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# Salaries 2014

Analysis of the American Chemical Society's 2014 Comprehensive Salary and Employment Status Survey

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*Prepared by:*

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*Data Based Insights, Inc. on behalf of the  
ACS Department of Research and Brand Strategy*

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**American Chemical Society**

# Salaries 2014

## ANALYSIS OF THE AMERICAN CHEMICAL SOCIETY'S 2014 COMPREHENSIVE SALARY AND EMPLOYMENT STATUS SURVEY

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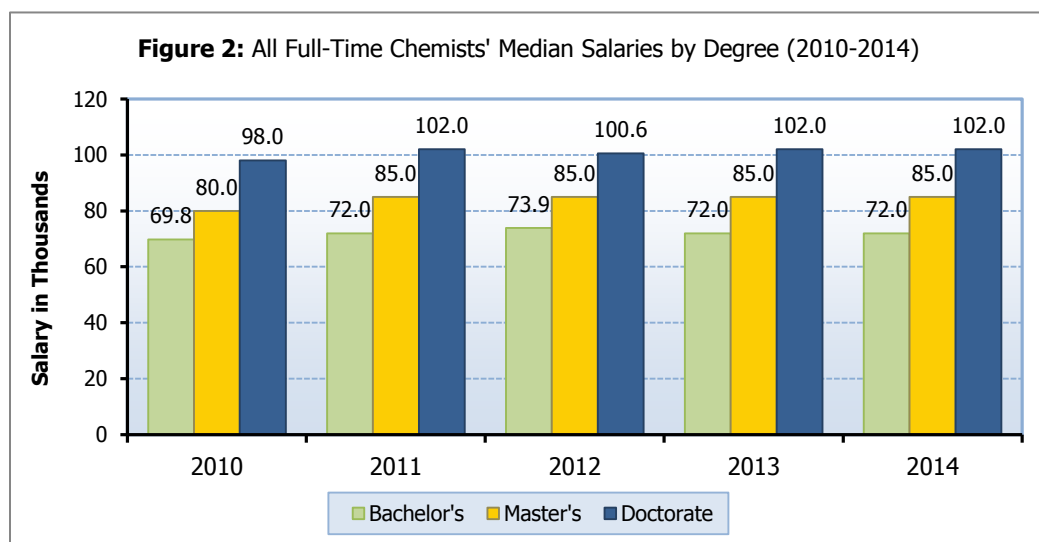
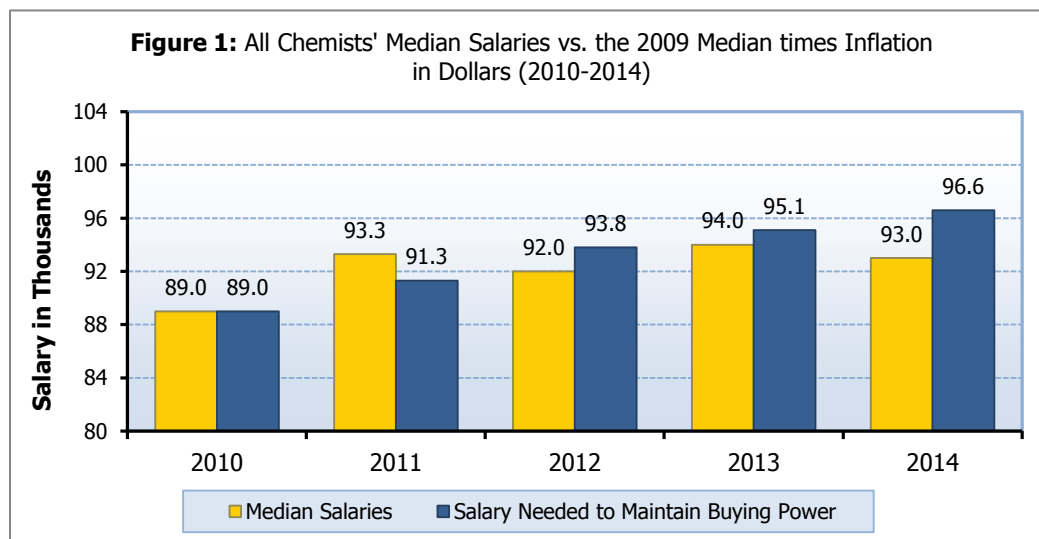
This report presents detailed results of the 2014 ACS Comprehensive Salary and Employment Status Survey. The ACS Committee on Economic and Professional Affairs and its Subcommittee on Surveys planned and provided general oversight of the survey and its analysis. The committee extends its heartfelt appreciation to those who agreed to participate in this survey. The committee would also like to extend its appreciation to the development team. Gareth Edwards, senior research associate in ACS's Department of Research managed the survey. Andrew Bell at Intelliscan, Inc. performed the data collection. Steve and Clint Marchant of Data Based Insights, Inc. (an affiliate of Intelliscan) analyzed the results of the survey and prepared this report.

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## PERSPECTIVE

An American chemists' median salary from 2010 to 2014 increased from \$89,000 to \$93,000 (rounded to nearest \$100). **Figure 1** compares the actual median salary for each year (gold colored bars) with what salary would need to be each year to keep pace with inflation and match the buying power of \$89,000 in 2010. As Figure 1 shows, inflation outpaces salary increases.

Excluding 2010 and looking at median salary from 2011 to 2014, chemists' median salary is flat (-\$300). Median income among the three degree strata in 2011 vs. 2014 is identical (**Figure 2**): \$72,000 for bachelor's degrees, \$85,000 for master's degrees and \$102,000 for those with a doctorate. With zero salary growth, chemist salaries have lost value each year. Inflation was 2.7% from 2011 to 2012 and 1.5% from 2012 to 2013 and 1.5% in 2013 to 2014.



## SUMMARY AND COMMENTS

Salaries for chemists did not grow in 2014, remaining close to median salary levels for 2013 and overall falling about \$1,000 to a median of \$93,000 for all chemists. The 1.5% rate of inflation from March 2013 to 2014, adds some weight to the slight decline in salary.

As far as other methods of compensation and professional income, bonus eligibility and amounts stood still or lost some value. The \$8,800 median bonus in 2014 is -\$200 lower than 2013. With regard to receipt of stock as part of professional income, chemists appear to follow the general trend in the workplace of rethinking the role of stock (and the type of stock offered) as part of a compensation strategy.

From the perspective of the unemployment rate, which is 2.9% for ACS members, the employment picture for chemists is a good one. In particular, chemists with a PhD continue to be in demand -- only 2.2% report being unemployed. Chemists have an unemployment rate half that of the general population and a slight edge when compared with other workers who have earned a bachelor's degree or higher.

Most ACS members employed full-time take the medical coverage that their employers offered (90.2%). In spite of the rising cost of monthly premiums over the past five years, 86.0% remain satisfied with their coverage and 88.0% feel they have competitive health coverage.

## SALARIES

### ALL CHEMISTS

**Table 1.** Change in All Full-Time Chemist's Salaries 2013-2014

	Median Salary in Current Dollars		% Change from 2013	
	2013	2014	Current Dollars	Constant Dollars*
All Chemists	\$94,000	\$93,000	-1.1%	-2.6%
Bachelor's	\$72,000	\$72,000	0.0%	-1.5%
Master's	\$85,000	\$85,000	0.0%	-1.5%
Doctorate	\$102,000	\$102,000	0.0%	-1.5%

\* Rate of inflation from March 2013 to March 2014 = 1.5%

Median salary for full-time chemists slipped to \$93,000 in 2014, a decline of -1.1% in current dollars and -2.6% after inflation. However, median salaries for bachelors, masters and chemists with a doctorate degree are identical to 2013.

**SALARIES FOR CHEMISTS  
AND CHEMICAL ENGINEERS**

Full-time chemical engineers received a median salary of \$114,900 in 2014, which is +23.5% more than a chemists' median salary. The difference in salary is most pronounced at the bachelor's degree level (+35.4%) and master's degree level (+41.2%). An academic setting is another point of difference, providing chemical engineers a median salary +34.6% more than chemists.

**Table 2.** Median Salaries for Chemists and Chemical Engineers 2014

	Chemists	Chemical Engineers	Percent Difference
<b>All Chemists</b>	\$93,000	\$114,900	+23.5%
<b>Degree</b>			
Bachelor's	\$72,000	\$97,500	+35.4%
Master's	\$85,000	\$120,000	+41.2%
Doctorate	\$102,000	\$118,100	+15.8%
<b>Employer</b>			
Industry	\$108,000	\$120,000	+11.1%
Government	\$106,100	\$114,700	+8.1%
Academic	\$74,300	\$100,000	+34.6%
<b>Age</b>			
20-29	\$52,100	\$75,000	+44.0%
30-39	\$75,100	\$97,300	+29.6%
40-49	\$96,200	\$117,000	+21.6%
50-59	\$112,000	\$137,100	+22.4%
60-69	\$114,000	\$136,500	+19.7%



**CHEMISTS BY EMPLOYMENT  
SECTOR**

**Table 3:** Industry sector salaries kept pace with inflation (-0.2%) from \$106,600 in 2013 to \$108,000 in 2014. Government employed chemist salaries in 2014 scaled relatively close to inflation, a change of -0.6%. Academia salaries remained flat in current dollars (-\$200), as a result drop slightly behind inflation and buying power (-1.2%).

**Table 3.** Chemists' Median Salaries by Employment Sector 2013-2014

	Median Salary in Current Dollars		% Change from 2013	
	2013	2014	Current Dollars	Constant Dollars*
Industry	\$106,600	\$108,000	+1.3%	-0.2%
Government	\$105,200	\$106,100	+0.9%	-0.6%
Academia	\$74,100	\$74,300	+0.3%	-1.2%

\* Rate of inflation from March 2013 to March 2014 = 1.5%

**INDUSTRIAL / PRIVATE  
SECTOR CHEMISTS**

Chemists in the private sector saw a median salary increase of +\$1,000 to \$108,000 in 2014, but after factoring inflation is less than a salary from 2013 (-0.6%). Salary for private sector chemists with a bachelor's degree increased +2.7% in current dollars to \$75,000, outpacing inflation by +1.2%.

**Table 4.** Change in Industrial/Private Sector Chemist's Salaries 2013-2014

	Median Salary in Current Dollars		% Change from 2013	
	2013	2014	Current Dollars	Constant Dollars*
All Chemists	\$107,000	\$108,000	+0.9%	-0.6%
Bachelor's	\$73,000	\$75,000	+2.7%	+1.2%
Master's	\$94,100	\$92,000	-2.2%	-3.7%
Doctorate	\$125,000	\$126,000	+0.8%	-0.7%

\* Rate of inflation from March 2013 to March 2014 = 1.5%

Salary for chemists with a master's degree slips to \$92,000, effectively a -3.7% loss of income vs. what was earned in 2013. Private sector salaries for chemists with a doctorate degree at \$126,000 maintain a value comparable (-0.7%) to 2013.

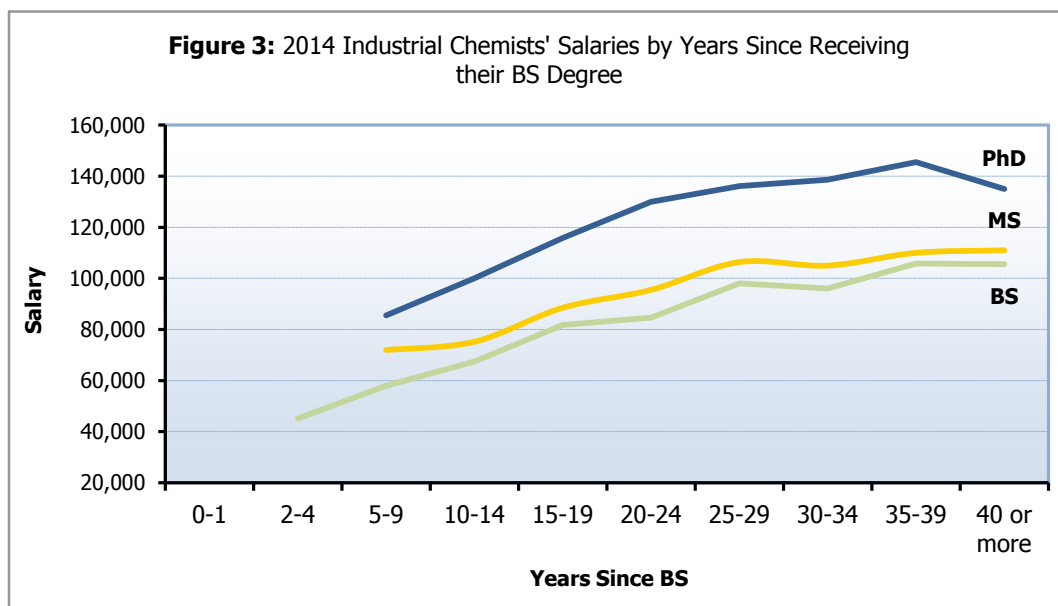
Female industrial chemists earned \$25,000 less than male counterparts in 2014, about -21.7% less, which is similar to the difference of -21.1% from 2013 (**Table 5**). Salary among female chemists with a bachelor's degree in the industrial sector improved from \$65,000 in 2013 to \$70,200 in 2014, reducing the earning gap a differential of -10.8% for women with a bachelor's degree working in the industrial sector.

**Table 5.** Male and Female Full-Time ACS Industrial Chemists' Salaries 2013 & 2014

	2013			2014		
	Men	Women	Difference	Men	Women	Difference
All Degrees	\$114,000	\$90,000	-21.1%	\$115,000	\$90,000	-21.7%
Bachelor's	\$80,000	\$65,000	-18.8%	\$78,700	\$70,200	-10.8%
Master's	\$98,000	\$84,000	-14.3%	\$97,700	\$83,300	-14.7%
Doctorate	\$130,000	\$110,350	-15.1%	\$129,000	\$112,000	-13.2%

The salary gap women face among industrial chemists with a doctorate degree closed modestly from -15.1% to -13.2%.

Most chemists will receive many wage increases over the years as their experience and capabilities grow. **Figure 3** plots salary by highest degree earned against experience, which is measured by the time since chemists earned a bachelor's degree.



Starting with the period 5-9 years after receiving a **B.S. degree**, where sample sizes are large enough to be representative of all 3 degree holders, salary growth over time is quite positive. Figure 3 illustrates the extent that a master's degree or a doctorate degree maintains a salary premium vs. a bachelor's degree throughout a career lifetime.

Salary for industrial chemists with **bachelor's degrees** grows about 82% during the lifetime of a career from \$58,000 to \$105,800 as a chemist moves from 5-9 years of experience to peak earning 35+ years after earning their degree.

At 5-9 years after earning a B.S. degree, industrial chemists with a **master's degree** have a base salary \$14,000 higher than those whose highest degree is a **B.S.** Chemists with an M.S. degree enjoy a moderately higher salary throughout their careers. After about 35 years, the salary premium over a bachelor's degree narrows to +\$4,200.

**PhDs** start with a base salary of \$85,500 in the 5th to 9th year after graduating with a B.S. degree, a \$27,500 premium over B.S. degree. PhD median salary peaks at \$145,500 (+70.2%) in 2014 dollars, 35-39 years after receiving a B.S. degree.

**GOVERNMENT CHEMISTS**

As reported in a BLS document titled *Current Employment Statistics Highlights February 2014* published on March 7, 2014, the number of government employees (federal, state and local) overall has not changed much in the past year. However, the report notes on page 3 an ongoing trend where job losses at the federal level are offset by an increased number of people employed by state governments.

The median salary in 2014 for government chemists increased +0.5% to \$106,100, maintaining a constant dollar value nearly similar to 2013 (-1.0%). Median salaries for government chemists with M.S. degrees remained roughly the same (+\$400), which represents a -1.1% loss in value. Government chemists with a doctorate had the strongest increase in median salary, up +\$2,900 from 2013 to a median salary of \$116,300 in 2014.

**Table 6.** Change in Full-Time Government Chemist's Salaries 2013-2014

	Median Salary in Current Dollars		% Change from 2013	
	2013	2014	Current Dollars	Constant Dollars*
All Chemists	\$105,600	\$106,100	+0.5%	-1.0%
Bachelor's	\$72,000	\$73,400	+1.9%	+0.4%
Master's	\$93,600	\$94,000	+0.4%	-1.1%
Doctorate	\$113,400	\$116,300	+2.6%	+1.0%

\* Rate of inflation from March 2013 to March 2014 = 1.5%

**ACADEMIC CHEMISTS**

Academic chemists in this study refer to:

- Mostly PhDs with a specialty in chemistry,
- who are either full professors, associate professors, or assistant professors,
- who work at a college or university (excluding medical schools)
- and, have either a 9-10 month or an 11 to 12 month contract.

**Table 7** displays the median salaries of academic chemists by faculty rank and length of contract.

**Table 7.** Change in Academic Chemist’s Salaries 2013-2014 (by rank/contract length)

	Median Salary in Current Dollars		% Change from 2013	
	2013	2014	Current Dollars	Constant Dollars*
Full Professors -- 9/10 mos.	\$100,000	\$100,300	+0.3%	-1.2%
Full Professors -- 11/12 mos.	\$136,000	\$137,200	+0.9%	-0.6%
Associate Profs. -- 9/10 mos.	\$70,500	\$74,000	+5.0%	+3.5%
Associate Profs. -- 11/12 mos.	\$88,000	\$87,700	-0.3%	-1.9%
Assistant Profs. -- 9/10 mos.	\$62,150	\$64,000	+3.0%	+1.5%
Assistant Profs. -- 11/12 mos.	\$71,000	\$71,500	+0.7%	-0.8%

\* Rate of inflation from March 2013 to March 2014 = 1.5%

According to the BLS Occupational Outlook Handbook (January 8, 2014), for postsecondary educators "Competition for tenure-track positions is expected to be high, as colleges and universities continue to move away from these positions and toward adjunct and part-time positions." The same publication projects the job growth for chemistry teachers to be 14% from 2012 to 2022, which is ahead of the projected 11% growth for all jobs and the slower 6% growth for chemists in private industry.

Because the results for median salary of associate and assistant chemistry professors with 11 to 12 month contracts are based on samples of fewer than 100 respondents, their trend data is too volatile to comment on with confidence. Median salaries for academics on 9-10 month contracts are based on larger, more stable samples.

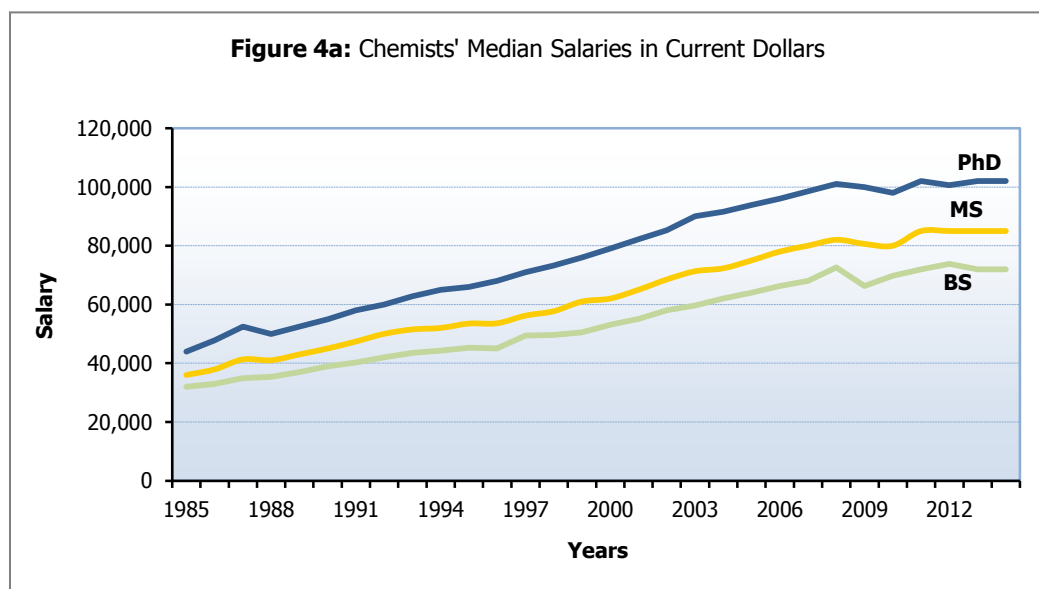
Associate professors on a 9/10 month contract had the strongest 2013 to 2014 salary growth (+5.0%) compared with full professors (+0.3%) and assistant professors (+3.0%).

**OTHER FACTORS  
INFLUENCING SALARY**

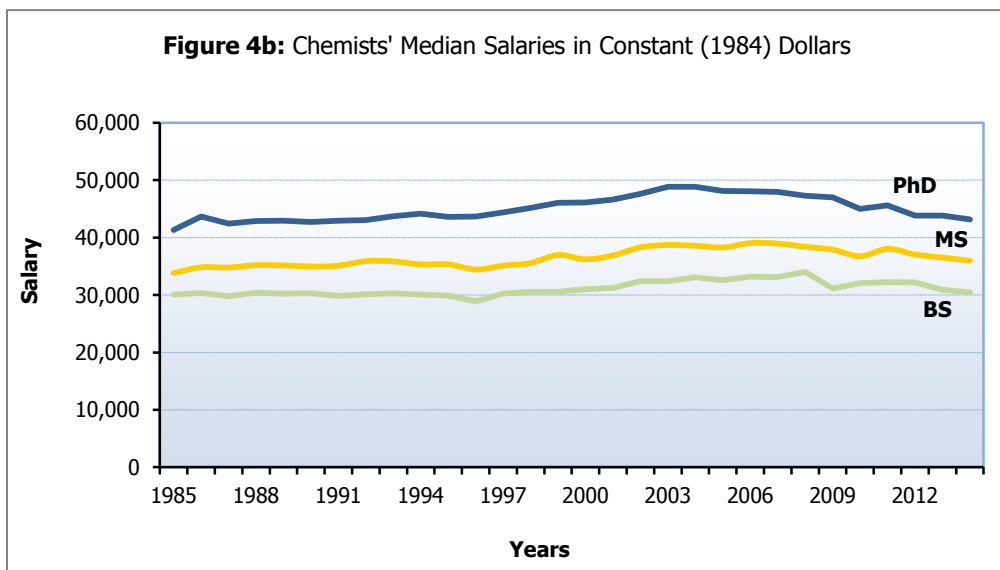
Although the level of education, employment sector, and length of experience may be the most influential correlates of salary, there are a variety of other factors that one should also consider. Some other factors influencing salary are type of work, work specialty, geographic region, and gender.

**TRENDS IN CHEMISTS'  
SALARIES**

Chemist median salaries have increased by varying degrees from year to year since the ACS survey and analyses began in 1985. **Figure 4a** displays the trend in chemists' salaries each year by highest degree held in current paycheck dollars. Over the last 29 years, chemists' salaries by this measure have more than doubled.



**Figure 4a** shows that from 1985 to 2008 chemists' median salaries among the three degree strata increased roughly 5% per year. The slowdown of the global economy in 2007 put an end to the 5% annual growth trend. After some correction in 2009 and 2010, median salaries remain flat from 2011 to 2014.



By converting salaries to constant 1984 dollars as a measure of the value or buying power of salaries, **figure 4b** shows that the value of a chemist's median salary had not changed much in terms of what you can buy for your money as measured by the Consumer Price Index (CPI). Salary maintaining a consistent value was largely the case until 2000 when chemists' median salaries started gaining value over inflation. In 1985 the median salary for a chemist with a bachelor's degree was \$30,100 in 1995 it was \$29,900. By 2008, the median salary was \$34,000, a gain of +\$3,900. The same trend holds for chemists with master's (+\$4,600) and doctorate (+\$5,900) degrees.

However, as salaries remained static since 2011 and inflation continues to rise, median salary value is returning to 1985 constant dollar levels. The median salaries 1985 vs. 2014: +\$400 in constant dollars for those with a bachelor's; +\$2,000 for master's degree holders; and, +\$800 for doctorate degree holders.

Keep in mind that the *median* represents the salary in the middle of the range. Most chemists reading this who were working in 1985 were probably just starting out and were most likely making a salary in the bottom quartile. Today, those same chemists are likely to be making salaries in the top quartile and they have accumulated a substantial gain in buying power even in 1984 constant dollar terms.

## NON-SALARY INCOME

Salaries alone do not provide the total picture of the earning potential for chemists. This section examines additional income, such as consulting, bonuses, and company stock received by chemists. That is, some chemists earn additional money by engaging in consulting work outside of their primary employment. Meanwhile, there are a substantial number of employers providing yearly bonuses and/or company stock in order to supplement their chemists' salaries.

### CONSULTING

In 2014, approximately 12.1% of ACS members responded that they did consulting work in 2013, earning a \$5,000 median consulting income.

Looking at all members overall, the proportion of ACS chemists who did any consulting, the hourly rate and the median income has been stable for the past few years.

**Table 8.** Consulting by ACS Chemists (Amounts received in 2013)

	% Any Consulting	Median Hourly Rate	Median Income
<b>All Members</b>	12.1%	\$120	\$5,000
<b>Degree</b>			
Bachelor's	5.5%	\$100	\$18,000
Master's	8.8%	\$80	\$7,500
PhDs	14.2%	\$125	\$4,000
<b>Employer</b>			
Industry	6.5%	\$125	\$10,000
Government	4.9%	\$100	\$3,500
College or University	19.2%	\$100	\$3,000
<b>Gender</b>			
Male	13.1%	\$125	\$5,000
Female	9.5%	\$100	\$2,500
<b>Age</b>			
20-29	3.1%	\$25	\$6,500
30-39	7.8%	\$100	\$3,000
40-49	12.6%	\$100	\$3,500
50-59	13.4%	\$125	\$5,000
60-69	18.4%	\$150	\$7,500

Approximately 14.2% of PhDs do consulting, which is higher than chemists with a master's degree (8.8%) or bachelor's degree (5.5%). PhDs command the highest hourly rate, a median of \$125, earning \$4,000 in 2013, which is a median consulting income below chemists with a Masters (\$7,500) or a Bachelors (\$18,000) degree.

By employer, academic chemists had the highest consultancy rate at 19.2% for 2013. However, academic chemists report lower median consulting income at \$3,000 than those employed by the government (\$3,500) and in private industry (\$10,000).

Opportunities for consulting work increases as a chemist ages, they have the expertise, contacts and professional networks. Only 3.1% of younger chemists (age 20-29) found the opportunity to do any consulting. In contrast, 18.4% of chemists age 60-69 found consulting opportunities.



**BONUSES**

44.7% of all chemists were eligible to receive a bonus in 2013. Of those eligible, 91.1% received a median bonus of \$8,800, about -\$200 less than the median bonus of \$9,000 during the previous year.

**Table 9. Chemist Only Bonuses in 2014 (Amounts received in 2013)**

	% Eligible for Bonus	% of Eligible Receiving Bonus	Median Bonus
<b>All Chemists</b>	44.7%	91.1%	\$8,800
<b>Degree</b>			
Bachelor's	64.4%	93.6%	\$5,000
Master's	52.2%	93.0%	\$7,500
PhD	39.3%	89.8%	\$11,000
<b>Employer</b>			
Industry	75.8%	94.6%	\$10,000
Government	35.4%	68.2%	\$1,500
College or University	9.5%	75.6%	\$2,000
<b>Gender</b>			
Male	47.0%	91.0%	\$10,000
Female	39.7%	91.3%	\$5,000
<b>Age</b>			
20-29	46.3%	91.8%	\$2,000
30-39	38.9%	92.6%	\$5,600
40-49	44.9%	91.9%	\$10,000
50-59	50.4%	91.7%	\$12,000
60-69	41.7%	86.9%	\$10,500

**Note:** This year's respondents were asked for previous year's bonuses.

The majority of chemists with a bachelor's degree (64.4%) or a master's degree (52.2%) were eligible for a bonus for 2013. On the other hand, chemists with a PhD who were eligible for a bonus were in the minority (39.3%).

The median bonus received in 2013 by chemists with a bachelor's degree is \$5,000, the same amount received in 2012. Chemists with a master's degree received a median bonus of \$7,500, a decline of -\$500 vs. last year. The median bonus for PhD chemists also declined -\$500 to a bonus of \$11,000.

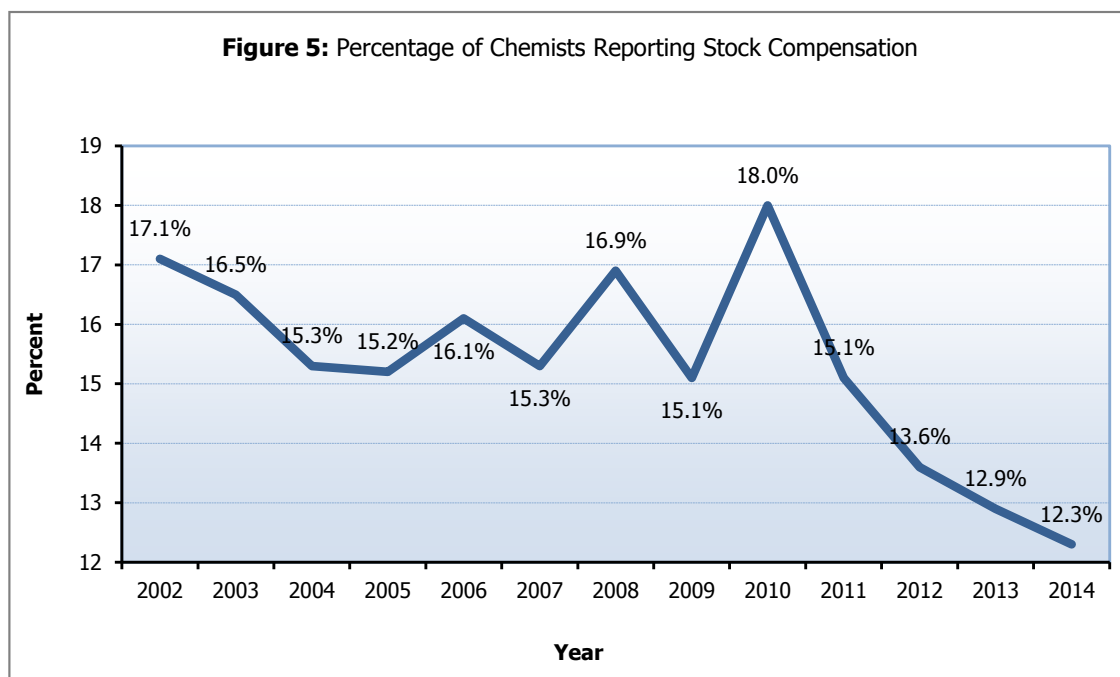
Bonus eligibility for government chemists declined from 43.4% eligible in 2012 to 35.4% bonus eligible in 2013. Furthermore, the median bonus received by government chemists is down almost -10% from \$1,650 received in 2012 to \$1,500 received in 2013. Furthermore, this year's median

bonus is down -25% from the \$2,000 median bonus that government chemists received in 2011.

Male chemists tend to do better with bonus eligibility and the dollar amount of the bonus received. Setting aside issues of bias and pay inequality, female chemists are less likely to be employed in the industrial sector than men (46.6% vs. 55.2%) and more likely to be employed in the academic sector (44.3% vs. 36.1%) than male chemists, where both bonus eligibility and bonus size are substantially lower than the industry sector. However, looking bonus amounts received each year since 2011; male chemists consistently received a median bonus of \$10,000 whereas for female chemists the median bonus went from \$7,000 to \$6,000 to \$5,000 in the same three years.

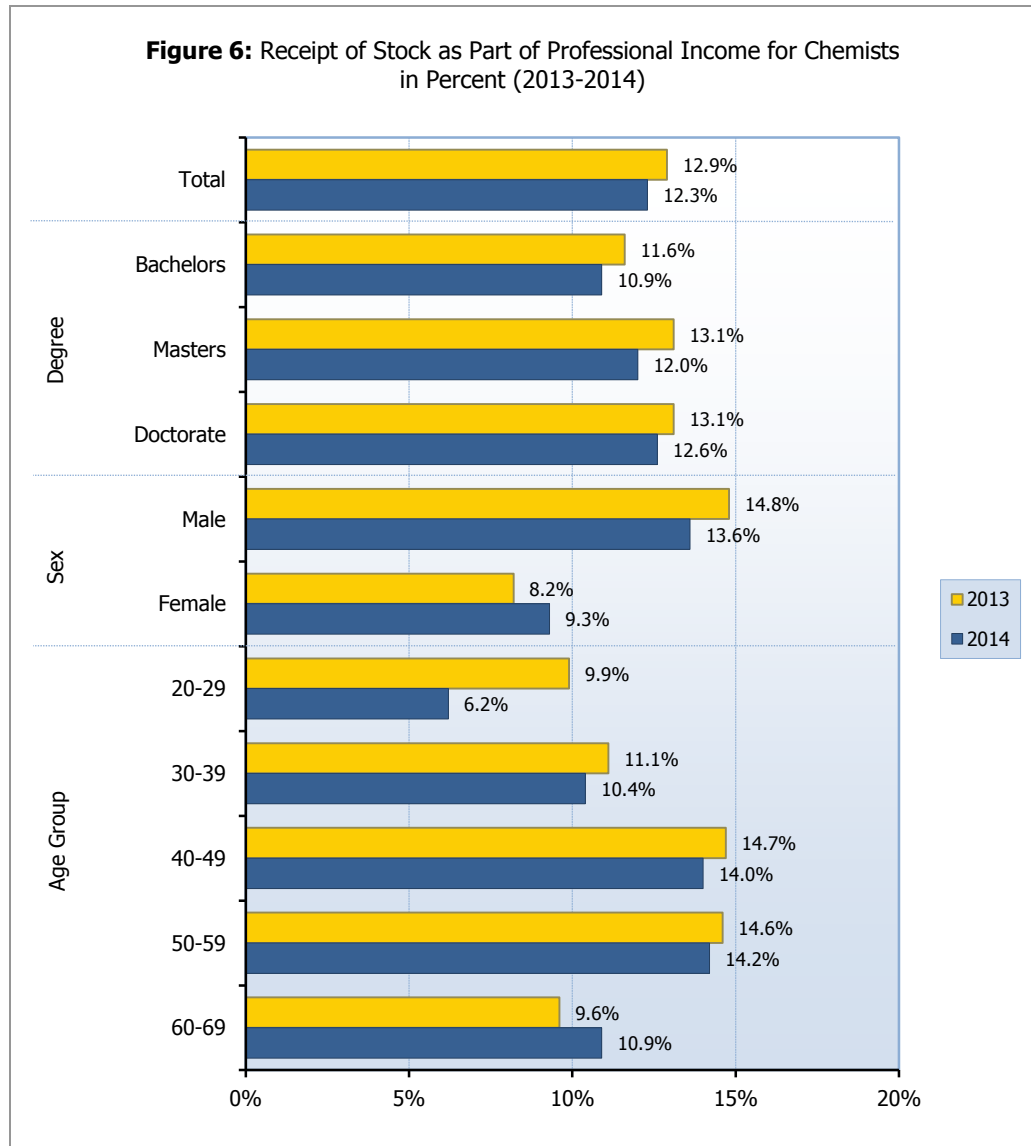
**STOCK AS PART OF PROFESSIONAL INCOME**

In 2002, ACS began asking members to report on the role of stock as part of chemists' overall compensation. Between 2002 and 2010, the percentage of chemists reporting that stock as part of their professional income fluctuated in the range of 15.1% to 18.0%. Skip ahead to 2014 following four consecutive declines, 12.3% of chemists report receiving stocks as a portion of their annual professional income.



**Figure 5** shows a clear trend that since 2010 stocks are becoming less prevalent in overall compensation structures. A number of factors have created the trend away from stock, which include new accounting rules, tax law changes and investor concerns over stock options. The general employment market trends toward offering increasingly diverse ways to compensate their employees, which include different strategies using stocks as part of compensation beyond traditional stock options.

**Figure 6** shows the percentage of chemists who received stock as part of their professional income in 2013 and 2014 by highest degree, sector of employment, gender and age group. For almost every comparison group, 2014 sees a smaller percent of chemists receiving stock than in 2013. The most substantial difference between 2013 and 2014 is among chemists aged 20-29. In 2014, 6.2% received stock as part of their professional income, down from 9.9% last year.



## EMPLOYMENT AND UNEMPLOYMENT

### EMPLOYMENT STATUS

Over the past 18 years, full-time employment among ACS members fluctuated between 84% and 90% (see **Table 10**). The lowest rate of full-time employment was 84.3% in 2010. Since then, the rate of full time employment has grown each year to its highest point since 1998. Overall unemployment among ACS members is 2.9%. Looking at the overall trends, 2014 has among the lowest rates of chemists not seeking employment (0.8%) and rate of chemists declaring full retirement (1.1%).

**Table 10a.** Unemployment Status of Chemists (Percentages by Year)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Full Time	90.5	89.8	89.4	88.5	91.5	88.1	87.0	86.7	86.0
Part Time	2.1	2.4	2.6	2.9	2.5	2.9	3.2	3.4	3.9
Post Doc	2.3	2.2	2.0	1.9	1.2	1.4	1.1	1.7	1.8
<b>Not Employed</b>									
Seeking	1.9	2.3	2.2	2.0	1.6	3.1	3.6	3.4	2.9
Not Seeking	0.8	0.9	1.3	1.7	1.4	1.5	1.7	1.4	1.9
Fully Retired*	2.3	2.4	2.5	3.0	1.7	2.9	2.9	3.3	3.5
Overall Unemployment**	2.0	2.3	2.3	2.1	1.7	3.3	3.8	3.6	3.1

**Table 10b.** Unemployment Status of Chemists (Percentage by Year -- Continued)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Full Time	87.3	87.3	86.9	87.7	84.3	86.9	87.4	89.4	90.2
Part Time	3.3	3.4	3.6	3.1	3.7	3.7	3.1	2.7	2.9
Post Doc	2.1	1.6	1.2	2.5	3.8	1.7	2.6	2.4	2.1
<b>Not Employed</b>									
Seeking	2.8	2.3	2.2	3.8	3.6	4.4	4.0	3.4	2.8
Not Seeking	1.7	1.7	1.5	1.0	2.0	1.3	1.1	0.8	0.8
Fully Retired*	2.8	3.7	4.6	1.9	2.6	2.0	1.7	1.2	1.1
Overall Unemployment**	3.0	2.5	2.3	3.9	3.8	4.6	4.2	3.5	2.9

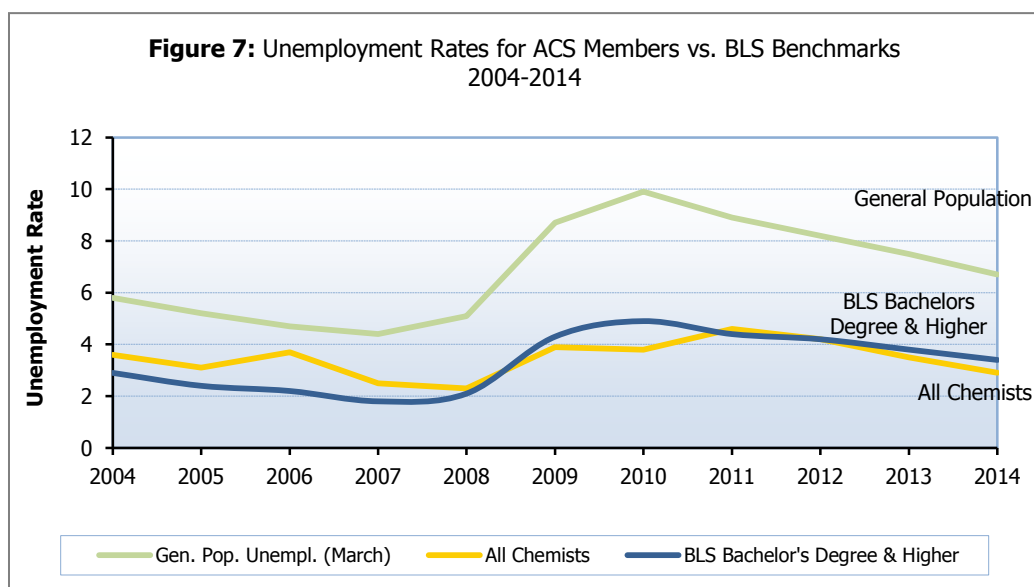
\* Note: Retirement status was added in 1997

\*\* Note: Unemployment rate measures a status of the active workforce. Thus, "not seeking" and "fully retired" populations are dropped from the calculation of the unemployment rate.

**UNEMPLOYMENT STATUS**

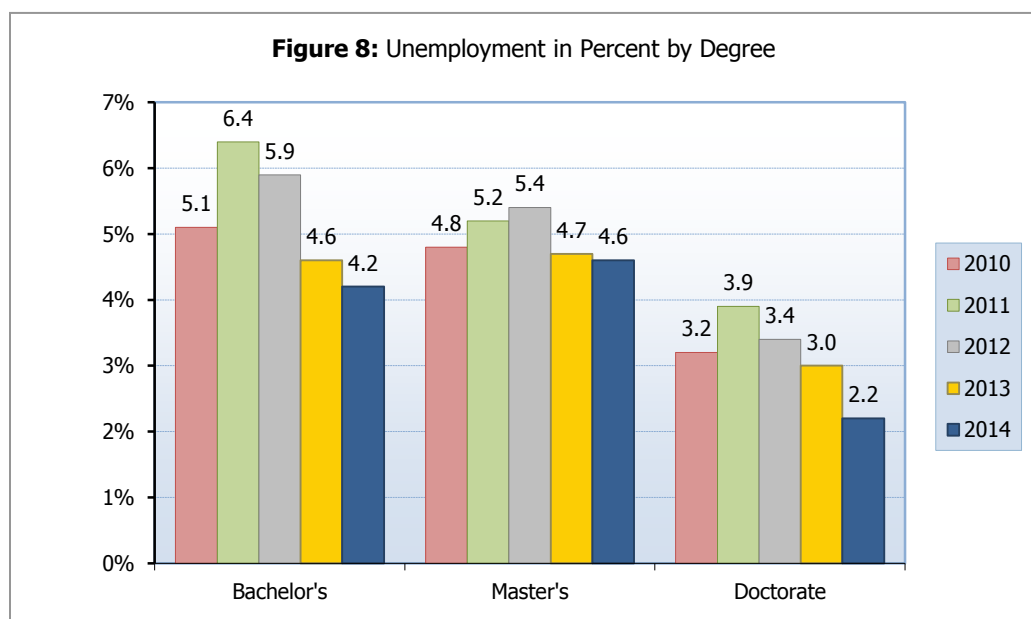
**Figure 7** compares ACS member unemployment with BLS data for (1) the general U.S. population, and more specifically with (2) unemployed people who have a bachelor's degree or higher.

Over the past ten years, ACS members have had an unemployment rate much lower than the general population. Unemployment for all chemists in 2014 is down to 2.9%, a rate less than half the general population, which is at 6.7%. Chemists also do better on the unemployment front compared with workers who have at least a bachelor's degree, whose rate of unemployment is slightly higher at 3.4%.



**Figure 7** shows that since 2011, the unemployment picture improved for chemists at a slightly higher rate than that of all workers who have a bachelor's degree or higher.

**Figure 8** shows unemployment rates improved for all three degree categories. The low 2.2% unemployment for PhD's shows a strong demand for highly skilled and experienced chemists in the marketplace. In addition, higher education, qualification and the greater responsibility that jobs which require top qualifications entail provides chemists with a PhD strong insulation against unemployment. However, it appears that chemists with a bachelor's degree (4.2% unemployment) are less likely to be unemployed than chemists with a master's degree (4.6%).



## HEALTHCARE

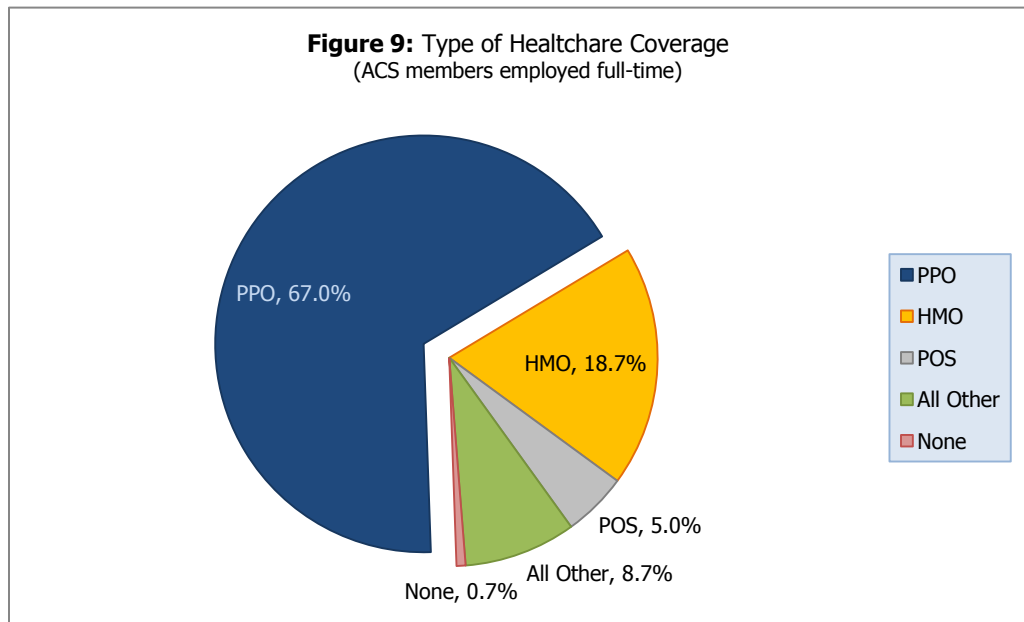
Each year the ACS salary survey explores an ad hoc topic. The 2014 survey examines the healthcare options employers have made available to employees and what the impact was, if any, of the Affordable Care Act on premiums and coverage. These results focus on ACS members employed full-time.

Of full-time employers, 98.3% offer medical coverage to their employed ACS members and 90.2% enroll in the medical coverage offered by their employers. Most employers also offer family medical coverage (97.4%). ACS members typically belong to a PPO plan (67.0%).

In spite of seeing their monthly premiums increase over the past five years and potential changes in cost and coverage as a result of government legislation, 86.0% of full-time employed ACS members say they are satisfied with their current health coverage and 88.0% believe that their current coverage and benefits are competitive.

### COVERAGE TYPE

The majority of full-time ACS members (67.0%) are enrolled in a PPO (Preferred Provider Organization) type plan, followed by 18.7% enrolled in an HMO (Health Maintenance Organization) and 5.0% enrolled in a POS (Point of Service) plan. Only 0.7% of full-time ACS members are not enrolled in any type of health care coverage.



**COVERAGE OFFERED BY EMPLOYERS**

The vast majority, greater than 90%, of employers offer ACS members and their family's medical and dental coverage. At least 85% or more say that their employer also covers vision for the employee and their family. Some 78.6% of employers cover an annual physical and 70.9% cover wellness and fitness programs.

When employers offer full-time employees medical coverage, 86.5% of ACS members indicate their employer pays part of their premium, requiring employees to contribute. According to the BLS's *National Compensation Survey* results published March 2013, 81% of employers ask full-time employees to contribute to their single coverage premiums and 19% do not. Among ACS members, 11.7% are not required to contribute; the employer pays the entire premium. For 1.8% of ACS members, their full-time employer pays none of the employee medical premium.

Employers show greater willingness to pay all premium costs for the annual physical (41.4%) and wellness or fitness programs (33.2%) than other benefits. Increasing employee participation in annual physicals and fitness programs are seen as a way of controlling healthcare costs down the road.

Of the full-time ACS members whose employers offered medical coverage for the employee, 90.2% enrolled in the offered coverage and 70.2% who are able to enroll their family in employer offered medical coverage do so.

**Table 11.** Coverage Offered by Full-Time Employers

<b>Coverage Type</b>	<b>% Yes, Coverage Offered</b>	<b>% Employer Pays Entire Premium*</b>	<b>% Employer Pays Part of the Premium*</b>	<b>% Enrolled in Offered Coverage*</b>
Employee medical	98.3%	11.7%	86.5%	90.2%
Family medical	97.4%	4.6%	89.5%	70.2%
Employee dental	95.7%	11.8%	80.1%	87.7%
Family dental	94.5%	7.2%	82.1%	69.7%
Employee vision	88.3%	11.1%	77.9%	75.7%
Family vision	86.9%	6.8%	79.7%	60.3%
Prescription drug program	91.4%	10.2%	85.7%	87.5%
Annual physical	78.6%	41.4%	55.5%	88.3%
Wellness/fitness program	70.9%	33.2%	59.3%	70.7%
Other medical	31.5%	10.5%	77.4%	63.0%

\*Among respondents whose employer offered this type of coverage



**INSURANCE**

With regard to life insurance for the full-time employee, 92.8% of ACS members say that it is offered by their employer and 60.8% of employers offer life insurance for the employee’s family. Of the most commonly offered types of insurance, employers are least likely to offer long-term care coverage – 60.4% make it available.

Employers are most likely to pay the entire premium for short-term disability (41.3%), life insurance for the employee (37.5%) and accidental death coverage (36.0%).

**Table 12.** Insurance Offered by Full-Time Employer

<b>Insurance Type</b>	<b>% Yes, Insurance Offered</b>	<b>% Employer Pays Entire Premium*</b>	<b>% Employer Pays Part of the Premium*</b>	<b>% Enrolled in Offered Insurance*</b>
Life insurance for employee	92.8%	37.5%	54.1%	90.3%
Life insurance for family	60.8%	6.4%	57.2%	51.6%
Accidental death	85.7%	36.0%	50.1%	82.0%
Long-term care	60.4%	13.3%	53.4%	51.3%
Short-term disability	82.2%	41.3%	45.8%	79.8%
Long-term disability	83.5%	30.1%	53.4%	77.7%
Other	6.7%	13.5%	39.4%	52.3%

\*Among respondents whose employer offered this type of insurance

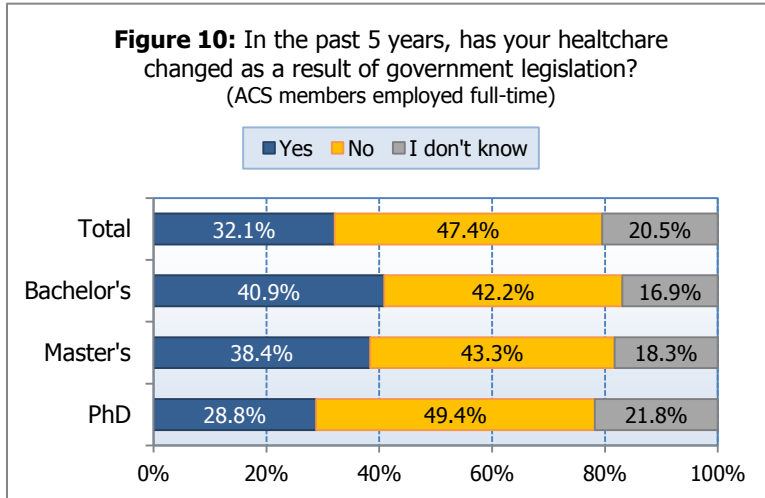
**BENEFITS TRAINING**

Among full-time employed ACS members, 90.8% say that their employer fully explained their benefits to them or provide their employees benefits training. Full-time ACS members employed in the government sector are slightly less likely at 86.8% to have their employer fully explain their benefits or provide a benefits training session.

**Table 13.** Benefits Training (ACS members employed full-time)

	<b>% Receiving Training</b>
Total	90.8%
Industry	91.9%
Government	86.8%
Academic	90.6%

**IMPACT OF GOVERNMENT LEGISLATION**



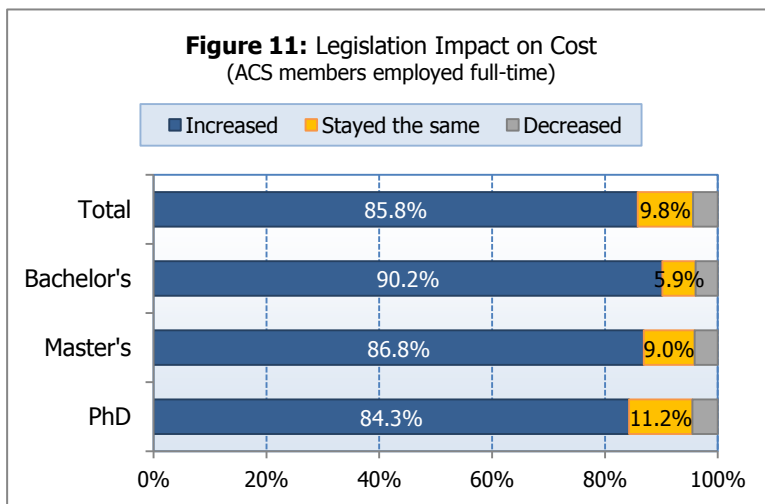
About a third, 32.1%, of ACS members employed full-time believe that in the last five years, government legislation changed their healthcare coverage. On the other hand, 47.4% experienced no change and 20.5% don't know if their healthcare changed in the past 5 years as a result of legislation.

There is some correlation between a full-time employed ACS member's highest degree attained and attributing changes in their healthcare to government legislation. Full-time employed ACS members whose highest degree attained is a bachelor's degree are the most likely, at 40.9%, to

believe that government legislation impacted their healthcare. Those with a PhD are less likely to believe government legislation impacted their healthcare (28.8%).

**CHANGE IN COST AS A RESULT OF LEGISLATION**

Among ACS members employed full-time who say their healthcare changed in the past five years as a result of government legislation, an overwhelming majority, 85.8%, say that government legislation increased the cost of their healthcare. Only 4.4% say that government legislation decreased the cost of their healthcare.



Full-time employed ACS members who attained a bachelor's degree have a lower median income than those whose highest degree is a master's or PhD. With a smaller median income, members with a bachelor's degree are likely more sensitive to any increase in healthcare costs.

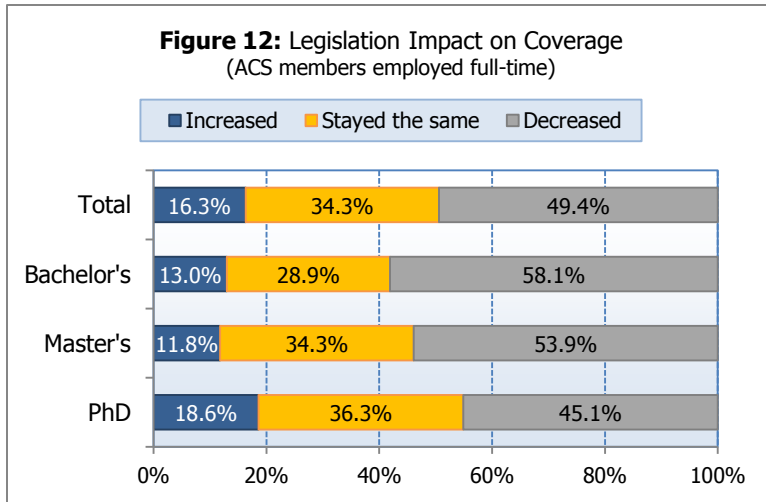
**Figure 11** tends to bear this out, where members with a bachelor's degree are about half as likely as members with a PhD to say that the cost stayed the same – 5.9% vs. 11.2%, respectively.

The proportion of those who say costs decreased is similar across the three degree types: 3.9% for those with a

bachelor's degree; 4.1% for master's degree holders; and, 4.5% among those with a PhD.

**CHANGE IN COVERAGE AS A RESULT OF LEGISLATION**

While the overwhelming majority of full-time employed ACS members indicate that the cost of healthcare increased during the past five years



as a result of government legislation (85.8%, see Figure 11), only 16.3% say that their healthcare coverage expanded as a result of legislation.

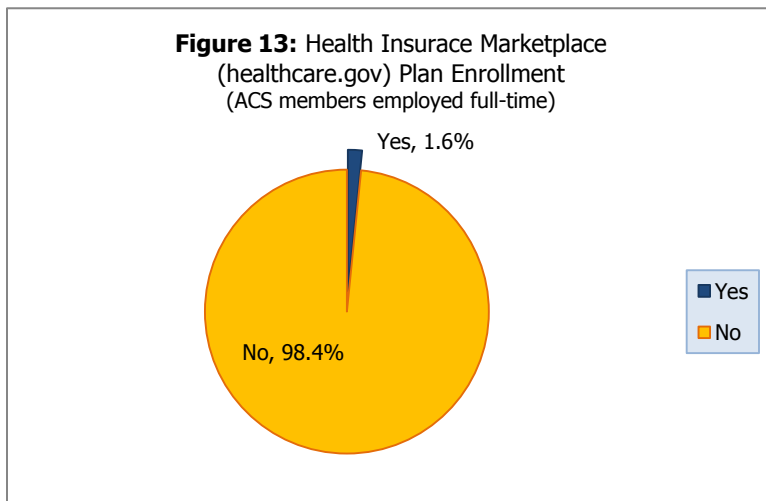
Almost half of all full-time employed ACS members (49.4%, see **Figure 12**) say that government legislation decreased their healthcare coverage during the past five years. A sentiment of paying more for less is prevalent in the current economic climate with regard to healthcare.

The majority of full-time employed ACS members with a bachelor's degree (58.1%) say that they get less coverage

as a result of legislation. As a group, bachelor's degree holders feel more affected by the increased cost and decrease in service compared with master's degree holders and PhDs who earn higher median incomes.

**HEALTH INSURANCE MARKETPLACE**

Very few, about 1.6% of full-time employed ACS members, were enrolled in a health plan from The Health Insurance Marketplace



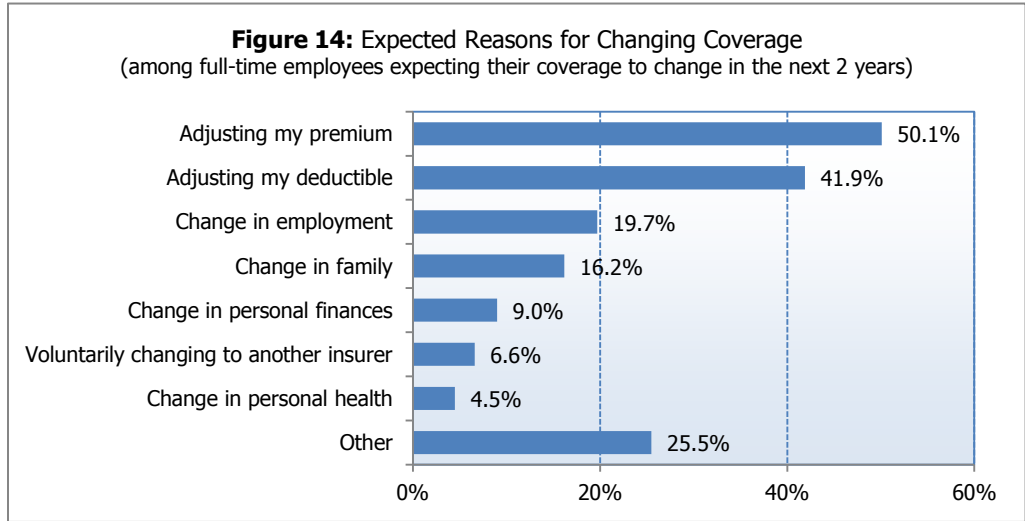
(healthcare.gov) in 2013 or 2014. Problems with the rollout of the healthcare.gov website likely impacted ACS member enrollment rates.

In addition to the plans offered in the Health Insurance Marketplace (healthcare.gov), an emerging trend born out of the Affordable Care Act and the Health Insurance Marketplace are private exchanges. With a private exchange, employers eschew offering health plans to employees and instead provide employees a stipend to select and purchase their own

health plan from a privately operated exchange.

**EXPECTED CHANGE TO HEALTHCARE COVERAGE**

When asked to anticipate their healthcare coverage and benefits in the next two years, 46.8% of full-time employed ACS members expect changes in their coverage and benefits.



Respondents who expect their coverage or benefits to change in the next two years, most anticipate a change in premium (50.1%) or deductible (41.9%).

A full-time employed ACS member's age suggests different anticipated changes in coverage. Those in the middle of their professional and personal lives, age 40-49 are more focused on coverage change due to their premium (60.8%) and deductible (53.1%) than are other ACS members.

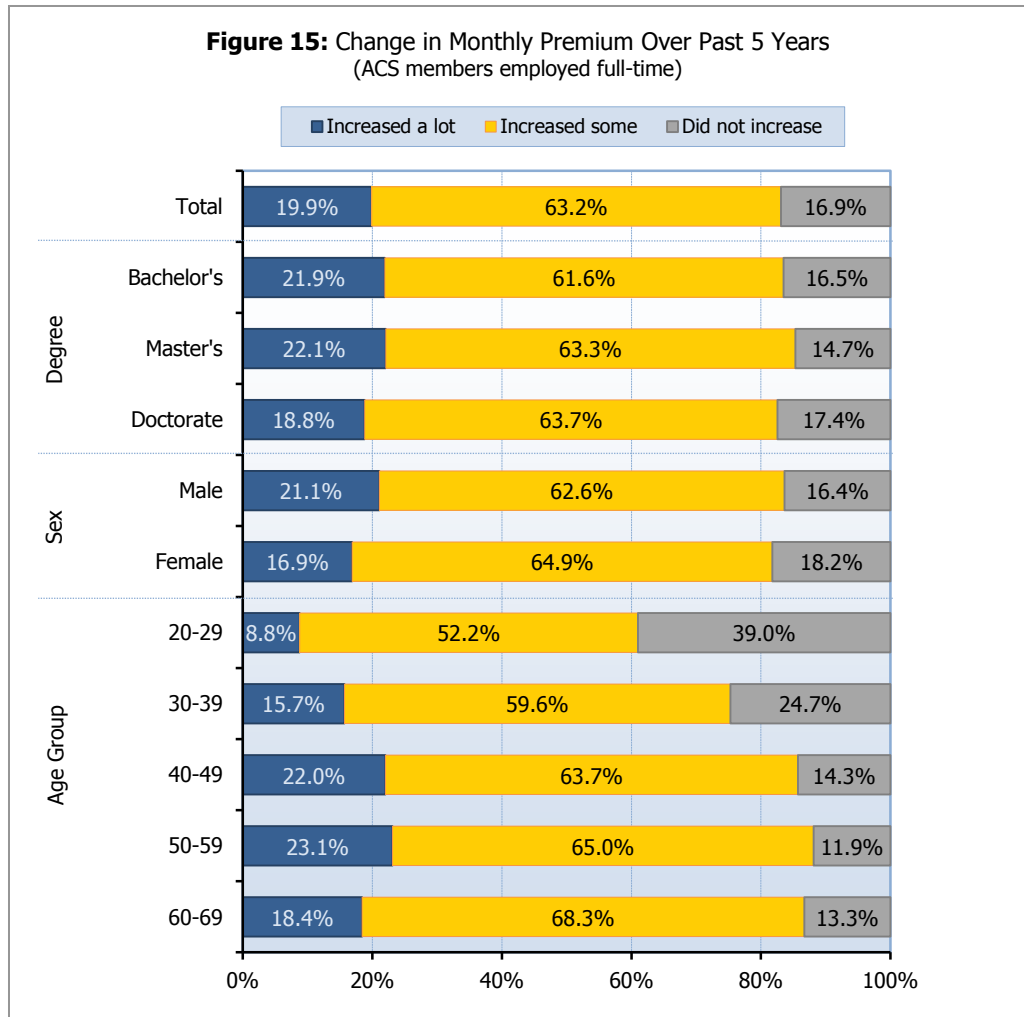
**Table 14.** Anticipated Reasons for Change in Coverage Within the Next Two Years

	Age 20-39	Age 40-49	Age 50-59	Age 60+
Adjust my premium	44.7%	60.8%	52.1%	38.7%
Adjust my deductible	39.4%	53.1%	40.9%	31.5%
Change in employment	22.9%	13.6%	14.4%	34.7%
Change in family	28.6%	9.6%	16.1%	9.3%
Change in personal finances	11.5%	6.3%	8.7%	10.4%
Change to another insurer	8.2%	6.5%	5.7%	6.5%
Personal health	4.6%	3.2%	4.3%	6.3%
Other	16.9%	25.6%	27.5%	33.1%

Change in employment is more strongly anticipated as a reason for change in coverage by those age 20-39 (22.9%) and age 60+ (34.7%). Full-time employed ACS members age 20-39 have a greater focus on change in family (28.6%).

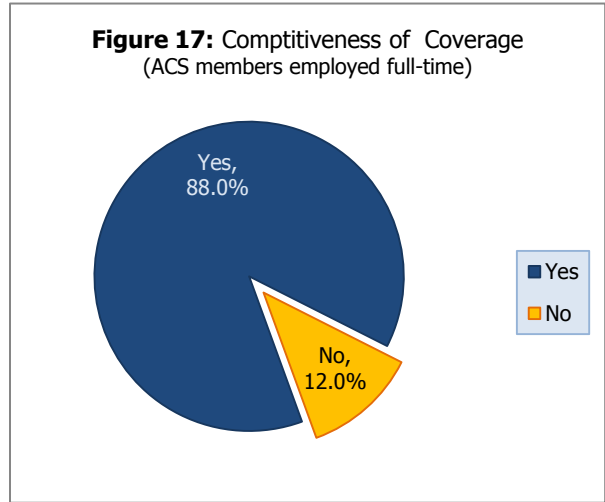
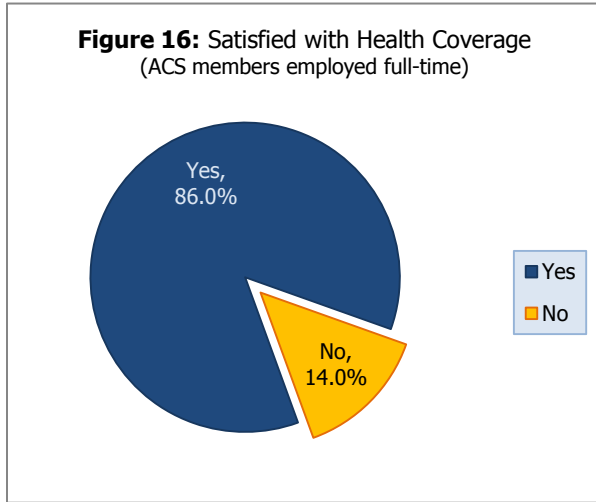
#### **MONTHLY PREMIUMS**

One-in-five (19.9%) of full-time employed ACS members say that their monthly premiums have increased a lot over the past five years and another 63.2% say premiums have increased some, leaving 16.9% of ACS members who report that premiums did not increase. Given that rising premiums are well documented and an impetus for healthcare reform these results are expected. Increases in monthly premiums are more strongly felt by those between the ages of 40 and 59.



**SATISFACTION WITH COVERAGE**

Throughout the uncertainty of the Affordable Care Act and the preceding debates, a rise in monthly premiums and further change ahead with how employers offer healthcare benefits to their employees, 86.0% of full-time employed ACS members say that in general they are satisfied with their current healthcare coverage.



In addition to being satisfied with their health coverage, 88.0% of full-time employed ACS members believe that their current healthcare package is competitive with the benefits provided by other employers and insurers.

**MEDICARE COVERAGE**

**Table 15.** Member of Household Covered by Medicare (ACS members employed full-time)

Age	% Yes
Total	5.4%
20-29	2.0%
30-39	2.2%
40-49	2.5%
50-59	3.5%
60-69	18.9%

During 2013, 5.4% of full-time employed ACS members had someone living in their home that was covered by Medicare. The percentage is much higher for members age 60-69, where 18.9% indicate someone in their home was under Medicare in 2013.

## TECHNICAL NOTES

### THE SAMPLE

Participating member demographics appear in **Tables 16 and 17** by degree level, field of highest degree, gender, ethnicity, and age.

**Table 16.** Demographics

	Number	Percent
<b>Highest Degree</b>		
Bachelor's	1,320	15.9%
Master's	1,220	14.7%
Doctorate	5,778	69.5%
<b>Field of Highest Degree</b>		
Chemical Engineering	518	6.2%
Chemistry	7,144	85.1%
Non-Chemistry	678	8.1%
<b>Gender</b>		
Male	5,551	69.2%
Female	2,471	30.8%
<b>Ethnicity</b>		
American Indian	14	0.2%
Asian	767	9.7%
Black	179	2.3%
White	6,800	85.7%
Other or Multiracial	112	1.4%
<b>Age</b>		
20-29	424	5.3%
30-39	1,831	22.8%
40-49	1,995	24.8%
50-59	2,480	30.9%
60-69	1,283	16.0%

Overall, Table 15 Demographics describes the majority participant as holding a Ph.D. (69.5%), majored in a field of chemistry (85.1%), were white (85.7%), and were between the ages of 30-59 (78.5%). In addition, 7 in 10 respondents were males (69.2%) compared with 3 in 10 females (30.8%). A breakdown of field of highest degree, gender, ethnicity, and age per degree level appears in Table 12. In general terms, the majority of participants were white male chemistry PhDs between the ages of 30 and 59.

The target population of the ACS Comprehensive Salary and Employment Status Survey is ACS regular members under the age of 70 who have U.S. mailing addresses, valid email, and have neither student, retired, nor emeritus membership status. Volunteers were solicited from a randomized sample of 25,000 members drawn from a database consisting of ACS members meeting the above criteria. A total of 7,078 usable responses were received for a response rate of 28.3%.

In mid-March a postcard was sent by mail to all qualified members, followed by an email invitation a day later. Both invitations asked them to complete the survey online, or to request a paper copy. A total of 4 email reminders were sent out to the incomplete or missing responses.



**Table 17.** Demographics by Degree

	Bachelors	Masters	Doctorate
<b>Field of Highest Degree</b>			
Chemical Engineering	8.2%	5.8%	5.9%
Chemistry	82.7%	73.3%	88.9%
Non-Chemistry	9.2%	20.9%	5.2%
<b>Gender</b>			
Male	64.2%	59.5%	72.4%
Female	35.8%	40.5%	27.6%
<b>Ethnicity</b>			
American Indian	0.3%	0.3%	0.1%
Asian	2.6%	5.9%	12.1%
Black	2.8%	2.6%	2.0%
White	91.0%	88.4%	83.8%
Other	1.2%	1.0%	0.7%
<b>Age</b>			
20-29	20.0%	5.2%	1.8%
30-39	19.4%	19.7%	24.4%
40-49	18.9%	20.9%	27.0%
50-59	29.1%	35.7%	30.1%
60-69	12.5%	16.9%	16.4%

**DEFINITIONS**

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

*Chemist:* A respondent who indicated a work specialty of chemistry or biochemistry (categories 2 through 17 of Part 1, Question 3 of the questionnaire) or if a non-chemistry work specialty (categories 18 through 21 of the same question), a degree field of chemistry or biochemistry.

*Chemical Engineer:* A respondent who indicated a work specialty of chemical engineering (category 1 of Part 1, Question 3 of the questionnaire).

*Non - chemist:* A respondent whose work specialty category was other than chemistry or chemical engineering or if non - chemistry work specialty, no degree field of chemistry or biochemistry.

*Academic:* Pertaining to a Ph.D. working in a college or university (i.e., a private or public institution that awards a degree of associate or higher).

*Unemployed:* A respondent who was not employed and was seeking employment (category 4 of Part 1, Question 4 of the questionnaire). The unemployment rate was calculated to compare with the national rate by dropping those "not seeking" or "fully retired" from the labor force.

Respondents indicated their employment status, base annual salaries, and ages as of March 1, 2014. Each respondent's place of employment (current or most recent) determines his or her geographic region. The listing of states by geographic regions follows this section.

### **ROUNDING**

Comprehensive Salary Survey results are rounded to the nearest \$100 for dollar amounts and to one decimal point for percent figures.

### **DISCREPANCIES AMONG TABLES**

Some pairs of tables contain totals that should be identical but are not. For example, two tables that represent information about Ph.D. respondents should show the same total number of Ph.Ds, but for various reasons might not. Missing response items in individual surveys generally causes this phenomenon. Not every respondent answers all questions all of the time. To illustrate, if one table groups the Ph.Ds according to specialty and another groups them according to work function, the totals will differ unless the number who did not indicate their specialty is the same number as those who did not indicate their work function.