chemical engineer's grade point average, both in the major and overall, the higher the starting salary. For example, a chemical engineer with a 'C' average in his or her major started at a $41,000 salary, while with an 'A' average, it was $49,625.

GRADUATE AND POSTDOC STIPENDS

Bachelor's and master's graduates in chemistry who were on graduate assistantships or fellowships at a university typically received about $16,000. Stipends for academic postdoctoral fellowships rose to about $26,300. On the other hand, chemistry postdoctoral fellows earned a median salary of $40,000 in both industry and government.

Chemical engineering graduate students received a median stipend of $18,000 at the bachelor's and $16,500 at the master's level and $30,000 for Ph.D. graduates at the academic postdoctoral positions. Chemical engineering postdoctoral fellows in industry and government started at $44,000 and $41,000 respectively.

EMPLOYMENT OF BACHELOR'S CHEMISTS AS TECHNICIANS

The starting job title for a chemist makes a difference. About 30 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 employed in other positions. The median salary of bachelor's chemistry graduates employed in industry as technicians was $28,000 whereas the median salary of those employed as scientists or in management was $33,000. For the chemical engineering graduate with a bachelor's degree, the difference was far less significant between those employed as technicians and those employed as engineers, with technicians starting at $46,000 and engineers starting at $47,500.

POSTGRADUATION EMPLOYMENT STATUS

New B.A./B.S. chemistry graduates showed marked improvement from 1998 in their unemployment rates and a slight increase in the proportion who opted for further study in the fall of 1999 (see table 6).

Furthermore, the proportion of new chemistry graduates heading for grad school fell in 1999. For the first time on record, the percent that planned any further study in chemistry or biochemistry fell below 20 percent (see figure 4). In 1998, the proportion of new chemistry grads heading for grad school was 37 percent. Temporary placements were also lower for all chemistry degrees, as were part-time statuses.

Table 6

POSTGRADUATION STATUS OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: October 11, 1999

Major and Employment Status	Bachelor's	Master's	Doctorate
CHEMISTRY			
Full-time employed:			
Permanent	35.9%	52.9%	42.9%
Temporary	9.8%	6.6%	5.9%
Part-Time employed:			
Permanent	0.8%	0.2%	0.3%
Temporary	2.7%	2.0%	1.2%
Graduate student, postdoc	43.5%	31.3%	45.4%
Unemployed and seeking employment	4.9%	5.3%	2.4%
Unemployed and not seeking employment	2.5%	1.8%	1.8%
TOTAL	100%	100%	100%
Unemployment as of the week of 10/11/2000	4.9%	5.3%	2.4%
Number of responses	3463	454	658
CHEMICAL ENGINEERING			
Full-time employed:			
Permanent	71.3%	64.5%	69.6%
Temporary	4.4%	2.4%	1.6%
Part-Time employed:			
Permanent	0.4%	0.6%	0.5%
Temporary	0.9%	0.0%	1.6%
Graduate student, postdoc	15.0%	26.0%	22.0%
Unemployed and seeking employment	7.3%	5.3%	2.1%
Unemployed and not seeking employment	0.8%	1.2%	2.6%
TOTAL	100%	100%	100%
Unemployment as of the week of 10/11/2000	7.3%	5.3%	2.2%
Number of responses	1364	169	191

POSTDOCTORAL FELLOWSHIPS

The proportion of new Ph.D.s 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. On the other hand, a decrease can indicate an improved market. This year, the proportion of Ph.D. chemists accepting postdoctoral fellowships was again close to 45 percent. The continuing strong number of chemists who seek postdoc positions likely speaks to the interest of employers, especially in the pharmaceutical area and biochemistry, for chemists with postdoctoral experience. Some professional chemistry positions require postdoctoral experience, such as academic tenure-track teaching and research positions in graduate degree-granting departments and, less often, industrial research.

Very few chemical engineering bachelor's graduates (21 percent) go on to graduate school and few Ph.D. graduates (22 percent) take postdoc positions.

PLANS FOR ADVANCED STUDY

Historically, between 60 percent and 65 percent of bachelor's chemistry graduates planned some graduate study in the fall. That dynamic began to change in the mid-1990s when new chemistry graduates began going into the job market in greater proportion and in greater numbers, with no immediate plans for further study.

A summary of the plans of 1999 graduates appears in Tables 7 and 8. Table 7 shows the fall plans for 1999 bachelor's chemists and chemical engineers. The proportion of new chemistry bachelor's who planned to continue full-time studies in the fall remained low in 1999, with only 44 percent planning to study full-time and 6 percent planning to study part-time in the fall. The majority of bachelor's in chemical engineering, also shown in Tables 7 & 8, opted for employment and had no plans for any graduate study: Fifteen percent of them planned to study full-time and only 6 percent planned to study part-time in the fall of 1999.

For those who had plans for study in the fall, bachelor's chemists were most apt to continue in chemistry or a health-related professional program. New bachelors in chemical engineering mainly continued in some engineering field, most often chemical or biochemical engineering.

Figure 3 shows the dynamic shift that has occurred for B.S. chemists since the mid-1990s: the proportion of new graduates opting for any graduate plans continues to decline, while the proportion opting to enter directly into the workforce continues to grow.

Table 7

PLANS FOR FURTHER STUDY OF BACHELOR'S CHEMISTRY & CHEMICAL ENGINEERING GRADUATES: FALL 1999

Plans	Chemistry	Chemical Engineering
Total further studies	49.0%	37.0%
Full-time	43.5%	31.3%
Part-time	5.5%	5.7%
No plans for further studies	51.0%	63.0%
Total*	100.0	100.0
Number of responses	3463	454

Table 8

FIELDS OF STUDY OF BACHELOR'S CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES WHO PLAN FURTHER STUDIES: FALL 1999

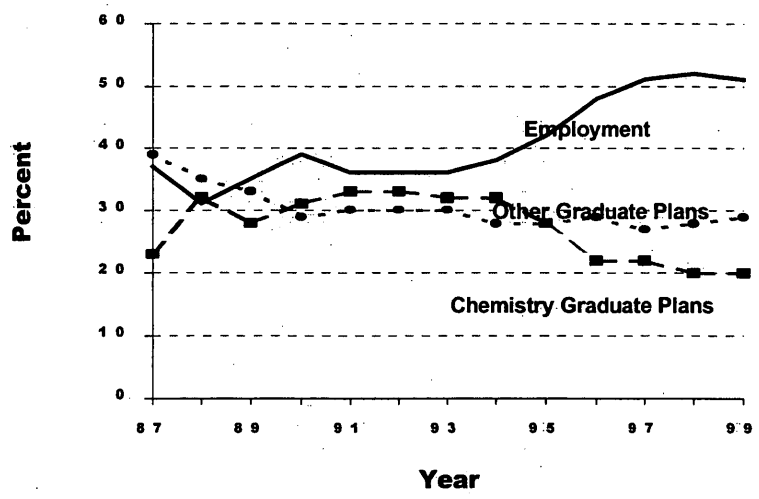
Plans	Chemistry	Chemical Engineering
FULL-TIME STUDY		
Chemistry or biochemistry	41.1%	3.5%
Chemical or biochemical engineering	1.5%	57.8%
Other engineering	1.0%	8.3%
Physical science	1.3%	1.5%
Life science	1.9%	1.0%
Medicine, dentistry, or pharmacy	33.9%	11.8%
Business or management	0.4%	2.0%
Education	2.7%	1.0%
Law	2.5%	5.4%
All others	13.7	7.8%
Total*	100.0	100.0
Number of responses	1,507	205
PART-TIME STUDY		
Chemistry or biochemistry	33.7%	2.6%
Chemical or biochemical engineering	4.2%	24.7%
Other engineering	1.1%	14.3%
Physical science	3.2%	9.0%
Life science	2.6%	-
Medicine, dentistry, or pharmacy	9.0%	2.6%
Business or management	13.7%	35.1%
Education	10.0%	1.3%
Law	0.5%	-
All others	22.1%	10.4%
Total*	100.1	100.1
Number of responses	190	80

***Any deviation from 100 is due to rounding**

THE CHANGING FALL PLANS OF BACHELOR'S CHEMISTS

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 (see figure 3). However, that pattern changed in 1995 when an increasing proportion of new grads went directly into the job market without a graduate degree.

Figure 3. Post-Graduation Plans of BS / BA Chemistry Graduates



Source: ACS New Graduate Surveys

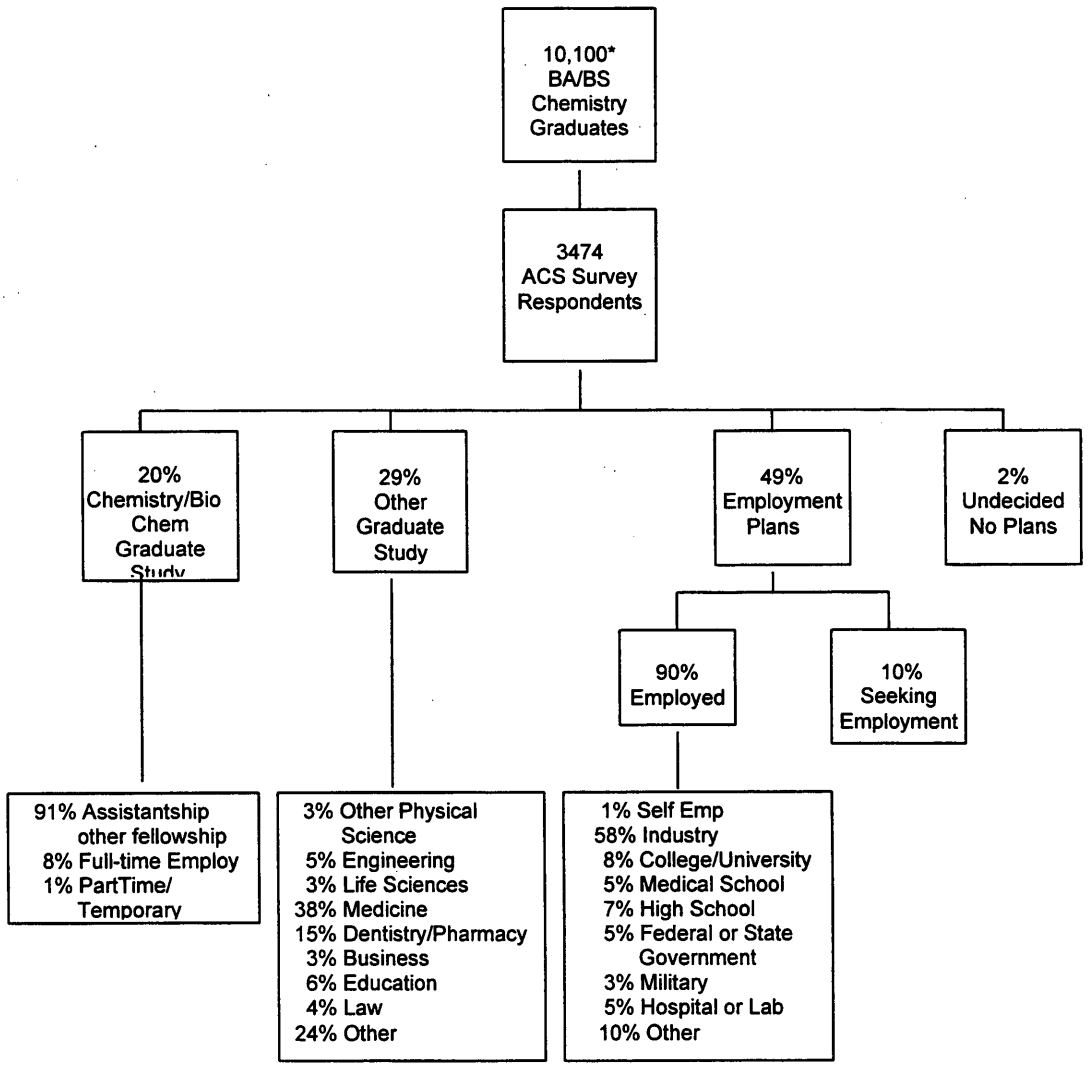
In 1999, the new graduates showed the same propensity to enter the workforce and not continue with graduate education. Those who did have plans for continued study in programs other than chemistry stood at 64 percent. Those who planned to continue their chemistry studies declined further, dropping to 20 percent for the first time.

This dynamic of post-graduation plans likely has several external contributing factors. Three of these factors in the mid-1990s were: 1.) a rapidly improving market and high demand for bachelor's chemists; 2.) a significantly increased time-to-degree for graduate degrees; and 3.) originally, a disadvantaged market for Ph.D.s that kept graduate programs filled with delayed graduations and postdoc positions. Today's top reason is likely the rapid growth of small companies in the pharmaceutical and biotechnology industries that are more apt to lure employees at the B.S. and M.S. level.

Figure 4 shows the more detailed plans of 1999 chemistry bachelor's. Of those bachelor's chemistry graduates who planned further studies in another discipline in 1999 the choice of field of study has not changed appreciably in the last decade, with studies in the health-related professions topping the list. Of those chemistry graduates who chose immediate employment, the majority chose industrial employment. The proportion who went directly to work in industry declined slightly between 1998 and 1999, except for a large increase in "other" graduate fields. Within the graduate plans for those continuing, most choices remained relatively stable with slight increases in those continuing in education and the health professions.

Figure 4

Postgraduation Plans of 1999 Bachelor's Chemistry Graduates



* Estimated

BACHELOR'S GRADUATES CERTIFIED TO ACS FROM APPROVED PROGRAMS

Graduates completing certification to ACS from approved programs are more likely than other graduates to plan further studies, especially further studies in chemistry. Forty-seven percent of the 1999 B.S. graduates certified from approved programs planned full-time studies compared with 41 percent of non-certified graduates. Of the bachelor's chemistry graduates who plan full-time studies, 58 percent of those completing certification plan to study chemistry or biochemistry and only 25 percent of those not completing certification plan to study chemistry or biochemistry. On the other hand, those bachelor's graduates who plan further full-time study and did not receive chemistry certification were more than twice as likely to study medical and dental studies (35 percent vs. 15 percent of those who were certified).

Certified graduates were also less likely than those non-certified to be unemployed or working in temporary or part-time jobs. Among those inexperienced bachelors' employed full-time, certified graduates are more likely to be employed in industry (67 percent vs. 57 percent). The unemployment rate for bachelor's graduates certified from ACS approved programs was 4.0 percent this year, compared to 6.0 percent for other graduates.

DEMOGRAPHIC COMPOSITION OF NEW GRADUATES

Sex

Women are increasingly represented at all degree levels of chemistry. The proportion of new women chemists in 1999 was 49 percent of the bachelor's, 44 percent of the master's, and 33 percent of the doctorates. The proportion for master's fell precipitously from 51 percent in 1998, perhaps a reflection of a small number of respondents. This represents a marked increase in women graduates over the past 25 years, when in 1972 the percentages were 19, 22, and 10 for the bachelor's, master's and doctorates, respectively.

The proportion of degrees granted to women in chemical engineering continued to increase at the bachelor's and doctorate levels. These increases reflect the slower growth than for women in chemistry. In 1999, the proportion of women in chemical engineering were 40 percent of the bachelor's, 24 percent of the master's and 20 percent of the doctorates. In 1998, the proportions of women in chemical engineering were 35 percent of the bachelor's 27 percent of the master's and 18 percent of the doctorates. Once again, the drop in the master's percentage was likely due to a small sample size and the number of new master's responding.

Race and Ethnicity

Minorities, particularly Asians, are an increasing proportion of new graduates in chemistry and chemical engineering. In 1999, Asians were 12 percent of bachelor's, 24 percent of master's and 24 percent of Ph.D. graduates. 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. In 1999, Hispanics held a 4.6 percent share of bachelor's of the Class of 1999 followed by African-Americans with a 4.1 percent share. Native Americans continue to comprise less than one percent of new graduates in chemistry at all degree levels.

Slightly more racial and ethnic diversity was shown by bachelor's graduates in chemical engineering than chemistry graduates. Over 13 percent of the bachelor's in chemical

engineering were of Asian origin, followed by 5.6 percent who were Black, 3.9 percent who were Hispanic and the less than one percent who were of American Indian descent. The racial and ethnic diversity of new master's in chemical engineering was 21 percent Asian, 5.3 percent Black, 5.3 percent Hispanic, and virtually no American Indians. For new doctorates in chemical engineering the proportions were 27 percent Asian, 1.6 percent Black, 2.1 Hispanic, and again, virtually no American Indians.

Citizenship

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 for more than a decade, especially among master's and doctoral graduate degree levels. This dynamic appears to have leveled off over the past several years. The changes in citizenship are similar between the two fields, with the proportions of graduates with temporary visas increasing significantly for graduate degrees. In 1999, about 95 percent of bachelor's chemists and chemical engineers were U.S. citizens and between 1 and 2 percent were in the U.S. on temporary visas.

Among master's chemistry graduates, the proportion of graduates who have temporary visas increased from 5 percent of the chemistry graduates in 1983 to 25 percent in 1997 and dipped to 20 percent in 1999. Similarly, among graduates with doctoral degrees, the proportion of graduates who have temporary visas increased from 8 percent of the chemistry graduates in 1983 to 21 percent in 1996 and declined to 19 percent in 1997, but climbed to 27 percent in 1999. For chemical engineers, the proportions are similar, with 20 percent of master's and 26 percent of Ph.D.s holding temporary visas at graduation.

Among new chemistry Ph.D.s, those with temporary visas were much more apt to have postdoctoral appointments. More than 62 percent of new Ph.D.s with temporary visas were postdoctoral fellows as opposed to about 39 percent of those with U. S. citizenship. Normally, those new Ph.D.s holding temporary visas have had higher fall unemployment records as they did this year at 4.6 percent opposed to the 2.4 percent overall unemployment for chemists with new doctorates.

SCOPE AND METHOD

OBJECTIVES

The 1999 New Graduate Study (Starting Salary Survey) is the 49th in the series of annual surveys on the employment and future plans of new graduates in chemistry and chemical engineering conducted by the American Chemical Society. Summaries of the results of these surveys appear annually in *Chemical & Engineering News*. This year, a summary of the results was published on March 14, 2000. Also, an article on the Class of 1999 was published in the September 2000 issue of *Today's Chemist at Work*.

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 1998-99 academic year. The survey covers bachelor's, master's, and doctoral degree recipients. In addition, since 1973, 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, 1998 and June, 1999. During the second week of October 1999, 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 on October 4, 1999, to 16,145 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. A third full mailing to non-respondent Ph.D.s was sent in early December. By the cutoff date of January 10, 2000, ACS had received 6,328 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.

"Certified" bachelor's degree-holders are those bachelor's certified by their department or program to ACS. The certified graduate "has pursued and successfully completed a curriculum as proscribed in the guidelines for ACS-approved programs and that ...has received the bachelor's degree." (ACS Committee on Professional Training, 1998).

For this study, race and ethnicity categories are combined to become mutually-exclusive. Hispanics may include all racial categories, but racial categories do not include Hispanics.

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 Ph.D.s 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.*

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 of the full report for example, 1,696 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 and permanent is 37 percent (p=37). A "95 percent confidence interval" for this percent may be approximated by taking n and p to be about 1000 and 40 percent. The above table shows an approximate sampling error of 3.0 percent. Hence, the 95 percent confidence interval is 36 percent to 42 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.

LIST OF TABLES FOR CLASS OF 1999

Table A-1

SALARIES of CHEMISTS employed FULL-TIME
by DEGREE and EXPERIENCE
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
Work Experience	Less than 12 months	Median	30,000	42,000	61,000
		Mean	31,299	41,568	56,574
		Std Dev	8,632	9,904	13,504
		Count	843	122	170
	12-36 months	Median	32,500	44,100	55,500
		Mean	33,425	41,374	54,669
		Std Dev	9,197	9,892	13,969
		Count	257	33	52
	More than 36 months	Median	39,000	47,000	64,000
		Mean	38,509	48,031	62,989
		Std Dev	10,150	14,380	18,186
		Count	118	83	54
TOTAL	Median		31,000	43,061	60,500
	Mean		32,446	43,795	57,470
	Std Dev		9,161	12,021	14,831
	Count		1218	238	276

Table A-2

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EXPERIENCE
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
Work Experience	Less than 12 months	Median	47,000	52,000	67,700
		Mean	44,924	51,180	66,368
		Std Dev	6,672	6,893	9,002
		Count	601	51	85
	12-36 months	Median	48,000	55,000	68,750
		Mean	46,998	54,282	67,406
		Std Dev	5,048	8,400	10,193
		Count	302	31	32
	More than 36 months	Median	47,100	60,000	69,000
		Mean	46,866	62,568	67,177
		Std Dev	8,419	15,621	14,171
		Count	44	26	15
TOTAL	Median		47,148	54,000	68,000
	Mean		45,675	54,812	66,711
	Std Dev		6,368	10,954	9,911
	Count		947	108	132

Table A-3

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME in PRIVATE INDUSTRY by SEX and DEGREE 1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
Sex	Female	Median	32,000	42,750	64,000
		Mean	32,900	41,992	62,462
		Std Dev	7,972	6,966	8,648
		Count	260	44	47
	Male	Median	32,500	47,000	62,500
		Mean	33,684	46,383	62,134
		Std Dev	8,560	10,237	9,432
		Count	256	43	73
TOTAL	Median		32,150	44,000	64,000
	Mean		33,289	44,163	62,262
	Std Dev		8,270	8,962	9,097
	Count		516	87	120

Table A-4

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME in PRIVATE INDUSTRY by SEX and DEGREE 1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
Sex	Female	Median	47,900	53,000	70,000
		Mean	45,946	54,080	68,329
		Std Dev	5,574	3,321	5,944
		Count	222	5	9
	Male	Median	47,000	52,000	67,900
		Mean	45,876	50,427	66,277
		Std Dev	5,700	6,816	6,520
		Count	278	37	56
TOTAL	Median		47,350	52,000	68,000
	Mean		45,907	50,862	66,561
	Std Dev		5,639	6,580	6,439
	Count		500	42	65

Table A-5

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
EMPTYPE	Self Employed	Median	30,000	—	—
		Mean	30,100	—	—
		Std Dev	9,826	—	—
		Count	5	0	0
	Industry	Median	32,150	44,000	64,000
		Mean	33,289	44,382	62,262
		Std Dev	8,270	9,145	9,097
		Count	516	88	120
	College or univ	Median	24,000	28,500	36,500
		Mean	26,343	29,250	38,704
		Std Dev	12,152	1,893	9,641
		Count	37	4	27
	Medical school	Median	24,000	25,023	27,000
		Mean	24,791	25,591	30,390
		Std Dev	3,780	2,331	8,602
		Count	29	6	3
	Ele/sec school	Median	28,000	38,631	40,000
		Mean	28,073	37,048	36,600
		Std Dev	4,630	5,828	7,925
		Count	71	8	5
	Federal govmt	Median	31,425	34,000	54,000
		Mean	34,148	34,000	54,000
		Std Dev	7,799	9,899	12,728
		Count	11	2	2
	Military	Median	30,000	45,000	53,000
		Mean	29,602	45,000	53,000
		Std Dev	5,449	—	—
		Count	31	1	1
	State or local govmt	Median	30,000	24,500	35,000
		Mean	28,689	27,100	35,000
		Std Dev	6,610	9,666	—
		Count	29	3	1
	Hospital or lab	Median	26,500	44,000	—
		Mean	27,466	44,000	—
		Std Dev	8,973	—	—
		Count	42	1	0
	Other	Median	26,000	40,300	60,000
		Mean	28,941	40,300	57,364
		Std Dev	10,483	5,939	9,680
		Count	69	8	11
TOTAL	Median		30,000	42,000	61,000
	Mean		31,298	41,597	56,574
	Std Dev		8,639	9,940	13,504
	Count		840	121	170

Table A-6

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
EMPTYPE	Self Employed	Median	22,250	---	---
		Mean	22,250	---	---
		Std Dev	10,960	---	---
		Count	2	0	0
	Industry	Median	32,500	47,000	62,500
		Mean	33,684	46,383	62,134
		Std Dev	8,560	10,237	9,432
		Count	256	43	73
	College or univ	Median	24,400	28,500	34,119
		Mean	25,764	28,500	35,424
		Std Dev	8,860	707	8,550
		Count	11	2	17
	Medical school	Median	23,000	---	24,000
		Mean	23,820	---	24,000
		Std Dev	2,984	---	---
		Count	9	0	1
	Ele/sec school	Median	28,700	40,356	34,500
		Mean	28,308	37,826	34,500
		Std Dev	4,469	6,917	13,435
		Count	33	3	2
	Federal govmt	Median	31,213	---	63,000
		Mean	32,595	---	63,000
		Std Dev	8,141	---	---
		Count	6	0	1
	Military	Median	30,000	45,000	53,000
		Mean	29,631	45,000	53,000
		Std Dev	5,577	---	---
		Count	28	1	1
	State or local govmt	Median	30,000	37,800	---
		Mean	29,364	37,800	---
		Std Dev	7,214	---	---
		Count	11	1	0
	Hospital or lab	Median	23,210	44,000	---
		Mean	26,056	44,000	---
		Std Dev	6,534	---	---
		Count	8	1	0
	Other	Median	28,800	40,300	59,250
		Mean	30,351	40,300	54,750
		Std Dev	9,869	5,939	8,816
		Count	33	8	8
TOTAL	Median		30,000	44,000	61,000
	Mean		31,883	44,308	56,165
	Std Dev		8,469	9,937	14,093
	Count		397	59	103

Table A-7

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
EMPTYPE	Self Employed	Median	35,000	---	---
		Mean	35,333	---	---
		Std Dev	5,508	---	---
		Count	3	0	0
	Industry	Median	32,000	42,750	64,000
		Mean	32,900	41,992	62,462
		Std Dev	7,972	6,966	8,648
		Count	260	44	47
	College or univ	Median	23,000	30,000	41,500
		Mean	26,588	30,000	44,280
		Std Dev	13,455	2,828	9,149
		Count	26	2	10
	Medical school	Median	24,500	25,023	33,585
		Mean	25,228	25,591	33,585
		Std Dev	4,081	2,331	9,313
		Count	20	6	2
	Ele/sec school	Median	27,750	36,906	40,000
		Mean	27,869	36,581	38,000
		Std Dev	4,815	5,898	5,292
		Count	38	5	3
	Federal govmt	Median	37,000	34,000	45,000
		Mean	36,012	34,000	45,000
		Std Dev	7,827	9,899	---
		Count	5	2	1
	Military	Median	30,000	---	---
		Mean	29,333	---	---
		Std Dev	5,033	---	---
		Count	3	0	0
	State or local govmt	Median	28,139	21,750	35,000
		Mean	28,276	21,750	35,000
		Std Dev	6,394	3,889	---
		Count	18	2	1
	Hospital or lab	Median	27,500	---	---
		Mean	27,798	---	---
		Std Dev	9,507	---	---
		Count	34	0	0
	Other	Median	25,100	---	70,000
		Mean	27,649	---	64,333
		Std Dev	10,993	---	9,815
		Count	36	0	3
TOTAL	Median		30,000	40,000	62,000
	Mean		30,773	38,617	57,204
	Std Dev		8,765	8,826	12,622
	Count		443	61	67

Table A-8

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and TYPE OF INDUSTRY
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
Employer	Nonmanufacturing	Median	24,750	43,080	56,200
		Mean	28,023	45,527	56,200
		Std Dev	10,679	6,704	8,768
		Count	36	6	2
	Aerospace	Median	35,000	45,000	---
		Mean	35,000	45,000	---
		Std Dev	10,000	7,071	---
		Count	3	2	0
	Agricultural chemicals	Median	28,000	52,500	62,000
		Mean	26,857	52,500	62,000
		Std Dev	3,848	---	0
		Count	7	1	2
	Basic chemicals	Median	35,000	33,000	64,000
		Mean	33,311	33,000	60,691
		Std Dev	8,037	---	8,053
		Count	13	1	9
	Biotechs	Median	30,000	37,000	62,000
		Mean	30,984	38,948	59,500
		Std Dev	6,066	6,026	10,202
		Count	44	8	15
	Electronics	Median	40,000	51,150	59,000
		Mean	41,346	48,021	60,111
		Std Dev	8,504	13,057	13,195
		Count	33	7	9
	Petroleum	Median	36,000	58,000	58,000
		Mean	34,712	58,000	59,752
		Std Dev	9,815	---	14,015
		Count	11	1	5
	Pharmaceuticals	Median	33,998	45,600	67,350
		Mean	34,525	44,543	65,561
		Std Dev	7,899	8,573	6,813
		Count	186	45	38
	Plastics	Median	30,250	55,500	68,400
		Mean	30,944	49,007	63,600
		Std Dev	7,812	12,141	13,424
		Count	18	3	8
	Specialty chemicals	Median	35,000	39,000	61,000
		Mean	34,516	38,900	60,134
		Std Dev	5,940	4,749	7,316
		Count	40	5	16
TOTAL	Median		33,000	44,000	64,000
	Mean		33,769	44,308	62,280
	Std Dev		8,461	8,847	9,242
	Count		391	79	104

Table A-9

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME in INDUSTRY by DEGREE and EMPLOYER SIZE 1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
Employer Size	Less than 50	Median	28,000	40,000	56,500
		Mean	28,805	40,400	55,944
		Std Dev	8,283	6,657	9,447
		Count	73	12	16
	50 to 499	Median	29,500	39,000	60,000
		Mean	30,400	39,570	59,795
		Std Dev	6,985	9,643	10,540
		Count	151	21	21
	100 to 499	Median	24,500	---	---
		Mean	24,500	---	---
		Std Dev	---	---	---
		Count	1	0	0
	500 to 2,499	Median	32,000	42,500	58,500
		Mean	32,034	42,634	57,663
		Std Dev	6,160	10,661	8,364
		Count	75	14	12
	2,500 to 9,999	Median	35,000	44,825	64,000
		Mean	35,242	47,269	63,240
		Std Dev	7,149	7,206	9,086
		Count	49	8	15
	10,000 to 24,999	Median	36,000	49,500	64,000
		Mean	36,509	49,440	64,629
		Std Dev	8,350	6,012	3,866
		Count	52	11	17
	25,000 or more	Median	40,000	49,400	67,200
		Mean	38,978	48,620	66,190
		Std Dev	7,971	7,908	7,933
		Count	108	21	39
TOTAL	Median		32,300	44,000	64,000
	Mean		33,311	44,318	62,262
	Std Dev		8,303	9,178	9,097
	Count		509	87	120

Table A-10

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and WORK FUNCTION
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
1st Work Function	Teaching	Median	28,000	36,906	36,400
		Mean	27,971	35,471	36,959
		Std Dev	5,433	6,121	5,445
		Count	78	11	24
	Management	Median	30,000	46,250	62,000
		Mean	31,659	47,636	57,591
		Std Dev	8,988	24,171	12,310
		Count	38	4	11
	Research	Median	30,000	44,000	64,000
		Mean	31,824	42,915	61,081
		Std Dev	7,673	9,283	11,756
		Count	201	57	85
	Dev & design	Median	34,000	45,500	62,500
		Mean	34,622	45,726	61,904
		Std Dev	7,893	6,080	8,811
		Count	69	16	25
	Production	Median	29,750	36,890	64,600
		Mean	29,574	35,718	58,667
		Std Dev	6,798	8,370	14,044
		Count	212	16	6
	Professional svcs	Median	36,000	42,000	63,000
		Mean	36,507	48,000	58,786
		Std Dev	9,635	19,698	10,984
		Count	68	3	7
	Other	Median	30,000	40,000	46,000
		Mean	30,866	40,376	49,015
		Std Dev	11,032	7,914	10,310
		Count	176	14	11
TOTAL	Median		30,000	42,000	61,000
	Mean		31,301	41,647	56,584
	Std Dev		8,637	9,906	13,543
	Count		842	121	169

Table A-11

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
REGION	Pacific	Median	30,000	44,000	61,000
		Mean	30,220	45,835	58,470
		Std Dev	8,044	9,651	14,341
		Count	84	12	22
	Mountain	Median	25,000	41,000	38,500
		Mean	27,259	42,333	39,763
		Std Dev	7,481	7,483	12,252
		Count	56	9	8
	West North Central	Median	28,000	37,000	58,500
		Mean	29,354	35,011	55,019
		Std Dev	7,186	10,230	13,942
		Count	76	9	12
	West South Central	Median	29,250	35,464	64,800
		Mean	30,488	34,028	62,675
		Std Dev	8,366	7,652	10,622
		Count	46	7	12
	East North Central	Median	30,000	42,500	62,250
		Mean	31,306	43,195	57,611
		Std Dev	7,275	9,865	13,303
		Count	152	27	28
	East South Central	Median	26,750	36,500	48,888
		Mean	30,103	39,000	48,763
		Std Dev	10,164	15,584	15,068
		Count	30	5	6
	Middle Atlantic	Median	32,500	44,000	64,025
		Mean	33,853	42,321	61,423
		Std Dev	9,511	9,568	11,032
		Count	161	24	32
	South Atlantic	Median	30,000	41,000	54,000
		Mean	30,574	40,113	52,898
		Std Dev	8,552	9,344	11,573
		Count	139	16	24
	New England	Median	32,000	42,500	62,000
		Mean	34,967	43,840	56,073
		Std Dev	10,055	9,534	16,703
		Count	55	10	15
TOTAL	Median		30,000	42,000	62,000
	Mean		31,268	41,525	56,595
	Std Dev		8,651	9,918	13,714
	Count		799	119	159

Table A-12

SALARIES of INEXPERIENCED B.S. CHEMISTS employed FULL-TIME by EMPLOYER and CERTIFICATION 1999 ACS Starting Salary Survey

			Certified to ACS		
			No	Yes	TOTAL
EMPTYPE	Self Employed	Median	27,750	30,000	30,000
		Mean	27,750	31,667	30,100
		Std Dev	18,738	2,887	9,826
		Count	2	3	5
	Industry	Median	31,500	34,000	32,150
		Mean	32,700	33,971	33,289
		Std Dev	8,765	7,617	8,270
		Count	277	239	516
	College or univ	Median	24,000	22,000	24,000
		Mean	27,804	24,200	26,343
		Std Dev	14,380	7,828	12,152
		Count	22	15	37
	Medical school	Median	24,000	23,500	24,000
		Mean	24,671	25,020	24,791
		Std Dev	3,813	3,909	3,780
		Count	19	10	29
	Ele/sec school	Median	28,000	28,350	28,000
		Mean	27,791	28,904	28,073
		Std Dev	4,624	4,679	4,630
		Count	53	18	71
	Federal govmt	Median	30,588	37,000	31,425
		Mean	32,872	35,680	34,148
		Std Dev	8,788	7,081	7,799
		Count	6	5	11
	Military	Median	30,000	30,000	30,000
		Mean	29,295	29,727	29,602
		Std Dev	6,830	4,959	5,449
		Count	9	22	31
	State or local govmt	Median	30,000	29,653	30,000
		Mean	28,248	29,410	28,689
		Std Dev	7,472	5,149	6,610
		Count	18	11	29
	Hospital or lab	Median	28,000	22,500	26,500
		Mean	28,694	24,727	27,466
		Std Dev	10,161	4,733	8,973
		Count	29	13	42
	Other	Median	26,000	27,750	26,000
		Mean	28,545	29,910	28,941
		Std Dev	10,870	9,664	10,483
		Count	49	20	69
TOTAL	Median		30,000	30,750	30,000
	Mean		30,717	32,087	31,298
	Std Dev		9,156	7,827	8,639
	Count		484	356	840

Table A-13

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and DEGREE SPECIALTY
1999 ACS Starting Salary Survey

			Highest Degree		
			BA/BS Chem	MS Chem	PHD Chem
FIELD	Analytical chem	Median	—	42,000	59,250
		Mean	—	39,866	56,663
		Std Dev	—	11,657	13,991
		Count	0	21	38
	Biochemistry	Median	29,000	35,500	45,000
		Mean	29,633	34,438	47,705
		Std Dev	7,706	9,861	9,279
		Count	173	8	14
	Chemical ed	Median	29,250	41,178	54,500
		Mean	30,401	39,869	54,500
		Std Dev	6,324	4,074	2,121
		Count	55	4	2
	Environm chem	Median	27,000	35,000	64,000
		Mean	29,138	35,000	64,000
		Std Dev	6,758	—	—
		Count	8	1	1
	General chem	Median	30,000	41,000	45,000
		Mean	31,831	41,596	45,000
		Std Dev	9,010	9,217	—
		Count	596	29	1
	Inorganic chem	Median	—	36,953	60,000
		Mean	—	37,258	54,568
		Std Dev	—	5,202	14,023
		Count	0	8	29
	Material sci	Median	37,100	—	69,000
		Mean	36,175	—	71,000
		Std Dev	10,914	—	5,292
		Count	4	0	3
	Med/Pharm chem	Median	—	58,000	52,000
		Mean	—	58,000	52,000
		Std Dev	—	—	22,627
		Count	0	1	2
	Organic chem	Median	—	45,600	66,000
		Mean	—	43,091	62,201
		Std Dev	—	8,132	12,366
		Count	0	32	45
	Physical chem	Median	29,000	40,900	45,000
		Mean	29,000	41,358	51,158
		Std Dev	—	11,024	13,434
		Count	1	10	24
	Polymer chem	Median	31,500	42,000	64,000
		Mean	33,750	46,167	60,000
		Std Dev	6,292	8,098	11,541
		Count	4	3	6
	Other	Median	36,750	51,150	64,000
		Mean	36,750	54,154	58,454
		Std Dev	18,738	13,289	11,534
		Count	2	5	5
TOTAL	Median		30,000	42,000	61,000
	Mean		31,299	41,568	56,574
	Std Dev		8,632	9,904	13,504
	Count		843	122	170

Table A-14

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME by DEGREE and EMPLOYER
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
EMPTYPE	Self Employed	Median	50,000	---	---
		Mean	50,000	---	---
		Std Dev	---	---	---
		Count	1	0	0
	Industry	Median	47,250	52,000	68,000
		Mean	45,910	50,862	66,561
		Std Dev	5,628	6,580	6,439
		Count	502	42	65
	College or univ	Median	45,000	48,000	60,600
		Mean	43,548	48,000	65,097
		Std Dev	6,787	2,828	12,491
		Count	23	2	11
	Ele/sec school	Median	29,500	---	---
		Mean	29,500	---	---
		Std Dev	7,778	---	---
		Count	2	0	0
	Federal govmt	Median	43,007	60,000	62,550
		Mean	42,650	60,000	62,100
		Std Dev	5,186	8,485	17,032
		Count	20	2	4
	Military	Median	24,500	---	48,000
		Mean	29,117	---	48,000
		Std Dev	7,136	---	---
		Count	12	0	1
	State or local govmt	Median	36,931	---	68,650
		Mean	35,344	---	68,650
		Std Dev	9,088	---	12,233
		Count	6	0	2
	Hospital or lab	Median	25,000	40,000	---
		Mean	25,000	40,000	---
		Std Dev	7,071	---	---
		Count	2	1	0
	Other	Median	43,500	57,000	82,500
		Mean	41,298	55,000	82,500
		Std Dev	8,844	9,165	24,749
		Count	30	3	2
TOTAL	Median		47,000	52,000	67,700
	Mean		44,918	51,144	66,368
	Std Dev		6,677	6,958	9,002
	Count		598	50	85

Table A-15

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME by DEGREE and EMPLOYER - MEN only
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
EMPTYPE	Self Employed	Median	50,000	---	---
		Mean	50,000	---	---
		Std Dev	---	---	---
		Count	1	0	0
	Industry	Median	47,000	52,000	67,900
		Mean	45,876	50,427	66,277
		Std Dev	5,700	6,816	6,520
		Count	278	37	56
	College or univ	Median	46,000	46,000	63,300
		Mean	42,780	46,000	67,795
		Std Dev	7,259	---	14,261
		Count	15	1	7
	Ele/sec school	Median	35,000	---	---
		Mean	35,000	---	---
		Std Dev	---	---	---
		Count	1	0	0
	Federal govmt	Median	41,000	60,000	50,000
		Mean	41,668	60,000	57,767
		Std Dev	5,605	8,485	17,957
		Count	13	2	3
	Military	Median	28,700	---	---
		Mean	30,300	---	---
		Std Dev	7,633	---	---
		Count	8	0	0
	State or local govmt	Median	40,000	---	68,650
		Mean	35,267	---	68,650
		Std Dev	8,900	---	12,233
		Count	3	0	2
	Hospital or lab	Median	30,000	---	---
		Mean	30,000	---	---
		Std Dev	---	---	---
		Count	1	0	0
	Other	Median	45,500	54,000	65,000
		Mean	42,173	54,000	65,000
		Std Dev	9,532	12,728	---
		Count	20	2	1
TOTAL	Median		46,690	52,000	67,700
	Mean		44,834	50,948	66,111
	Std Dev		6,730	7,197	8,222
	Count		340	42	69

Table A-16

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME by DEGREE and EMPLOYER - WOMEN only
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
EMPTYPE	Industry	Median	47,900	53,000	70,000
		Mean	45,946	54,080	68,329
		Std Dev	5,574	3,321	5,944
		Count	222	5	9
	College or univ	Median	45,000	50,000	57,750
		Mean	44,988	50,000	60,375
		Std Dev	5,979	---	8,159
		Count	8	1	4
	Ele/sec school	Median	24,000	---	---
		Mean	24,000	---	---
		Std Dev	---	---	---
		Count	1	0	0
	Federal govmt	Median	43,200	---	75,100
		Mean	44,473	---	75,100
		Std Dev	4,046	---	---
		Count	7	0	1
	Military	Median	24,500	---	48,000
		Mean	26,750	---	48,000
		Std Dev	6,292	---	---
		Count	4	0	1
	State or local govmt	Median	33,862	---	---
		Mean	35,421	---	---
		Std Dev	11,281	---	---
		Count	3	0	0
	Hospital or lab	Median	20,000	40,000	---
		Mean	20,000	40,000	---
		Std Dev	---	---	---
		Count	1	1	0
	Other	Median	39,350	57,000	100,000
		Mean	39,550	57,000	100,000
		Std Dev	7,423	---	---
		Count	10	1	1
TOTAL	Median		47,000	52,500	68,783
	Mean		45,016	52,175	67,473
	Std Dev		6,644	5,837	12,072
	Count		256	8	16

Table A-17

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME by DEGREE and TYPE OF INDUSTRY
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
Employer	Nonmanufacturing	Median	44,600	38,000	61,500
		Mean	42,866	38,000	60,750
		Std Dev	7,613	2,828	12,339
		Count	28	2	4
	Aerospace	Median	44,000	---	---
		Mean	45,167	---	---
		Std Dev	3,884	---	---
		Count	3	0	0
	Agricultural chemicals	Median	47,600	---	---
		Mean	46,275	---	---
		Std Dev	4,751	---	---
		Count	8	0	0
	Basic chemicals	Median	49,300	46,500	67,565
		Mean	48,720	46,500	66,855
		Std Dev	2,801	7,778	1,621
		Count	27	2	3
	Biotechs	Median	44,000	45,500	62,000
		Mean	42,227	45,500	65,571
		Std Dev	6,902	7,778	7,743
		Count	16	2	7
	Electronics	Median	45,000	56,500	72,000
		Mean	43,972	53,667	70,200
		Std Dev	5,346	6,401	6,017
		Count	41	9	5
	Petroleum	Median	50,000	54,000	65,500
		Mean	49,681	54,440	63,913
		Std Dev	4,252	2,137	4,870
		Count	39	5	8
	Pharmaceuticals	Median	48,000	58,000	70,200
		Mean	46,994	58,000	70,915
		Std Dev	5,143	---	4,933
		Count	65	1	13
	Plastics	Median	48,300	52,800	68,000
		Mean	46,447	52,520	65,422
		Std Dev	6,412	4,993	5,626
		Count	41	5	9
	Specialty chemicals	Median	48,000	52,000	67,700
		Mean	46,330	51,300	66,544
		Std Dev	4,532	4,685	4,200
		Count	60	5	5
TOTAL	Median		48,000	52,000	68,000
	Mean		46,269	51,365	66,820
	Std Dev		5,669	6,536	6,541
	Count		328	31	54

Table A-18

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY by DEGREE and EMPLOYER SIZE
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
Employer Size	Less than 50	Median	40,000	40,000	59,000
		Mean	39,564	39,000	56,400
		Std Dev	6,826	1,732	6,986
		Count	36	5	5
	50 to 499	Median	42,000	44,250	68,000
		Mean	41,923	43,875	65,000
		Std Dev	6,412	2,175	10,100
		Count	82	4	5
	500 to 2,499	Median	45,000	53,900	68,000
		Mean	45,335	53,133	66,204
		Std Dev	5,134	4,642	5,024
		Count	70	6	5
	2,500 to 9,999	Median	47,500	52,000	64,500
		Mean	46,029	51,771	64,370
		Std Dev	4,897	4,950	4,273
		Count	53	7	10
	10,000 to 24,999	Median	49,000	52,750	68,000
		Mean	48,313	51,875	67,500
		Std Dev	4,019	5,977	5,184
		Count	79	4	9
	25,000 or more	Median	48,492	54,000	69,300
		Mean	48,248	54,507	68,944
		Std Dev	3,638	3,540	5,192
		Count	175	15	31
TOTAL	Median		47,400	52,000	68,000
	Mean		45,930	50,654	66,561
	Std Dev		5,652	6,521	6,439
	Count		495	41	65

Table A-19

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME by DEGREE and WORK FUNCTION
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
1st Work Function	Teaching	Median	25,500	46,000	55,500
		Mean	27,500	46,000	56,020
		Std Dev	5,196	---	4,399
		Count	4	1	5
	Management	Median	47,000	54,000	---
		Mean	45,065	54,000	---
		Std Dev	5,804	---	---
		Count	43	1	0
	Research	Median	48,000	50,900	67,383
		Mean	46,465	50,725	66,806
		Std Dev	5,084	8,292	7,737
		Count	55	8	42
	Dev & design	Median	47,000	54,000	68,000
		Mean	46,472	53,567	65,968
		Std Dev	4,840	5,100	8,125
		Count	150	15	25
	Production	Median	48,000	51,500	71,902
		Mean	45,598	51,492	71,902
		Std Dev	6,280	5,912	7,634
		Count	190	12	2
	Professional svcs	Median	45,000	46,500	69,000
		Mean	43,036	47,000	70,000
		Std Dev	7,339	9,024	16,350
		Count	85	8	7
	Other	Median	44,614	50,000	72,100
		Mean	41,937	51,167	68,075
		Std Dev	8,757	7,910	10,267
		Count	74	6	4
TOTAL	Median		47,000	52,000	67,700
	Mean		44,924	51,180	66,368
	Std Dev		6,672	6,893	9,002
	Count		601	51	85

Table A-20

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME by DEGREE and GEOGRAPHIC REGION
1999 ACS Starting Salary Survey

			Highest Degree		
			BS Chem eng	MS Chem eng	PHD Chem eng
REGION	Pacific	Median	46,000	56,750	68,500
		Mean	44,031	56,250	68,440
		Std Dev	6,839	8,158	15,252
		Count	44	6	10
	Mountain	Median	42,000	49,000	68,150
		Mean	40,763	53,333	68,150
		Std Dev	6,950	11,150	12,940
		Count	25	3	2
	West	Median	46,250	50,000	64,000
	North	Mean	44,651	49,000	64,250
	Central	Std Dev	5,949	2,646	6,162
		Count	42	3	6
	West	Median	49,000	54,000	67,000
	South	Mean	47,030	52,175	63,902
	Central	Std Dev	6,552	7,278	8,480
		Count	100	12	10
	East	Median	47,000	47,250	67,683
	North	Mean	45,418	47,383	66,317
	Central	Std Dev	6,665	7,097	6,879
		Count	120	6	16
	East	Median	48,000	---	63,300
	South	Mean	47,559	---	63,300
	Central	Std Dev	2,952	---	---
		Count	17	0	1
	Middle	Median	47,000	54,000	68,500
	Atlantic	Mean	45,106	51,500	66,690
		Std Dev	6,822	6,665	5,176
		Count	112	7	20
	South	Median	45,000	51,900	60,000
	Atlantic	Mean	43,345	50,975	63,241
		Std Dev	7,250	4,829	13,125
		Count	97	8	9
	New	Median	45,000	44,500	70,000
	England	Mean	45,368	44,750	68,814
		Std Dev	3,418	4,113	9,355
		Count	25	4	7
TOTAL	Median		47,000	52,000	67,700
	Mean		44,990	51,065	66,102
	Std Dev		6,702	7,007	9,009
	Count		582	49	81

Table A-21

STIPENDS/FELLOWSHIPS/SUPPORT of GRAD STUDENTS/POSTDOCS
CHEMISTS and CHEMICAL ENGINEERS by DEGREE and EMPLOYER SECTOR
1999 ACS Starting Salary Survey

			Highest Degree					
			BS/BA Chem	MS Chem	PHD Chem	BS Chem eng	MS Chem eng	PHD Chem eng
EMPTYPE	Self Employed	Median	14,400	—	—	—	—	—
		Mean	14,400	—	—	—	—	—
		Std Dev	—	—	—	—	—	—
		Count	1	0	0	0	0	0
	Industry	Median	26,000	55,000	40,000	47,520	65,004	44,000
		Mean	27,542	55,000	40,672	43,717	65,004	47,167
		Std Dev	9,618	—	10,341	12,383	18,379	13,531
		Count	19	1	25	7	2	3
	College or univ	Median	16,500	16,000	26,272	18,000	16,500	30,000
		Mean	16,946	17,165	27,675	18,326	16,461	30,364
		Std Dev	3,963	5,706	5,068	5,239	2,913	3,680
		Count	557	81	162	104	31	25
	Medical school	Median	16,500	16,500	26,750	16,000	17,000	31,000
		Mean	17,528	17,069	27,542	15,643	17,000	31,333
		Std Dev	4,274	4,730	3,845	1,819	—	3,512
		Count	141	13	50	7	1	3
	Ele/sec school	Median	22,500	—	—	12,000	—	—
		Mean	22,500	—	—	12,000	—	—
		Std Dev	—	—	—	—	—	—
		Count	1	0	0	1	0	0
	Federal govmt	Median	23,750	—	40,000	—	—	41,000
		Mean	26,575	—	40,374	—	—	43,943
		Std Dev	10,033	—	6,470	—	—	12,145
		Count	4	0	32	0	0	7
	Military	Median	29,373	—	47,000	—	—	—
		Mean	25,204	—	44,000	—	—	—
		Std Dev	9,900	—	6,000	—	—	—
		Count	8	0	4	0	0	0
	State or local govmt	Median	23,500	—	42,600	—	—	57,000
		Mean	23,500	—	44,200	—	—	57,000
		Std Dev	16,263	—	4,810	—	—	—
		Count	2	0	6	0	0	1
	Hospital or lab	Median	20,000	—	28,300	—	—	30,000
		Mean	18,667	—	29,900	—	—	30,000
		Std Dev	2,309	—	3,412	—	—	—
		Count	3	0	4	0	0	1
	Other	Median	18,500	—	28,000	—	21,000	26,450
		Mean	20,864	—	29,377	—	21,000	26,450
		Std Dev	7,778	—	4,399	—	—	71
		Count	11	0	13	0	1	2
TOTAL	Median		16,800	16,000	28,000	18,000	17,000	30,600
	Mean		17,552	17,551	30,783	19,609	19,380	34,336
	Std Dev		4,905	6,756	7,919	8,323	12,160	9,651
	Count		747	95	296	119	35	42

Table B-1a

CHEMISTRY GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1999 ACS Starting Salary Survey

		Highest Degree								
		BA/BS Chem			MS Chem			PHD Chem		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Employment Status	Full-time perm	36.7%	35.1%	35.9%	58.5%	48.4%	52.9%	43.8%	42.4%	42.9%
		623	621	1244	117	123	240	95	187	282
	Fulltime temp	9.6%	10.0%	9.8%	8.0%	5.5%	6.6%	6.5%	5.7%	5.9%
		163	176	339	16	14	30	14	25	39
	Postdoc/gra	42.4%	44.6%	43.5%	24.5%	36.6%	31.3%	43.3%	46.5%	45.4%
		719	788	1507	49	93	142	94	205	299
	Parttime perm	.7%	.8%	.8%	.0%	.4%	.2%	.9%	.0%	.3%
		12	15	27	0	1	1	2	0	2
	Parttime temp	2.9%	2.5%	2.7%	2.5%	1.6%	2.0%	.9%	1.4%	1.2%
		49	44	93	5	4	9	2	6	8
	Not empl seek	4.5%	5.2%	4.9%	3.5%	6.7%	5.3%	2.3%	2.5%	2.4%
		76	92	168	7	17	24	5	11	16
	Not empl not seek	3.2%	1.8%	2.5%	3.0%	.8%	1.8%	2.3%	1.6%	1.8%
		54	31	85	6	2	8	5	7	12
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		49.0%	51.0%	100.0%	44.1%	55.9%	100.0%	33.0%	67.0%	100.0%
		1696	1767	3463	200	254	454	217	441	658

Table B-1b

CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999, SEX, and DEGREE
1999 ACS Starting Salary Survey

		Highest Degree					
		BA/BS Chem			MS Chem		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
Are you planning advanced studies in the fall?	Yes, full-time	42.4%	44.6%	43.5%	24.5%	36.6%	31.3%
		719	788	1507	49	93	142
	Yes, part-time	5.2%	5.8%	5.5%	4.5%	6.7%	5.7%
		88	102	190	9	17	26
	No	52.4%	49.6%	51.0%	71.0%	56.7%	63.0%
		889	877	1766	142	144	286
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		49.0%	51.0%	100.0%	44.1%	55.9%	100.0%
		1696	1767	3463	200	254	454

Table B-2a

CHEMISTRY GRADUATES
by EMPLOYMENT STATUS, CITIZENSHIP, and DEGREE
1999 ACS Starting Salary Survey

				Citizenship				
				US Native	US Natlzed	US Perm Res	Temp visa	Total
Highest Degree	BA/BS Chem	Employment Status	Full-time perm	36.5%	34.0%	30.4%	31.7%	36.0%
				1099	91	41	13	1244
			Fulltime temp	9.3%	14.9%	11.1%	7.3%	9.7%
				279	40	15	3	337
			Postdoc/grad	44.2%	37.7%	38.5%	48.8%	43.5%
				1332	101	52	20	1505
			Parttime perm	.7%	1.1%	1.5%	.0%	.8%
				22	3	2	0	27
			Parttime temp	2.6%	1.5%	5.2%	7.3%	2.7%
				79	4	7	3	93
			Not empl seek	4.5%	6.7%	9.6%	4.9%	4.9%
				135	18	13	2	168
			Not empl not seek	2.3%	4.1%	3.7%	.0%	2.5%
				69	11	5	0	85
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				87.2%	7.7%	3.9%	1.2%	100.0%
				3015	268	135	41	3459
	MS Chem	Employment Status	Full-time perm	59.1%	43.8%	54.5%	35.9%	53.1%
				182	14	12	33	241
			Fulltime temp	5.5%	9.4%	22.7%	6.5%	6.8%
				17	3	5	6	31
			Postdoc/grad	26.3%	28.1%	13.6%	52.2%	31.1%
				81	9	3	48	141
			Parttime perm	.3%	.0%	.0%	.0%	.2%
				1	0	0	0	1
			Parttime temp	1.9%	.0%	4.5%	1.1%	1.8%
				6	0	1	1	8
			Not empl seek	4.9%	15.6%	4.5%	3.3%	5.3%
				15	5	1	3	24
			Not empl not seek	1.9%	3.1%	.0%	1.1%	1.8%
				6	1	0	1	8
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				67.8%	7.0%	4.8%	20.3%	100.0%
				308	32	22	92	454
	PHD Chem	Employment Status	Full-time perm	47.7%	45.5%	53.5%	28.0%	42.8%
				199	10	23	49	281
			Fulltime temp	7.7%	9.1%	2.3%	2.9%	6.1%
				32	2	1	5	40
			Postdoc/grad	39.3%	36.4%	41.9%	62.3%	45.5%
				164	8	18	109	299
			Parttime perm	.2%	.0%	.0%	.0%	.2%
				1	0	0	0	1
			Parttime temp	1.7%	4.5%	.0%	.0%	1.2%
				7	1	0	0	8
			Not empl seek	1.7%	.0%	2.3%	4.6%	2.4%
				7	0	1	8	16
			Not empl not seek	1.7%	4.5%	.0%	2.3%	1.8%
				7	1	0	4	12
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				63.5%	3.3%	6.5%	26.6%	100.0%
				417	22	43	175	657

Table B-2b

CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999, CITIZENSHIP, and DEGREE
1999 ACS Starting Salary Survey

				Citizenship				
				US Native	US Natlzed	US Perm Res	Temp visa	Total
Highest Degree	BA/BS Chem	Are you planning advanced studies in the fall?	Yes, full-time	44.2%	37.7%	38.5%	48.8%	43.5%
				1332	101	52	20	1505
			Yes, part-time	5.0%	9.3%	7.4%	7.3%	5.5%
				152	25	10	3	190
			No	50.8%	53.0%	54.1%	43.9%	51.0%
				1531	142	73	18	1764
			Total	100.0%	100.0%	100.0%	100.0%	100.0%
				87.2%	7.7%	3.9%	1.2%	100.0%
				3015	268	135	41	3459
	MS Chem	Are you planning advanced studies in the fall?	Yes, full-time	26.3%	28.1%	13.6%	52.2%	31.1%
				81	9	3	48	141
			Yes, part-time	5.8%	18.8%	.0%	2.2%	5.7%
				18	6	0	2	26
			No	67.9%	53.1%	86.4%	45.7%	63.2%
				209	17	19	42	287
			Total	100.0%	100.0%	100.0%	100.0%	100.0%
				67.8%	7.0%	4.8%	20.3%	100.0%
				308	32	22	92	454

Table B-3a

CHEMISTRY GRADUATES
by EMPLOYMENT STATUS, ETHNICITY, and DEGREE
1999 ACS Starting Salary Survey

				RACE						
				Amer Indian	Asian	Black	Hisp	White	Other	Total
Highest Degree	BA/BS Chem	Employment Status	Full-time perm	38.1%	30.7%	31.4%	34.8%	37.6%	23.0%	36.1%
				8	123	44	55	993	17	1240
			Fulltime temp	9.5%	10.0%	10.7%	17.1%	9.1%	13.5%	9.7%
				2	40	15	27	240	10	334
			Postdoc/grad	42.9%	42.4%	36.4%	37.3%	44.2%	45.9%	43.4%
				9	170	51	59	1169	34	1492
			Parttime perm	.0%	1.0%	1.4%	.0%	.8%	.0%	.8%
				0	4	2	0	21	0	27
			Parttime temp	4.8%	2.7%	2.1%	1.9%	2.7%	2.7%	2.6%
				1	11	3	3	71	2	91
			Not empl seek	4.8%	9.2%	15.0%	5.1%	3.6%	6.8%	4.9%
				1	37	21	8	96	5	168
			Not empl not seek	.0%	4.0%	2.9%	3.8%	2.0%	8.1%	2.4%
				0	16	4	6	52	6	84
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.6%	11.7%	4.1%	4.6%	76.9%	2.2%	100.0%
				21	401	140	158	2642	74	3436
	MS Chem	Employment Status	Full-time perm	100.0%	40.6%	62.5%	27.8%	58.8%	30.0%	52.8%
				1	43	10	5	174	3	236
			Fulltime temp	.0%	10.4%	.0%	5.6%	6.4%	.0%	6.9%
				0	11	0	1	19	0	31
			Postdoc/grad	.0%	41.5%	25.0%	61.1%	24.7%	70.0%	31.1%
				0	44	4	11	73	7	139
			Parttime perm	.0%	.0%	.0%	.0%	.3%	.0%	.2%
				0	0	0	0	1	0	1
			Parttime temp	.0%	1.9%	.0%	5.6%	2.0%	.0%	2.0%
				0	2	0	1	6	0	9
			Not empl seek	.0%	4.7%	12.5%	.0%	5.4%	.0%	5.1%
				0	5	2	0	16	0	23
			Not empl not seek	.0%	.9%	.0%	.0%	2.4%	.0%	1.8%
				0	1	0	0	7	0	8
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.2%	23.7%	3.6%	4.0%	66.2%	2.2%	100.0%
				1	106	16	18	296	10	447
	PHD Chem	Employment Status	Full-time perm	100.0%	37.8%	36.0%	45.8%	45.5%	22.2%	42.8%
				2	59	9	11	193	4	278
			Fulltime temp	.0%	.6%	.0%	4.2%	8.5%	.0%	5.9%
				0	1	0	1	36	0	38
			Postdoc/grad	.0%	53.8%	48.0%	45.8%	41.5%	77.8%	45.8%
				0	84	12	11	176	14	297
			Parttime perm	.0%	.0%	4.0%	.0%	.2%	.0%	.3%
				0	0	1	0	1	0	2
			Parttime temp	.0%	.6%	.0%	4.2%	1.4%	.0%	1.2%
				0	1	0	1	6	0	8
			Not empl seek	.0%	3.8%	12.0%	.0%	1.7%	.0%	2.5%
				0	6	3	0	7	0	16
			Not empl not seek	.0%	3.2%	.0%	.0%	1.2%	.0%	1.5%
				0	5	0	0	5	0	10
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.3%	24.0%	3.9%	3.7%	65.3%	2.8%	100.0%
				2	156	25	24	424	18	649

Hispanics are an exclusive group. All others are NonHispanic.

Table B-3b

CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999, ETHNICITY, and DEGREE
1999 ACS Starting Salary Survey

				RACE						
				Amer Indian	Asian	Black	Hisp	White	Other	Total
Highest Degree	BA/BS Chem	Are you planning advanced studies in the fall?	Yes, full-time	42.9%	42.4%	36.4%	37.3%	44.2%	45.9%	43.4%
				9	170	51	59	1169	34	1492
			Yes, part-time	4.8%	5.0%	8.6%	12.0%	5.0%	5.4%	5.5%
				1	20	12	19	133	4	189
			No	52.4%	52.6%	55.0%	50.6%	50.7%	48.6%	51.1%
				11	211	77	80	1340	36	1755
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.6%	11.7%	4.1%	4.6%	76.9%	2.2%	100.0%
				21	401	140	158	2642	74	3436
	MS Chem	Are you planning advanced studies in the fall?	Yes, full-time	.0%	41.5%	25.0%	61.1%	24.7%	70.0%	31.1%
				0	44	4	11	73	7	139
			Yes, part-time	100.0%	5.7%	.0%	.0%	6.4%	.0%	5.8%
				1	6	0	0	19	0	26
			No	.0%	52.8%	75.0%	38.9%	68.9%	30.0%	63.1%
				0	56	12	7	204	3	282
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.2%	23.7%	3.6%	4.0%	66.2%	2.2%	100.0%
				1	106	16	18	296	10	447

Hispanics are an exclusive group. All others are NonHispanic.

Table B-4a

BS/BA CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CERTIFICATION TO ACS
1999 ACS Starting Salary Survey

		Certified to ACS		
		No	Yes	Total
Employment Status	Full-time	36.4%	35.2%	35.9%
	perm	708	538	1246
	Fulltime	10.6%	8.8%	9.8%
	temp	207	135	342
	Postdoc/grad	40.8%	47.0%	43.5%
		795	717	1512
	Parttime	.8%	.7%	.8%
	perm	16	11	27
	Parttime	3.1%	2.2%	2.7%
	temp	60	34	94
	Not empl	5.4%	4.1%	4.8%
	seek	105	63	168
	Not empl not	2.9%	1.9%	2.4%
	seek	56	29	85
Total		100.0%	100.0%	100.0%
		100.0%	100.0%	100.0%
		1947	1527	3474

Table B-4b

BS/BA CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999 and CERTIFICATION TO ACS
1999 ACS Starting Salary Survey

		Certified to ACS		
		No	Yes	Total
Are you planning advanced studies in the fall?	Yes, full-time	40.8%	47.0%	43.5%
		795	717	1512
	Yes, part-time	5.7%	5.3%	5.5%
		111	81	192
	No	53.5%	47.7%	50.9%
		1041	729	1770
Total		100.0%	100.0%	100.0%
		100.0%	100.0%	100.0%
		1947	1527	3474

Table B-5

MASTERS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1999 ACS Starting Salary Survey

		Employment Status							
		Full-time perm	Fulltime temp	Postdoc/grad	Parttime perm	Parttime temp	Not empl seek	Not empl not seek	Total
FIELD	Analytical	19.3%	12.9%	11.1%	.0%	11.1%	29.2%	12.5%	16.5%
	chem	61.8%	5.3%	21.1%	.0%	1.3%	9.2%	1.3%	100.0%
		47	4	16	0	1	7	1	76
	Biochemistry	8.2%	9.7%	9.7%	.0%	.0%	4.2%	12.5%	8.5%
		51.3%	7.7%	35.9%	.0%	.0%	2.6%	2.6%	100.0%
		20	3	14	0	0	1	1	39
	Chemical ed	3.7%	.0%	1.4%	.0%	.0%	.0%	12.5%	2.6%
		75.0%	.0%	16.7%	.0%	.0%	.0%	8.3%	100.0%
		9	0	2	0	0	0	1	12
	Environm	1.6%	3.2%	2.8%	.0%	11.1%	4.2%	.0%	2.4%
	chem	36.4%	9.1%	36.4%	.0%	9.1%	9.1%	.0%	100.0%
		4	1	4	0	1	1	0	11
	General	20.6%	29.0%	18.1%	100.0%	11.1%	16.7%	.0%	19.8%
	chem	54.9%	9.9%	28.6%	1.1%	1.1%	4.4%	.0%	100.0%
		50	9	26	1	1	4	0	91
	Inorganic	4.9%	12.9%	10.4%	.0%	.0%	.0%	.0%	6.7%
	chem	38.7%	12.9%	48.4%	.0%	.0%	.0%	.0%	100.0%
		12	4	15	0	0	0	0	31
	Material sci	.4%	.0%	.7%	.0%	.0%	.0%	.0%	.4%
		50.0%	.0%	50.0%	.0%	.0%	.0%	.0%	100.0%
		1	0	1	0	0	0	0	2
	Med/Pharm	.8%	9.7%	.0%	.0%	.0%	4.2%	.0%	1.3%
	chem	33.3%	50.0%	.0%	.0%	.0%	16.7%	.0%	100.0%
		2	3	0	0	0	1	0	6
	Organic	23.9%	16.1%	22.9%	.0%	22.2%	16.7%	25.0%	22.6%
	chem	55.8%	4.8%	31.7%	.0%	1.9%	3.8%	1.9%	100.0%
		58	5	33	0	2	4	2	104
	Physical	6.2%	6.5%	16.0%	.0%	22.2%	16.7%	.0%	10.0%
	chem	32.6%	4.3%	50.0%	.0%	4.3%	8.7%	.0%	100.0%
		15	2	23	0	2	4	0	46
	Polymer	4.1%	.0%	2.8%	.0%	.0%	4.2%	.0%	3.3%
	chem	66.7%	.0%	26.7%	.0%	.0%	6.7%	.0%	100.0%
		10	0	4	0	0	1	0	15
	Other chem	.4%	.0%	.0%	.0%	.0%	.0%	.0%	.2%
		100.0%	.0%	.0%	.0%	.0%	.0%	.0%	100.0%
		1	0	0	0	0	0	0	1
	Other	5.8%	.0%	4.2%	.0%	22.2%	4.2%	37.5%	5.7%
		53.8%	.0%	23.1%	.0%	7.7%	3.8%	11.5%	100.0%
		14	0	6	0	2	1	3	26
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		52.8%	6.7%	31.3%	.2%	2.0%	5.2%	1.7%	100.0%
		243	31	144	1	9	24	8	460

Table B-6

PhD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1999 ACS Starting Salary Survey

		Employment Status							
		Full-time perm	Fulltime temp	Postdoc/grad	Parttime perm	Parttime temp	Not empl seek	Not empl not seek	Total
FIELD	Analytical	22.7%	20.0%	12.3%	.0%	50.0%	18.8%	8.3%	17.7%
	chem	54.7%	6.8%	31.6%	.0%	3.4%	2.6%	.9%	100.0%
		64	8	37	0	4	3	1	117
	Biochemistry	7.8%	15.0%	11.7%	.0%	.0%	31.3%	.0%	10.3%
		32.4%	8.8%	51.5%	.0%	.0%	7.4%	.0%	100.0%
		22	6	35	0	0	5	0	68
	Chemical ed	1.8%	.0%	.3%	.0%	.0%	.0%	.0%	.9%
		83.3%	.0%	16.7%	.0%	.0%	.0%	.0%	100.0%
		5	0	1	0	0	0	0	6
	Environm	.4%	2.5%	.3%	.0%	.0%	.0%	.0%	.5%
	chem	33.3%	33.3%	33.3%	.0%	.0%	.0%	.0%	100.0%
		1	1	1	0	0	0	0	3
	General	1.1%	5.0%	4.3%	50.0%	12.5%	.0%	16.7%	3.3%
	chem	13.6%	9.1%	59.1%	4.5%	4.5%	.0%	9.1%	100.0%
		3	2	13	1	1	0	2	22
	Inorganic	13.8%	25.0%	15.0%	.0%	12.5%	6.3%	33.3%	15.2%
	chem	39.0%	10.0%	45.0%	.0%	1.0%	1.0%	4.0%	100.0%
		39	10	45	0	1	1	4	100
	Material sci	1.8%	.0%	.3%	.0%	12.5%	.0%	.0%	1.1%
		71.4%	.0%	14.3%	.0%	14.3%	.0%	.0%	100.0%
		5	0	1	0	1	0	0	7
	Med/Pharm	1.1%	.0%	.3%	.0%	.0%	.0%	.0%	.6%
	chem	75.0%	.0%	25.0%	.0%	.0%	.0%	.0%	100.0%
		3	0	1	0	0	0	0	4
	Organic	25.9%	10.0%	31.3%	.0%	12.5%	18.8%	16.7%	26.8%
	chem	41.2%	2.3%	53.1%	.0%	.6%	1.7%	1.1%	100.0%
		73	4	94	0	1	3	2	177
	Physical	13.5%	12.5%	14.7%	.0%	.0%	18.8%	8.3%	13.8%
	chem	41.8%	5.5%	48.4%	.0%	.0%	3.3%	1.1%	100.0%
		38	5	44	0	0	3	1	91
	Polymer	4.6%	.0%	1.7%	50.0%	.0%	.0%	8.3%	3.0%
	chem	65.0%	.0%	25.0%	5.0%	.0%	.0%	5.0%	100.0%
		13	0	5	1	0	0	1	20
	Other chem	.0%	2.5%	.0%	.0%	.0%	.0%	.0%	.2%
		.0%	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%
		0	1	0	0	0	0	0	1
	Other	5.7%	7.5%	7.7%	.0%	.0%	6.3%	8.3%	6.7%
		36.4%	6.8%	52.3%	.0%	.0%	2.3%	2.3%	100.0%
		16	3	23	0	0	1	1	44
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		42.7%	6.1%	45.5%	.3%	1.2%	2.4%	1.8%	100.0%
		282	40	300	2	8	16	12	660

Table B-7a

CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1999 ACS Starting Salary Survey

		Highest Degree								
		BS Chem eng			MS Chem eng			PHD Chem eng		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Employmen	Full-time	73.7%	69.6%	71.3%	46.3%	70.3%	64.5%	60.5%	71.9%	69.6%
Status	perm	404	568	972	19	90	109	23	110	133
	Fulltime	4.4%	4.4%	4.4%	2.4%	2.3%	2.4%	2.6%	1.3%	1.6%
	temp	24	36	60	1	3	4	1	2	3
	Postdoc/gra	13.5%	16.1%	15.0%	31.7%	24.2%	26.0%	26.3%	20.9%	22.0%
		74	131	205	13	31	44	10	32	42
	Parttime	.0%	.6%	.4%	2.4%	.0%	.6%	.0%	.7%	.5%
	perm	0	5	5	1	0	1	0	1	1
	Parttime	.7%	1.0%	.9%	.0%	.0%	.0%	2.6%	1.3%	1.6%
	temp	4	8	12	0	0	0	1	2	3
	Not empl	6.4%	7.8%	7.3%	12.2%	3.1%	5.3%	.0%	2.6%	2.1%
	seek	35	64	99	5	4	9	0	4	4
	Not empl no	1.3%	.5%	.8%	4.9%	.0%	1.2%	7.9%	1.3%	2.6%
	seek	7	4	11	2	0	2	3	2	5
Total		00.0%	00.0%	00.0%	00.0%	00.0%	00.0%	00.0%	00.0%	00.0%
		40.2%	59.8%	00.0%	24.3%	75.7%	00.0%	19.9%	80.1%	00.0%
		548	816	1364	41	128	169	38	153	191

Table B-7b

CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999, SEX, and DEGREE
1999 ACS Starting Salary Survey

		Highest Degree					
		BS Chem eng			MS Chem eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
Are you	Yes,	13.5%	16.1%	15.0%	31.7%	24.2%	26.0%
planning	full-time	74	131	205	13	31	44
advanced	Yes,	5.8%	5.9%	5.9%	2.4%	3.1%	3.0%
studies in	part-time	32	48	80	1	4	5
the fall?	No	80.7%	78.1%	79.1%	65.9%	72.7%	71.0%
		442	637	1079	27	93	120
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		40.2%	59.8%	100.0%	24.3%	75.7%	100.0%
		548	816	1364	41	128	169

Table B-8a

CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS, CITIZENSHIP, and DEGREE
1999 ACS Starting Salary Survey

				Citizenship				
				US Native	US Natlzed	US Perm Res	Temp visa	Total
Highest Degree	BS Chem eng	Employment Status	Full-time perm	73.6%	57.0%	54.0%	50.0%	71.3%
				877	57	27	12	973
			Fulltime temp	4.2%	6.0%	8.0%	.0%	4.4%
				50	6	4	0	60
			Postdoc/grad	13.9%	20.0%	20.0%	41.7%	15.0%
				165	20	10	10	205
			Parttime perm	.4%	.0%	.0%	.0%	.4%
				5	0	0	0	5
			Parttime temp	.8%	1.0%	2.0%	.0%	.9%
				10	1	1	0	12
			Not empl seek	6.4%	15.0%	14.0%	4.2%	7.3%
				76	15	7	1	99
			Not empl not seek	.7%	1.0%	2.0%	4.2%	.8%
				8	1	1	1	11
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				87.3%	7.3%	3.7%	1.8%	100.0%
				1191	100	50	24	1365
	MS Chem eng	Employment Status	Full-time perm	70.6%	100.0%	50.0%	41.2%	64.5%
				84	6	5	14	109
			Fulltime temp	2.5%	.0%	10.0%	.0%	2.4%
				3	0	1	0	4
			Postdoc/grad	18.5%	.0%	30.0%	55.9%	26.0%
				22	0	3	19	44
			Parttime perm	.8%	.0%	.0%	.0%	.6%
				1	0	0	0	1
			Not empl seek	5.9%	.0%	10.0%	2.9%	5.3%
				7	0	1	1	9
			Not empl not seek	1.7%	.0%	.0%	.0%	1.2%
				2	0	0	0	2
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				70.4%	3.6%	5.9%	20.1%	100.0%
				119	6	10	34	169
	PHD Chem eng	Employment Status	Full-time perm	74.2%	63.6%	50.0%	63.3%	70.0%
				92	7	3	31	133
			Fulltime temp	1.6%	.0%	.0%	2.0%	1.6%
				2	0	0	1	3
			Postdoc/grad	17.7%	27.3%	33.3%	28.6%	21.6%
				22	3	2	14	41
			Parttime perm	.8%	.0%	.0%	.0%	.5%
				1	0	0	0	1
			Parttime temp	.8%	9.1%	.0%	2.0%	1.6%
				1	1	0	1	3
			Not empl seek	1.6%	.0%	16.7%	2.0%	2.1%
				2	0	1	1	4
			Not empl not seek	3.2%	.0%	.0%	2.0%	2.6%
				4	0	0	1	5
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				65.3%	5.8%	3.2%	25.8%	100.0%
				124	11	6	49	190

Table B-8b

CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999, CITIZENSHIP, and DEGREE
1999 ACS Starting Salary Survey

				Citizenship				
				US Native	US Natlzed	US Perm Res	Temp visa	Total
Highest Degree	BS Chem eng	Are you planning advanced studies in the fall?	Yes, full-time	13.9%	20.0%	20.0%	41.7%	15.0%
				165	20	10	10	205
			Yes, part-time	5.7%	8.0%	8.0%	.0%	5.9%
				68	8	4	0	80
			No	80.4%	72.0%	72.0%	58.3%	79.1%
				958	72	36	14	1080
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				87.3%	7.3%	3.7%	1.8%	100.0%
				1191	100	50	24	1365
	MS Chem eng	Are you planning advanced studies in the fall?	Yes, full-time	18.5%	.0%	30.0%	55.9%	26.0%
				22	0	3	19	44
			Yes, part-time	1.7%	16.7%	10.0%	2.9%	3.0%
				2	1	1	1	5
			No	79.8%	83.3%	60.0%	41.2%	71.0%
				95	5	6	14	120
		Total		100.0%	100.0%	100.0%	100.0%	100.0%
				70.4%	3.6%	5.9%	20.1%	100.0%
				119	6	10	34	169

Table B-9a

CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS, ETHNICITY, and DEGREE
1999 ACS Starting Salary Survey

				RACE						
				Amer Indian	Asian	Black	Hisp	White	Other	Total
Highest Degree	BS Chem eng	Employment Status	Full-time perm	88.9%	59.9%	63.2%	67.3%	74.5%	52.6%	71.5%
				8	106	48	35	758	10	965
			Fulltime temp	.0%	2.8%	11.8%	3.8%	4.1%	5.3%	4.4%
				0	5	9	2	42	1	59
			Postdoc/grad	11.1%	22.6%	7.9%	21.2%	13.5%	31.6%	14.9%
				1	40	6	11	137	6	201
			Parttime perm	.0%	.0%	.0%	.0%	.4%	5.3%	.4%
				0	0	0	0	4	1	5
			Parttime temp	.0%	2.3%	3.9%	1.9%	.4%	.0%	.9%
				0	4	3	1	4	0	12
			Not empl seek	.0%	11.3%	7.9%	5.8%	6.6%	5.3%	7.2%
				0	20	6	3	67	1	97
			Not empl not seek	.0%	1.1%	5.3%	.0%	.5%	.0%	.8%
				0	2	4	0	5	0	11
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.7%	13.1%	5.6%	3.9%	75.3%	1.4%	100.0%
				9	177	76	52	1017	19	1350
	MS Chem eng	Employment Status	Full-time perm	.0%	60.0%	55.6%	33.3%	69.4%	60.0%	64.5%
				0	21	5	3	77	3	109
			Fulltime temp	.0%	.0%	.0%	22.2%	1.8%	.0%	2.4%
				0	0	0	2	2	0	4
			Postdoc/grad	.0%	37.1%	44.4%	44.4%	19.8%	20.0%	26.0%
				0	13	4	4	22	1	44
			Parttime perm	.0%	.0%	.0%	.0%	.9%	.0%	.6%
				0	0	0	0	1	0	1
			Not empl seek	.0%	.0%	.0%	.0%	7.2%	20.0%	5.3%
				0	0	0	0	8	1	9
			Not empl not seek	.0%	2.9%	.0%	.0%	.9%	.0%	1.2%
				0	1	0	0	1	0	2
		Total		.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.0%	20.7%	5.3%	5.3%	65.7%	3.0%	100.0%
				0	35	9	9	111	5	169
	PHD Chem eng	Employment Status	Full-time perm	.0%	58.8%	100.0%	100.0%	70.4%	100.0%	69.3%
				0	30	3	4	88	6	131
			Fulltime temp	.0%	.0%	.0%	.0%	2.4%	.0%	1.6%
				0	0	0	0	3	0	3
			Postdoc/grad	.0%	33.3%	.0%	.0%	20.0%	.0%	22.2%
				0	17	0	0	25	0	42
			Parttime perm	.0%	.0%	.0%	.0%	.8%	.0%	.5%
				0	0	0	0	1	0	1
			Parttime temp	.0%	3.9%	.0%	.0%	.8%	.0%	1.6%
				0	2	0	0	1	0	3
			Not empl seek	.0%	2.0%	.0%	.0%	2.4%	.0%	2.1%
				0	1	0	0	3	0	4
			Not empl not seek	.0%	2.0%	.0%	.0%	3.2%	.0%	2.6%
				0	1	0	0	4	0	5
		Total		.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.0%	27.0%	1.6%	2.1%	66.1%	3.2%	100.0%
				0	51	3	4	125	6	189

Hispanics are an exclusive group. All others are NonHispanic.

Table B-9b

CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1999, ETHNICITY, and DEGREE
1999 ACS Starting Salary Survey

				RACE						
				Amer Indian	Asian	Black	Hisp	White	Other	Total
Highest Degree	BS Chem eng	Are you planning advanced studies in the fall?	Yes, full-time	11.1%	22.6%	7.9%	21.2%	13.5%	31.6%	14.9%
				1	40	6	11	137	6	201
			Yes, part-time	.0%	6.2%	5.3%	9.6%	5.8%	5.3%	5.9%
				0	11	4	5	59	1	80
			No	88.9%	71.2%	86.8%	69.2%	80.7%	63.2%	79.2%
				8	126	66	36	821	12	1069
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.7%	13.1%	5.6%	3.9%	75.3%	1.4%	100.0%
				9	177	76	52	1017	19	1350
	MS Chem eng	Are you planning advanced studies in the fall?	Yes, full-time	.0%	37.1%	44.4%	44.4%	19.8%	20.0%	26.0%
				0	13	4	4	22	1	44
			Yes, part-time	.0%	5.7%	.0%	.0%	2.7%	.0%	3.0%
				0	2	0	0	3	0	5
			No	.0%	57.1%	55.6%	55.6%	77.5%	80.0%	71.0%
				0	20	5	5	86	4	120
		Total		.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				.0%	20.7%	5.3%	5.3%	65.7%	3.0%	100.0%
				0	35	9	9	111	5	169

Hispanics are an exclusive group. All others are NonHispanic.

Table C-1

CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1999
by FIELD OF ADVANCED STUDY, DEGREE, and SEX
1999 ACS Starting Salary Survey

		Highest Degree					
		BA/BS Chem			MS Chem		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
What field of graduate studies?	Chemistry	22.7%	27.5%	25.3%	33.3%	17.6%	23.1%
		20	28	48	3	3	6
	Other physical sci	2.3%	3.9%	3.2%	22.2%	11.8%	15.4%
		2	4	6	2	2	4
	Chem/biochem engineering	4.5%	3.9%	4.2%	.0%	.0%	.0%
		4	4	8	0	0	0
	Other engineering	.0%	2.0%	1.1%	.0%	.0%	.0%
		0	2	2	0	0	0
	Biochemistry	13.6%	3.9%	8.4%	11.1%	17.6%	15.4%
		12	4	16	1	3	4
	Life science	2.3%	2.9%	2.6%	.0%	.0%	.0%
		2	3	5	0	0	0
	Medicine	3.4%	3.9%	3.7%	.0%	.0%	.0%
		3	4	7	0	0	0
	Dentistry	.0%	2.9%	1.6%	.0%	.0%	.0%
		0	3	3	0	0	0
	Pharmacy/pharmacology	5.7%	2.0%	3.7%	.0%	.0%	.0%
		5	2	7	0	0	0
	Business/mgmt	9.1%	17.6%	13.7%	.0%	5.9%	3.8%
		8	18	26	0	1	1
	Education	9.1%	10.8%	10.0%	11.1%	11.8%	11.5%
		8	11	19	1	2	3
	Law	.0%	1.0%	.5%	.0%	11.8%	7.7%
		0	1	1	0	2	2
	Other	27.3%	17.6%	22.1%	22.2%	23.5%	23.1%
		24	18	42	2	4	6
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		88	102	190	9	17	26

Table C-2

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1999
by FIELD OF ADVANCED STUDY and CERTIFICATION
1999 ACS Starting Salary Survey

		Certified to ACS		
		No	Yes	Total
What field of graduate studies?	Chemistry	19.8%	32.1%	25.0%
		22	26	48
	Other physical sci	2.7%	3.7%	3.1%
		3	3	6
	Chem/biochem engineering	3.6%	4.9%	4.2%
		4	4	8
	Other engineering	.0%	2.5%	1.0%
		0	2	2
	Biochemistry	8.1%	8.6%	8.3%
		9	7	16
	Life science	3.6%	1.2%	2.6%
		4	1	5
	Medicine	4.5%	3.7%	4.2%
		5	3	8
	Dentistry	.9%	2.5%	1.6%
		1	2	3
	Pharmacy/pharmacology	5.4%	1.2%	3.6%
		6	1	7
	Business/mgmt	11.7%	16.0%	13.5%
		13	13	26
	Education	10.8%	9.9%	10.4%
		12	8	20
	Law	.0%	1.2%	.5%
		0	1	1
	Other	28.8%	12.3%	21.9%
		32	10	42
Total		100.0%	100.0%	100.0%
		111	81	192

Table C-3

CHEMICAL ENG GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1999
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1999 ACS Starting Salary Survey

		Highest Degree					
		BS Chem eng			MS Chem eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
What field of graduate studies?	Chemistry	3.3%	2.1%	2.6%	100.0%	50.0%	60.0%
		1	1	2	1	2	3
	Other physical sci	.0%	14.9%	9.1%	.0%	25.0%	20.0%
		0	7	7	0	1	1
	Chem/biochem engineering	20.0%	27.7%	24.7%	.0%	25.0%	20.0%
		6	13	19	0	1	1
	Other engineering	10.0%	17.0%	14.3%	.0%	.0%	.0%
		3	8	11	0	0	0
	Pharmacy/pharmacology	6.7%	.0%	2.6%	.0%	.0%	.0%
		2	0	2	0	0	0
	Business/mgmt	43.3%	29.8%	35.1%	.0%	.0%	.0%
		13	14	27	0	0	0
	Education	.0%	2.1%	1.3%	.0%	.0%	.0%
		0	1	1	0	0	0
	Other	16.7%	6.4%	10.4%	.0%	.0%	.0%
		5	3	8	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		30	47	77	1	4	5

Table C-4

CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1999
by FIELD OF ADVANCED STUDY, DEGREE, and SEX
1999 ACS Starting Salary Survey

		Highest Degree					
		BA/BS Chem			MS Chem		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
What field of graduate studies?	Chemistry	32.9%	38.1%	35.6%	71.4%	75.3%	73.9%
		236	300	536	35	70	105
	Other physical sci	1.1%	1.4%	1.3%	.0%	2.2%	1.4%
		8	11	19	0	2	2
	Chem/biochem engineering	1.0%	2.0%	1.5%	2.0%	1.1%	1.4%
		7	16	23	1	1	2
	Other engineering	1.3%	.8%	1.0%	2.0%	2.2%	2.1%
		9	6	15	1	2	3
	Biochemistry	5.2%	5.8%	5.5%	4.1%	5.4%	4.9%
		37	46	83	2	5	7
	Life science	2.6%	1.1%	1.9%	2.0%	1.1%	1.4%
		19	9	28	1	1	2
	Medicine	21.4%	27.9%	24.8%	4.1%	6.5%	5.6%
		154	220	374	2	6	8
	Dentistry	2.5%	4.4%	3.5%	.0%	.0%	.0%
		18	35	53	0	0	0
	Pharmacy/pharmacology	7.7%	3.8%	5.6%	.0%	1.1%	.7%
		55	30	85	0	1	1
	Business/mgmt	.4%	.4%	.4%	2.0%	.0%	.7%
		3	3	6	1	0	1
	Education	4.3%	1.1%	2.7%	.0%	1.1%	.7%
		31	9	40	0	1	1
	Law	2.5%	2.5%	2.5%	6.1%	.0%	2.1%
		18	20	38	3	0	3
	Other	17.1%	10.5%	13.7%	6.1%	4.3%	4.9%
		123	83	206	3	4	7
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		718	788	1506	49	93	142

Table C-5

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1999
by FIELD OF ADVANCED STUDY and CERTIFICATION
1999 ACS Starting Salary Survey

		Certified to ACS		
		No	Yes	Total
What field of graduate studies?	Chemistry	18.5%	52.4%	34.2%
		170	419	589
	Other physical sci	1.4%	1.5%	1.5%
		13	12	25
	Chem/biochem engineering	1.6%	2.1%	1.9%
		15	17	32
	Other engineering	.5%	1.5%	1.0%
		5	12	17
	Biochemistry	6.4%	5.1%	5.8%
		59	41	100
	Life science	2.3%	1.5%	1.9%
		21	12	33
	Medicine	29.9%	13.8%	22.4%
		275	110	385
	Dentistry	4.9%	1.4%	3.3%
		45	11	56
	Pharmacy/pharmacology	7.4%	3.3%	5.5%
		68	26	94
	Business/mgmt	2.0%	2.1%	2.0%
		18	17	35
	Education	4.1%	2.9%	3.5%
		38	23	61
	Law	2.2%	2.4%	2.3%
		20	19	39
	Other	18.9%	10.1%	14.8%
		174	81	255
Total		100.0%	100.0%	100.0%
		921	800	1721

Table C-6

CHEMICAL ENG GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1999
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1999 ACS Starting Salary Survey

		Highest Degree					
		BS Chem eng			MS Chem eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
What field of graduate studies?	Chemistry	.0%	3.8%	2.5%	.0%	.0%	.0%
		0	5	5	0	0	0
	Other physical sci	.0%	2.3%	1.5%	.0%	6.5%	4.5%
		0	3	3	0	2	2
	Chem/biochem engineering	55.4%	59.2%	57.8%	100.0%	74.2%	81.8%
		41	77	118	13	23	36
	Other engineering	12.2%	6.2%	8.3%	.0%	.0%	.0%
		9	8	17	0	0	0
	Biochemistry	1.4%	.8%	1.0%	.0%	.0%	.0%
		1	1	2	0	0	0
	Life science	1.4%	.8%	1.0%	.0%	.0%	.0%
		1	1	2	0	0	0
	Medicine	13.5%	10.0%	11.3%	.0%	3.2%	2.3%
		10	13	23	0	1	1
	Dentistry	1.4%	.0%	.5%	.0%	.0%	.0%
		1	0	1	0	0	0
	Business/mgmt	1.4%	2.3%	2.0%	.0%	3.2%	2.3%
		1	3	4	0	1	1
	Education	1.4%	.8%	1.0%	.0%	.0%	.0%
		1	1	2	0	0	0
	Law	4.1%	6.2%	5.4%	.0%	3.2%	2.3%
		3	8	11	0	1	1
	Other	8.1%	7.7%	7.8%	.0%	9.7%	6.8%
		6	10	16	0	3	3
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		74	130	204	13	31	44

Table D-1

BS CHEMISTRY AND CHEMICAL ENGINGEERING GRADUATES
by AGE and SEX
1999 ACS Starting Salary Survey

		Highest Degree					
		BS/BA Chem			BS Chem Eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
Age	under 20	.1%	.0%	.0%	.0%	.0%	.0%
		1	0	1	0	0	0
	20	.1%	.1%	.1%	.0%	.4%	.2%
		1	1	2	0	3	3
	21	6.0%	3.1%	4.5%	3.5%	3.2%	3.3%
		101	55	156	19	26	45
	22	48.4%	39.4%	43.8%	37.5%	29.4%	32.6%
		820	695	1515	205	239	444
	23	20.5%	25.1%	22.9%	33.5%	35.9%	34.9%
		348	443	791	183	292	475
	24	8.6%	10.8%	9.7%	12.8%	15.8%	14.6%
		146	191	337	70	129	199
	25	3.8%	4.4%	4.1%	5.1%	3.8%	4.3%
		64	78	142	28	31	59
	26	1.8%	3.3%	2.6%	1.8%	1.8%	1.8%
		31	58	89	10	15	25
	27	2.0%	2.5%	2.3%	.9%	1.7%	1.4%
		34	44	78	5	14	19
	28	1.8%	2.0%	1.9%	1.1%	1.7%	1.5%
		31	35	66	6	14	20
	29	1.4%	2.0%	1.7%	.4%	1.0%	.7%
		24	36	60	2	8	10
	30 to 34	3.0%	4.6%	3.8%	2.0%	3.7%	3.0%
		51	81	132	11	30	41
	35 to 39	1.1%	1.9%	1.5%	.5%	.9%	.7%
		18	33	51	3	7	10
	40 to 49	1.1%	.8%	.9%	.5%	.7%	.7%
		18	14	32	3	6	9
	50 to 59	.2%	.1%	.1%	.0%	.0%	.0%
		3	1	4	0	0	0
	60 to 64	.1%	.0%	.0%	.0%	.0%	.0%
		1	0	1	0	0	0
	65 and over	.1%	.0%	.1%	.4%	.0%	.1%
		2	0	2	2	0	2
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		1694	1765	3459	547	814	1361

Table D-2

MS CHEMISTRY AND CHEMICAL ENGINGEERING GRADUATES
by AGE and SEX
1999 ACS Starting Salary Survey

		Highest Degree					
		MS Chem			MS Chem Eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
Age	22	1.0%	.8%	.9%	.0%	.8%	.6%
		2	2	4	0	1	1
	23	3.6%	2.8%	3.1%	7.3%	5.5%	5.9%
		7	7	14	3	7	10
	24	10.3%	8.7%	9.4%	9.8%	14.1%	13.0%
		20	22	42	4	18	22
	25	17.5%	12.2%	14.5%	24.4%	21.1%	21.9%
		34	31	65	10	27	37
	26	13.9%	12.6%	13.2%	26.8%	10.2%	14.2%
		27	32	59	11	13	24
	27	8.2%	10.6%	9.6%	12.2%	10.9%	11.2%
		16	27	43	5	14	19
	28	10.3%	8.3%	9.2%	7.3%	8.6%	8.3%
		20	21	41	3	11	14
	29	4.1%	5.5%	4.9%	2.4%	1.6%	1.8%
		8	14	22	1	2	3
	30 to 34	16.5%	17.7%	17.2%	4.9%	12.5%	10.7%
		32	45	77	2	16	18
	35 to 39	5.7%	10.2%	8.3%	4.9%	10.2%	8.9%
		11	26	37	2	13	15
	40 to 49	6.7%	9.1%	8.0%	.0%	3.9%	3.0%
		13	23	36	0	5	5
	50 to 59	.5%	1.2%	.9%	.0%	.8%	.6%
		1	3	4	0	1	1
	60 to 64	.5%	.0%	.2%	.0%	.0%	.0%
		1	0	1	0	0	0
	65 and over	1.0%	.4%	.7%	.0%	.0%	.0%
		2	1	3	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		194	254	448	41	128	169

Table D-3

PHD CHEMISTRY AND CHEMICAL ENGINGEERING GRADUATES
by AGE and SEX
1999 ACS Starting Salary Survey

		Highest Degree					
		PHD Chem			PHD Chem Eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
Age	22	.0%	.0%	.0%	.0%	.7%	.5%
		0	0	0	0	1	1
	24	.0%	.2%	.2%	.0%	.0%	.0%
		0	1	1	0	0	0
	25	.5%	1.1%	.9%	.0%	.7%	.5%
		1	5	6	0	1	1
	26	1.4%	1.8%	1.7%	5.3%	4.6%	4.7%
		3	8	11	2	7	9
	27	12.6%	10.6%	11.2%	15.8%	16.4%	16.3%
		27	46	73	6	25	31
	28	25.1%	17.9%	20.3%	26.3%	23.7%	24.2%
		54	78	132	10	36	46
	29	14.9%	14.4%	14.6%	13.2%	19.7%	18.4%
		32	63	95	5	30	35
	30 to 34	29.8%	35.3%	33.5%	36.8%	26.3%	28.4%
		64	154	218	14	40	54
	35 to 39	7.9%	13.5%	11.7%	2.6%	6.6%	5.8%
		17	59	76	1	10	11
	40 to 49	6.5%	4.6%	5.2%	.0%	1.3%	1.1%
		14	20	34	0	2	2
	50 to 59	1.4%	.2%	.6%	.0%	.0%	.0%
		3	1	4	0	0	0
	65 and	.0%	.2%	.2%	.0%	.0%	.0%
	over	0	1	1	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		215	436	651	38	152	190

Table D-4

POSTDOC CHEMISTRY AND CHEMICAL ENGINGEERING GRADUATES
by AGE and SEX
1999 ACS Starting Salary Survey

		Highest Degree					
		PHD Chem			PHD Chem Eng		
		Sex			Sex		
		Female	Male	Total	Female	Male	Total
Age	24	.0%	.5%	.3%	.0%	.0%	.0%
		0	1	1	0	0	0
	26	2.2%	2.9%	2.7%	20.0%	3.1%	7.1%
		2	6	8	2	1	3
	27	7.6%	11.3%	10.1%	.0%	25.0%	19.0%
		7	23	30	0	8	8
	28	27.2%	18.1%	20.9%	10.0%	25.0%	21.4%
		25	37	62	1	8	9
	29	16.3%	19.1%	18.2%	20.0%	15.6%	16.7%
		15	39	54	2	5	7
	30 to 34	32.6%	35.8%	34.8%	40.0%	25.0%	28.6%
		30	73	103	4	8	12
	35 to 39	6.5%	8.8%	8.1%	10.0%	6.3%	7.1%
		6	18	24	1	2	3
	40 to 49	7.6%	2.9%	4.4%	.0%	.0%	.0%
		7	6	13	0	0	0
	65 and	.0%	.5%	.3%	.0%	.0%	.0%
	over	0	1	1	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		92	204	296	10	32	42

Table E-1

OFFERS of FULL-TIME EMPLOYED INEXPERIENCED CHEMISTS
by DEGREE and SEX
1999 ACS Starting Salary Survey

		Highest Degree								
		BA/BS Chem			MS Chem			PHD Chem		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Offers of Employment	1	43.9%	42.6%	43.3%	40.4%	41.2%	40.8%	45.5%	45.8%	45.7%
		147	124	271	21	21	42	5	11	16
	2	31.0%	29.9%	30.5%	25.0%	33.3%	29.1%	36.4%	20.8%	25.7%
		104	87	191	13	17	30	4	5	9
	3	17.9%	15.1%	16.6%	21.2%	15.7%	18.4%	18.2%	12.5%	14.3%
		60	44	104	11	8	19	2	3	5
	4	4.2%	7.2%	5.6%	3.8%	3.9%	3.9%	.0%	8.3%	5.7%
		14	21	35	2	2	4	0	2	2
	5	1.5%	2.1%	1.8%	1.9%	3.9%	2.9%	.0%	8.3%	5.7%
		5	6	11	1	2	3	0	2	2
	6 or 7	.6%	.7%	.6%	1.9%	.0%	1.0%	.0%	4.2%	2.9%
		2	2	4	1	0	1	0	1	1
	8 or 9	.9%	2.1%	1.4%	5.8%	2.0%	3.9%	.0%	.0%	.0%
		3	6	9	3	1	4	0	0	0
	10 OR MORE	.0%	.3%	.2%	.0%	.0%	.0%	.0%	.0%	.0%
		0	1	1	0	0	0	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		335	291	626	52	51	103	11	24	35

Table E-2

OFFERS of FULL-TIME EMPLOYED EXPERIENCED CHEMISTS
by DEGREE and SEX
1999 ACS Starting Salary Survey

		Highest Degree								
		BA/BS Chem			MS Chem			PHD Chem		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Offers of Employment	1	37.2%	36.2%	36.7%	52.4%	45.1%	48.4%	25.0%	25.0%	25.0%
		48	55	103	22	23	45	1	5	6
	2	29.5%	29.6%	29.5%	26.2%	37.3%	32.3%	50.0%	45.0%	45.8%
		38	45	83	11	19	30	2	9	11
	3	22.5%	23.0%	22.8%	14.3%	3.9%	8.6%	.0%	25.0%	20.8%
		29	35	64	6	2	8	0	5	5
	4	6.2%	3.9%	5.0%	2.4%	3.9%	3.2%	.0%	.0%	.0%
		8	6	14	1	2	3	0	0	0
	5	3.9%	3.9%	3.9%	2.4%	5.9%	4.3%	25.0%	5.0%	8.3%
		5	6	11	1	3	4	1	1	2
	6 or 7	.8%	.0%	.4%	.0%	2.0%	1.1%	.0%	.0%	.0%
		1	0	1	0	1	1	0	0	0
	8 or 9	.0%	3.3%	1.8%	2.4%	2.0%	2.2%	.0%	.0%	.0%
		0	5	5	1	1	2	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		129	152	281	42	51	93	4	20	24

Table E-3

OFFERS of FULL-TIME EMPLOYED INEXPERIENCED CHEMICAL ENGINEERS
by DEGREE and SEX
1999 ACS Starting Salary Survey

		Highest Degree								
		BS Chem eng			MS Chem eng			PHD Chem eng		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Offers of Employment	1	34.8%	50.2%	43.3%	33.3%	55.3%	52.3%	25.0%	27.3%	27.0%
		80	144	224	2	21	23	1	9	10
	2	27.0%	25.1%	25.9%	33.3%	21.1%	22.7%	.0%	42.4%	37.8%
		62	72	134	2	8	10	0	14	14
	3	25.2%	14.3%	19.1%	33.3%	7.9%	11.4%	50.0%	18.2%	21.6%
		58	41	99	2	3	5	2	6	8
	4	6.5%	4.5%	5.4%	.0%	10.5%	9.1%	25.0%	6.1%	8.1%
		15	13	28	0	4	4	1	2	3
	5	3.9%	2.4%	3.1%	.0%	.0%	.0%	.0%	3.0%	2.7%
		9	7	16	0	0	0	0	1	1
	6 or 7	1.7%	1.4%	1.5%	.0%	2.6%	2.3%	.0%	.0%	.0%
		4	4	8	0	1	1	0	0	0
	8 or 9	.9%	2.1%	1.5%	.0%	2.6%	2.3%	.0%	3.0%	2.7%
		2	6	8	0	1	1	0	1	1
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		230	287	517	6	38	44	4	33	37

Table E-4

OFFERS of FULL-TIME EMPLOYED EXPERIENCED CHEMICAL ENGINEERS
by DEGREE and SEX
1999 ACS Starting Salary Survey

		Highest Degree								
		BS Chem eng			MS Chem eng			PHD Chem eng		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Offers of Employment	1	22.8%	33.7%	29.4%	18.2%	45.7%	39.1%	.0%	40.0%	35.3%
		29	66	95	2	16	18	0	6	6
	2	28.3%	29.6%	29.1%	36.4%	28.6%	30.4%	100.0%	33.3%	41.2%
		36	58	94	4	10	14	2	5	7
	3	29.1%	19.4%	23.2%	18.2%	20.0%	19.6%	.0%	.0%	.0%
		37	38	75	2	7	9	0	0	0
	4	6.3%	11.2%	9.3%	.0%	2.9%	2.2%	.0%	20.0%	17.6%
		8	22	30	0	1	1	0	3	3
	5	7.9%	3.1%	5.0%	18.2%	2.9%	6.5%	.0%	6.7%	5.9%
		10	6	16	2	1	3	0	1	1
	6 or 7	2.4%	1.0%	1.5%	9.1%	.0%	2.2%	.0%	.0%	.0%
		3	2	5	1	0	1	0	0	0
	8 or 9	2.4%	2.0%	2.2%	.0%	.0%	.0%	.0%	.0%	.0%
		3	4	7	0	0	0	0	0	0
	10 OR MORE	.8%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%
		1	0	1	0	0	0	0	0	0
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		127	196	323	11	35	46	2	15	17

Table F-1

CITIZENSHIP OF ALL CHEMISTRY GRADUATES
by DEGREE and RACE/ETHNICITY
1999 ACS Starting Salary Survey

				RACER						
				Amer Indian	Asian	Black	Hisp	White	Other	Total
Highest Degree	BA/BS Chem	Citizenshi	US Native	100.0%	40.8%	77.9%	70.3%	96.3%	58.1%	87.1%
				21	163	109	109	2545	43	2990
			US Natlze	.0%	40.8%	6.4%	18.1%	1.9%	24.3%	7.8%
				0	163	9	28	49	18	267
			US Perm	.0%	14.5%	12.1%	11.0%	1.3%	10.8%	3.9%
			Res	0	58	17	17	35	8	135
			Temp visa	.0%	4.0%	3.6%	.6%	.5%	6.8%	1.2%
				0	16	5	1	13	5	40
		Total		100.0%	00.0%	00.0%	00.0%	00.0%	00.0%	00.0%
				21	400	140	155	2642	74	3432
	MS Chem	Citizenshi	US Native	100.0%	5.7%	56.3%	55.6%	91.6%	50.0%	67.7%
				1	6	9	10	271	5	302
			US Natlze	.0%	14.3%	6.3%	16.7%	3.4%	30.0%	7.2%
				0	15	1	3	10	3	32
			US Perm	.0%	10.5%	25.0%	11.1%	1.0%	10.0%	4.7%
			Res	0	11	4	2	3	1	21
			Temp visa	.0%	69.5%	12.5%	16.7%	4.1%	10.0%	20.4%
				0	73	2	3	12	1	91
		Total		100.0%	00.0%	00.0%	00.0%	00.0%	00.0%	00.0%
				1	105	16	18	296	10	446
	PHD Chem	Citizenshi	US Native	50.0%	5.8%	64.0%	58.3%	86.0%	22.2%	62.9%
				1	9	16	14	363	4	407
			US Natlze	.0%	9.6%	.0%	.0%	1.7%	.0%	3.4%
				0	15	0	0	7	0	22
			US Perm	.0%	12.8%	12.0%	8.3%	4.0%	5.6%	6.6%
			Res	0	20	3	2	17	1	43
			Temp visa	50.0%	71.8%	24.0%	33.3%	8.3%	72.2%	27.0%
				1	112	6	8	35	13	175
		Total		100.0%	00.0%	00.0%	00.0%	00.0%	00.0%	00.0%
				2	156	25	24	422	18	647

Hispanics are an exclusive group. All others are NonHispanic.

Table F-2

CITIZENSHIP OF ALL CHEMISTRY GRADUATES
by DEGREE and SEX
1999 ACS Starting Salary Survey

				Sex		
				Female	Male	Total
Highest Degree	BA/BS Chem	Citizenship	US Native	86.3%	88.0%	87.2%
				1459	1554	3013
			US Natlzed	8.5%	7.1%	7.8%
				143	125	268
			US Perm	3.9%	3.9%	3.9%
			Res	66	69	135
			Temp visa	1.4%	1.0%	1.2%
				23	18	41
		Total		100.0%	100.0%	100.0%
				1691	1766	3457
	MS Chem	Citizenship	US Native	62.1%	72.4%	67.9%
				123	184	307
			US Natlzed	9.1%	5.5%	7.1%
				18	14	32
			US Perm	7.1%	3.1%	4.9%
			Res	14	8	22
			Temp visa	21.7%	18.9%	20.1%
				43	48	91
		Total		100.0%	100.0%	100.0%
				198	254	452
	PHD Chem	Citizenship	US Native	65.3%	62.5%	63.4%
				141	275	416
			US Natlzed	3.7%	3.2%	3.4%
				8	14	22
			US Perm	9.7%	5.0%	6.6%
			Res	21	22	43
			Temp visa	21.3%	29.3%	26.7%
				46	129	175
		Total		100.0%	100.0%	100.0%
				216	440	656

Table F-3

RACE\ETHNICITY OF ALL CHEMISTRY GRADUATES
by DEGREE and SEX
1999 ACS Starting Salary Survey

		Highest Degree								
		BA/BS Chem			MS Chem			PHD Chem		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
RACER	Amer	.7%	.6%	.6%	.0%	.4%	.2%	.0%	.5%	.3%
	Indian	11	10	21	0	1	1	0	2	2
	Asian	12.3%	11.1%	11.7%	31.3%	17.9%	23.8%	21.4%	25.3%	24.0%
		208	193	401	61	45	106	46	110	156
	Black	5.0%	3.2%	4.1%	3.6%	3.6%	3.6%	4.2%	3.7%	3.9%
		84	56	140	7	9	16	9	16	25
	Hisp	4.9%	4.3%	4.6%	3.1%	4.8%	4.0%	5.6%	2.8%	3.7%
		83	75	158	6	12	18	12	12	24
	White	75.3%	78.4%	76.9%	60.0%	70.9%	66.1%	66.5%	64.7%	65.3%
		1272	1369	2641	117	178	295	143	281	424
	Other	1.8%	2.5%	2.2%	2.1%	2.4%	2.2%	2.3%	3.0%	2.8%
		31	43	74	4	6	10	5	13	18
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		1689	1746	3435	195	251	446	215	434	649

Hispanics are an exclusive group. All others are NonHispanic.

Table F-4

CITIZENSHIP OF ALL CHEMICAL ENGINEERING GRADUATES
by DEGREE and RACE/ETHNICITY
1999 ACS Starting Salary Survey

				RACER						
				Amer Indian	Asian	Black	Hisp	White	Other	Total
Highest Degree	BS Chem eng	Citizenship	US Native	100.0%	37.9%	77.6%	73.1%	97.1%	84.2%	87.1%
				9	67	59	38	987	16	1176
			US Natlzed	.0%	37.3%	10.5%	13.5%	1.9%	.0%	7.4%
				0	66	8	7	19	0	100
			US Perm	.0%	16.9%	7.9%	7.7%	.7%	15.8%	3.7%
			Res	0	30	6	4	7	3	50
			Temp visa	.0%	7.9%	3.9%	5.8%	.4%	.0%	1.8%
				0	14	3	3	4	0	24
		Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				9	177	76	52	1017	19	1350
	MS Chem eng	Citizenship	US Native	.0%	14.3%	77.8%	55.6%	90.1%	40.0%	70.4%
				0	5	7	5	100	2	119
			US Natlzed	.0%	11.4%	.0%	11.1%	.0%	20.0%	3.6%
				0	4	0	1	0	1	6
			US Perm	.0%	5.7%	22.2%	11.1%	2.7%	40.0%	5.9%
			Res	0	2	2	1	3	2	10
			Temp visa	.0%	68.6%	.0%	22.2%	7.2%	.0%	20.1%
				0	24	0	2	8	0	34
		Total		.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				0	35	9	9	111	5	169
	PHD Chem eng	Citizenship	US Native	.0%	14.0%	33.3%	50.0%	88.8%	16.7%	64.9%
				0	7	1	2	111	1	122
			US Natlzed	.0%	12.0%	66.7%	.0%	1.6%	16.7%	5.9%
				0	6	2	0	2	1	11
			US Perm	.0%	8.0%	.0%	25.0%	.8%	.0%	3.2%
			Res	0	4	0	1	1	0	6
			Temp visa	.0%	66.0%	.0%	25.0%	8.8%	66.7%	26.1%
				0	33	0	1	11	4	49
		Total		.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				0	50	3	4	125	6	188

Hispanics are an exclusive group. All others are NonHispanic.

Table F-5

CITIZENSHIP OF ALL CHEMICAL ENGINEERING GRADUATES
by DEGREE and SEX
1999 ACS Starting Salary Survey

				Sex		
				Female	Male	Total
Highest Degree	BS Chem eng	Citizenship	US Native	89.8%	85.5%	87.2%
				492	698	1190
			US Natlzed	6.0%	8.2%	7.3%
				33	67	100
			US Perm Res	3.1%	4.0%	3.7%
				17	33	50
			Temp visa	1.1%	2.2%	1.8%
				6	18	24
	MS Chem eng	Citizenship	US Native	70.7%	70.3%	70.4%
				29	90	119
			US Natlzed	2.4%	3.9%	3.6%
				1	5	6
			US Perm Res	4.9%	6.3%	5.9%
				2	8	10
			Temp visa	22.0%	19.5%	20.1%
				9	25	34
	PHD Chem eng	Citizenship	US Native	63.2%	65.8%	65.3%
				24	100	124
			US Natlzed	7.9%	5.3%	5.8%
				3	8	11
			US Perm Res	5.3%	2.6%	3.2%
				2	4	6
			Temp visa	23.7%	26.3%	25.8%
				9	40	49
Total				100.0%	100.0%	100.0%
				627	1096	1723

Table F-6

RACE/ETHNICITY OF ALL CHEMICAL ENGINEERING GRADUATES
by DEGREE and SEX
1999 ACS Starting Salary Survey

		Highest Degree								
		BS Chem eng			MS Chem eng			PHD Chem eng		
		Sex			Sex			Sex		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
RACER	Amer Indian	1.1%	.4%	.7%	.0%	.0%	.0%	.0%	.0%	.0%
		6	3	9	0	0	0	0	0	0
	Asian	12.5%	13.5%	13.1%	22.0%	20.3%	20.7%	23.7%	27.8%	27.0%
		68	109	177	9	26	35	9	42	51
	Black	9.4%	3.1%	5.6%	7.3%	4.7%	5.3%	2.6%	1.3%	1.6%
		51	25	76	3	6	9	1	2	3
	Hisp	4.2%	3.6%	3.9%	7.3%	4.7%	5.3%	5.3%	1.3%	2.1%
		23	29	52	3	6	9	2	2	4
	White	71.5%	77.9%	75.3%	63.4%	66.4%	65.7%	65.8%	66.2%	66.1%
		388	629	1017	26	85	111	25	100	125
	Other	1.3%	1.5%	1.4%	.0%	3.9%	3.0%	2.6%	3.3%	3.2%
		7	12	19	0	5	5	1	5	6
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		543	807	1350	41	128	169	38	151	189

Hispanics are an exclusive group. All others are NonHispanic.

ACS CAREER SERVICES/WORKFORCE PUBLICATIONS

Salaries. The Society surveys annually 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, postgraduation 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 1995.

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

Professional and Workforce News provides current topical information on professional chemical careers and employment in a newsletter format.

For prices and ordering information, please call or write:

ACS Office of Society Services
1155 16th Street NW
Washington, DC 20036
Phone: 800/227-5558 or 202/872-4600

OTHER CAREER SERVICES PUBLICATIONS

ACS Career Services Catalog lists all programs, publications, services and videotapes specially designed for chemists and chemical engineers seeking employment in chemistry and allied fields, and for individuals facing the challenges of career development and transitions. 1-800-227-5558, ext. 6153

CAREER SERVICES ON-LINE: **http://www.acs.org/careers**

Career Services information on publications and programs is available through the Internet. Visit the "Career Services" to view employment information for ACS members, featuring:

Chemjobs:

ACS Job Bank. Puts the two most recent weekly job postings from *Chemical & Engineering News* on-line, available to ACS members over the Internet.
Professional Data Bank. A year-round, computerized registry that matches qualified candidates to employers' specific job requirements

ChemCareers Connection is a moderated career forum where chemists, students, and other interested persons pose their questions related to career development in the chemical sciences. The forum is moderated by ACS Career Consultants who offer their expert opinions as a part of the discussion.

AMERICAN CHEMICAL SOCIETY

Survey of Starting Salaries and Employment Status of 1999 Chemistry and Chemical Engineering Doctorates

Today's date: — —99

Month Day

SECTION A. EDUCATION

1. When was your doctorate granted?

—

Month Year

2. From what educational institution, department, and program did you receive your doctorate?

_____

_____

3. What is the field of your doctorate?

01 ■ Chemical engineering
02 ■ Agricultural/food chemistry
03 ■ Analytical chemistry
04 ■ Biochemistry
05 ■ Chemistry education
06 ■ Environmental chemistry
07 ■ Chemistry, general chemistry
08 ■ Inorganic chemistry
09 ■ Material science/engineering
10 ■ Medicinal/pharmaceutical chemistry
11 ■ Organic chemistry
12 ■ Physical chemistry
13 ■ Polymer chemistry
14 ■ Other chemical science
15 ■ Other, please specify:

[redacted]

SECTION B. EMPLOYMENT

Please answer all the following questions for your primary employment only as of the week of October 11, 1999.

4. Were you working for pay or profit during the week of October 11, 1999? This includes postdoctoral appointment, being self-employed, or temporarily absent from a job (e.g., illness, vacation, or parental leave), even if unpaid.

1 ■ Yes→Go to 6 2 ■ No

5. If you were not working for pay or profit during the week of October 12, 1999, were you seeking employment?

1 ■ Yes 2 ■ No→Go to Section C

If yes, how many months had you spent actively looking for employment ?

→Go to Section C

6. When did you start this primary employment?

—

Month Year

7. How many months did you spend actively looking for employment before accepting this primary employment?

Months

8. Is this primary employment full-time or part-time?

1 ■ Full-time (35+ hrs/wk)
2 ■ Part-time (Less than 35 hrs/wk)

If part-time, are you working part-time because a suitable full-time work week job was not available?

1 ■ Yes 2 ■ No

9. Is this primary employment permanent or temporary?

1 ■ Permanent→Go to 10

2 ■ Temporary, scheduled to end:

__ __

Month Year

If temporary, is the position a postdoctoral appointment?

1 ■ Yes 2 ■ No

Are you working in a temporary position because a suitable permanent job was not available?

1 ■ Yes 2 ■ No

10. In your primary employment, what is your annual base salary or stipend?

[redacted] Per year

If academically employed, is the salary for:

1 ■ 9-10 months of work, even if paid over 12 months

2 ■ 11-12 months

Were you offered a signing bonus:

1 ■ Yes 2 ■ No→Go to 12

If yes, what was the amount?

[redacted] Amount of bonus

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

Specify number [redacted]

12. How much professional or technical work experience had you prior to graduation?

1 ■ Zero to 12 months

2 ■ 12 to 36 months

3 ■ More than 36 months

13. What is the <u>one specialty</u> most related to your primary employment?

1 ■ Chemical engineering

2 ■ Chemistry (including biochemistry

3 ■ Other, please specify:

[redacted]

14. Which job search methods did you use?

<u>Please check all that apply</u>

01 ■ Faculty advisor(s)

02 ■ Informal channel, e.g., colleague or friend

03 ■ Newspaper advertisement

04 ■ Newsletter/magazine/journal, please specify: [redacted]

05 ■ Placement service (e.g., campus, conference) please specify:

[redacted]

06 ■ Employment agency

07 ■ Met employer through former job or position

08 ■ Sent unsolicited vita or resume

09 ■ Received unsolicited offer

10 ■ Electronic resource, please specify [redacted]

11 ■ Other, please specify:

[redacted]

Which was the <u>one most effective</u> job search method? Use the codes listed above.

One most effective

15. Are you currently actively looking for another position?

1 ■ Yes 2 ■ No

16. What are your primary and secondary work activities in your primary employment?

<u>Please check one in each column</u>.

<u>One Primary</u>	<u>One Secondary</u>	
1 ■	1 ■	Teaching
2 ■	2 ■	Management or administration
3 ■	3 ■	Research
4 ■	4 ■	Development/Design
5 ■	5 ■	Production/QC
6 ■	6 ■	Professional services (e.g., consulting)
7 ■	7 ■	Other, please specify:

[redacted]

17. In your primary employment, in what sector do you work? Please choose the one category that best describes your employer.

Educational institution

- 01 ■ Four-year college or university
- 02 ■ University medical or prof'l school
- 03 ■ Two-year college
- 04 ■ Elementary/secondary school or system
- 05 ■ Other academic, please specify:

[redacted]

Business/Industry

- 06 ■ Non-manufacturing
- 07 ■ Aerospace
- 08 ■ Agricultural chemicals
- 09 ■ Basic commodity chemicals
- 10 ■ Biotechnology
- 11 ■ Electronics/computers/ semiconductors
- 12 ■ Petroleum/natural gas
- 13 ■ Pharmaceutical/personal care
- 14 ■ Plastics
- 15 ■ Specialty/fine chemicals
- 16 ■ Other manufactures, please specify:

[redacted]

Government

- 16 ■ Federal government (civilian)
- 17 ■ Military
- 18 ■ State or local government
- 19 ■ Other government, please specify:

[redacted]

Other non-academic employer

- 20 ■ Hospital or independent laboratory
- 21 ■ Nonprofit organization
- 22 ■ Other research institute

Self-employed

- 23 ■ Please specify:

[redacted]

Other

- 24 ■ Please specify:

[redacted]

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

Zip

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

- 1 ■ Less than 50
- 2 ■ 50 to 99
- 3 ■ 100 to 499
- 4 ■ 500 to 2,499
- 5 ■ 2,500 to 9,999
- 6 ■ 10,000 to 24,999
- 7 ■ 25,000 or more

Please select one response to indicate your agreement or disagreement with the statements in items 20-23 regarding your primary employment.

20. The position is related to my field.

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

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

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

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

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

23. My position is professionally challenging.

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

SECTION C. OTHER BACKGROUND INFORMATION

24. What is your sex?

1 ■ Female
2 ■ Male

25. What is your citizenship or visa status?

1 ■ U.S. native
2 ■ U.S. naturalized
3 ■ U.S. permanent resident visa
4 ■ Temporary visa

26. What is your age?

Years

27. Are you Hispanic?

1 ■ Yes 2 ■ No

28. What is your racial background?

1 ■ American Indian or Alaskan Native
2 ■ Asian or Pacific Islander
3 ■ Black
4 ■ White
5 ■ Other

Your comments will be appreciated.

Thank you for your participation. Please return this questionnaire in the envelope provided.

AMERICAN CHEMICAL SOCIETY

Survey of Starting Salaries and Employment Status of 1999 Chemistry and Chemical Engineering Graduates

Today's date: ■■/■■/99
Month Day

SECTION A. EDUCATION

1. What is the highest degree you have received?

01 ■ Bachelor of Arts
02 ■ Bachelor of Science
03 ■ Master's

2. When was your highest degree granted?

■■/■■
Month Year

3. From what educational institution, department, and program did you receive your highest degree?

_____

4. What is the field of your highest degree?

01 ■ Chemical engineering
02 ■ Agricultural/food chemistry
03 ■ Analytical chemistry
04 ■ Biochemistry
05 ■ Chemistry education
06 ■ Environmental chemistry
07 ■ Chemistry, general chemistry
08 ■ Inorganic chemistry
09 ■ Material science/engineering
10 ■ Medicinal/pharmaceutical chemistry
11 ■ Organic chemistry
12 ■ Physical chemistry
13 ■ Polymer chemistry
14 ■ Other chemical science
15 ■ Other, please specify: ■■■■■■■■■■

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]

Average in your major ■.■■

Overall average ■.■■

8. Are you pursuing advanced studies in the fall of 1999?

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, please specify: ■■■■■■■■■■

SECTION B. EMPLOYMENT

Please answer all the following questions for your primary employment only as of the week of October 12, 1999.

9. Were you working for pay or profit during the week of October 12, 1999? This includes graduate appointment, being self-employed, or temporarily absent from a job (e.g., illness, vacation, or parental leave), even if unpaid.

1 ■ Yes → Go to 11 2 ■ No

10. If you were not working for pay or profit during the week of October 11, 1999, were you seeking employment?

1 ■ Yes 2 ■ No → Go to Section C

If yes, how many months had you spent actively looking for employment ?

■■ → Go to Section C

Months

11. When did you start this primary employment?

■■ ■■

Month Year

12. How many months did you spend actively looking for employment before accepting this primary employment?

■■

Months

13. Is this primary employment full-time or part-time? Graduate appointments are generally considered part-time.

1 ■ Full-time (35+ hrs/wk) → Go to 14

2 ■ Part-time (Less than 35 hrs/wk)

If part-time, are you working part-time because a suitable full-time work week job was not available?

1 ■ Yes 2 ■ No

14. Is this primary employment permanent or temporary? Graduate students appointments are considered temporary.

1 ■ Permanent → Go to 15

2 ■ Temporary, scheduled to end:

■■ ■■

Month Year

If temporary, are you working in a temporary position because a suitable permanent job was not available?

1 ■ Yes 2 ■ No

15. In your primary employment, what is your annual base salary or stipend?

[redacted] per year

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

Specify number [redacted]

17. How much professional or technical work experience had you prior to graduation?

1 ■ Zero to 12 months

2 ■ 12 to 36 months

3 ■ More than 36 months

18. What is the one specialty most related to your primary employment?

1 ■ Chemical engineering

2 ■ Chemistry (including biochemistry)

3 ■ Other, please specify: [redacted]

19. What is your primary work activity in your primary employment? Please check one.

01 ■ Teaching

02 ■ Management or administration

03 ■ Research

04 ■ Development & Design

05 ■ Production/QC

06 ■ Professional services (e.g.,consulting)

07 ■ Other, please specify: [redacted]

20. Is your job classified as a:

1 ■ Chemical or engineering technician

2 ■ Scientist or engineer

3 ■ Manager or administrator

4 ■ Graduate RA/TA

5 ■ Teacher

6 ■ Sales marketing represenative

7 ■ Other, please specify: [redacted]

21. Are you currently actively looking for another position?

1 ■ Yes 2 ■ No

22. In your primary employment, in what sector do you work? Please choose the one category that best describes your employer.

Educational institution

01 ■ Four-year college or university
02 ■ University medical or prof'l school
03 ■ Two-year college
04 ■ Elementary/secondary school or system
05 ■ Other academic, please specify: [redacted]

Business/Industry

06 ■ Non-manufacturing
07 ■ Aerospace
08 ■ Agricultural chemicals
09 ■ Basic commodity chemicals
10 ■ Biotechnology
11 ■ Electronics/computers/ semiconductor
12 ■ Petroleum/natural gas
13 ■ Pharmaceutical/personal care
14 ■ Plastics
15 ■ Specialty/fine chemicals
16 ■ Other manufactures, please specify: [redacted]

Government

16 ■ Federal government (civilian)
17 ■ Military
18 ■ State or local government
19 ■ Other government, please specify: [redacted]

Other non-academic employer

20 ■ Hospital or independent laboratory
21 ■ Nonprofit organization
22 ■ Other research institute

Self-employed

23 ■ Please specify: [redacted]

Other

24 ■ Please specify: [redacted]

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

■ ■ ■

Zip

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

1 ■ Less than 50
2 ■ 50 to 99
3 ■ 100 to 499
4 ■ 500 to 2,499
5 ■ 2,500 to 9,999
6 ■ 10,000 to 24,999
7 ■ 25,000 or more

25. Which job search methods did you use?
Please check all that apply

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

Which was the one most effective job search method? Use the codes listed above.

■ ■

One most effective

Please select one response to indicate your agreement or disagreement with the statements in items 26-28 regarding your primary employment.

26. The position is related to my field.

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

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

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

28. My position is professionally challenging.

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

SECTION C. OTHER BACKGROUND INFORMATION

29. What is your sex?

1 ■ Female
2 ■ Male

30. What is your citizenship or visa status?

1 ■ U.S. native
2 ■ U.S. naturalized
3 ■ U.S. permanent resident visa
4 ■ Temporary visa

31. What is your age?

■■

Years

32. Are you Hispanic?

1 ■ Yes 2 ■ No

33 What is your racial background?

1 ■ American Indian or Alaskan Native
2 ■ Asian or Pacific Islander
3 ■ Black
4 ■ White
5 ■ Other

Your comments are welcomed. Thank you for your participation.
Please return this questionnaire in the envelope provided.

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