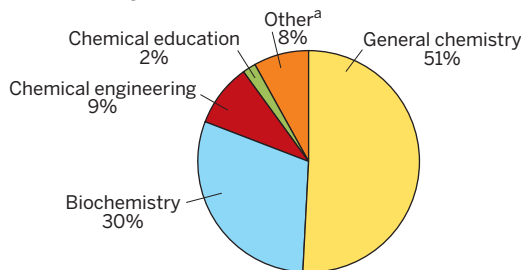


Percentage of bachelor's degree respondents who were unemployed job seekers in 2014:

**13**  
In 2013:  
**16**

Most bachelor's degrees were in general chemistry or biochemistry in 2014.



B.A./B.S. respondents = 1,804

<sup>a</sup> Includes respondents who selected agricultural/food, analytical, inorganic, medical/pharmaceutical, organic, physical, or polymer chemistry or materials science.

Percentage of respondents who are female:

**51**

Median age of 2014 survey takers:

**22**

for bachelor's degree holders

Median 2014 starting salary for inexperienced grads with a bachelor's degree:

**\$35,000**

at firms with fewer than 50 employees;

**\$50,000**

at firms with 25,000 or more employees

## NEW-GRAD SALARIES & EMPLOYMENT

ACS survey of 2014 **CHEMISTRY GRADUATES** shows slight improvement in both pay and employment

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**FOR NEWLY MINTED GRADUATES** in chemically related fields, the job market in 2014 was a bit more welcoming than in prior years, with unemployment down and salaries up, according to an American Chemical Society survey.

The unemployment rate for those looking for work dropped to 12.4%, down from a peak of 14.9% in 2013 and a rate of 12.6% in 2012. Nevertheless, the 2014 unemployment rate for new grads was still far worse than the rate for all ACS member chemists, which was just 2.9% in 2014 (C&EN, Sept. 1, 2014, page 68).

For those new grads who managed to get hired, the survey findings were mixed. The percentage of new grads who found full-time, permanent positions edged up from 29.0% in 2013 to 29.6% in 2014. However, more graduates took on part-time or temporary work; their ranks expanded from 17.7% in 2013 to 18.8% in 2014. The fraction that headed to grad school or a post-doctoral position was 35.1%, virtually unchanged from the prior year (C&EN, June 2, 2014, page 28).

Meanwhile, median salaries for full-time, permanent jobs for inexperienced grads increased 1.0% between

2013 and 2014, though the gain wasn't spread evenly among the different degree levels.

These are some of the key findings of ACS's survey of individuals who graduated during the 2013–14 academic year with degrees in chemistry and related fields.

The survey, which was sent to 12,771 recent graduates in October and November 2014, is conducted annually by Gareth S. Edwards of the ACS Department of Re-

search & Market Insights under the guidance of the ACS Committee on Economic & Professional Affairs. A total of 2,089 usable responses were received, for an overall response rate of 16.4%.

Some respondents didn't answer all of the survey questions, so data in different tables may not match.

The respondents can be divided into several categories—by degree or experience level, for instance, or field of study, gender, or type of employment. For some of these groups, the number of responses was small and not necessarily representative of the wider pool of chemistry graduates in a given group. As a result, most of this article concentrates on grads with a bachelor's degree, who account for the vast majority of those surveyed. Those with a bachelor's degree were responsible for 87.6% of responses, compared with 4.8% from those with a master's and 7.6% from Ph.D.s.

When all degree levels are included, re-

### STARTING SALARIES OF INEXPERIENCED GRADS

Adjustment for inflation shows that chemists' buying power continued to erode in 2014

\$ THOUSANDS	B.A./B.S.		M.S. <sup>a</sup>		PH.D. <sup>a</sup>	
	CURRENT	CONSTANT	CURRENT	CONSTANT	CURRENT	CONSTANT
2005	\$37.0	\$37.0	\$52.0	\$52.0	\$75.0	\$75.0
2006	38.0	36.8	48.8	47.3	66.5	64.4
2007	40.2	37.9	52.0	49.0	77.0	72.5
2008	40.0	36.3	52.0	47.2	80.0	72.6
2009	38.0	34.6	60.0	54.6	76.3	69.4
2010	40.0	35.8	45.0	40.3	75.0	67.2
2011	40.0	34.7	46.7	40.6	85.0	73.8
2012	40.0	34.0	48.0	40.8	80.0	68.1
2013	39.6	33.2	55.0	46.1	75.8	63.5
2014	40.0	33.0	52.0	42.9	62.9	51.9

**NOTE:** Median annual salaries of responding new graduates with full-time, permanent employment and less than 12 months of technical work experience prior to graduation. Constant dollars are 2005 dollars and are calculated using the Consumer Price Index. <sup>a</sup> Low survey response rates from M.S. and Ph.D. degree holders contribute to volatility in median salaries reported here.

spondents are roughly equally divided along gender lines, with women accounting for 50.8% of responses. Some 73.0% of respondents are white, 14.2% are Asian, 4.7% are black, and 4.4% are multiracial. A question on ethnicity revealed that 7.6% of respondents are Hispanic.

Among the respondents, 85.7% are U.S. natives, 6.7% are naturalized U.S. citizens, 4.3% hold temporary visas, and 3.3% are permanent residents.

The most popular field of study for bachelor's degree recipients was general chemistry, with just over half of B.A. and B.S. degrees awarded in this field, the survey showed.

Nearly one-third of the degrees were in biochemistry, and nearly one-tenth were awarded in chemical engineering.

Of the responding bachelor's degree recipients, the largest fraction, at 35.1%, reported that they were pursuing an advanced degree. That number was unchanged from the prior year. Some 28.0% found full-time, permanent employment in 2014, up from 26.9% in 2013. Yet 19.6% were working in temporary or part-time jobs, up from 18.3% in 2013. On the flip side, the fraction who were unemployed and looking for a job was 13.2% in 2014 compared with 15.8% a year earlier.

One-third of the graduates with a bachelor's degree who planned to take up advanced studies intended to stick with chemistry as their subject of choice. Nearly one-quarter opted instead for medicine. Pharmacy and pharmacology drew 12.7%, and 6.5% planned to study biochemistry.

Of the graduates who landed a job in 2014, most headed to industry and non-manufacturing roles, with 56.8% of bachelor's degree graduates going into these sectors. Academia attracted another 34.2% of these grads. Just 6.9% went into government jobs, and 2.0% were self-employed.

For those working in industry and government, the median starting salary for inexperienced graduates with a bachelor's degree stood at \$40,000 in 2014, unchanged from 2013. This category of workers encompasses employees with less than 12 months of work experience prior to graduation. Inexperienced bachelor's recipients working in academia fared less

## BACHELOR'S EMPLOYMENT STATUS

Full-time employment continued to recover while unemployment eased in 2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>BACHELOR'S</b>										
<b>Full-time</b>	40%	42%	43%	40%	32%	33%	33%	34%	37%	38%
Permanent	31	34	33	31	23	24	23	24	27	28
Temporary	9	9	10	9	9	9	10	10	10	10
<b>Part-time</b>	4	4	7	5	7	6	8	9	9	9
Permanent	1	1	1	1	2	2	2	2	2	3
Temporary	3	4	5	4	5	5	6	7	7	6
<b>Graduate/professional school</b>	44	44	40	41	46	46	41	39	35	35
<b>Not employed</b>	12	10	11	14	15	15	17	18	20	17
Seeking	8	6	8	10	12	12	14	13	16	13
Not seeking	4	4	3	4	3	4	4	4	4	4

NOTE: Employment status of all respondents as of October each year. Numbers may not sum to subtotals or total 100% because of rounding.

## ADVANCED STUDIES BY TOPIC

Most chemically trained B.A./B.S. grads continued studies in a field other than chemistry

### FIELD OF FURTHER STUDY

Chemistry	34%
<b>Other sciences</b>	26
Pharmacology	13
Biochemistry	7
Life sciences	2
Other/math	5
<b>Engineering</b>	6
Chemical/biochemical	4
Other	2
<b>Health</b>	28
Medicine	24
Dentistry	4
<b>Other<sup>a</sup></b>	6

NOTE: Percentages are of respondents who were continuing advanced studies full-time after earning a bachelor's degree in a chemical field in 2014. Numbers may not sum to subtotals because of rounding. <sup>a</sup> Includes business management, education, law, and others.

well than their peers: Their median starting salary was \$36,100 in 2014, though that was an improvement over the 2013 median salary of \$34,000.

Not surprisingly, degree level also has a significant impact on salary. Inexperienced graduates with a B.A. or B.S. had a median salary of \$40,000 in 2014, up from \$39,600 the previous year. Those with a Ph.D. had a median salary of \$62,900. Although that figure is considerably lower

## BACHELOR'S DEGREE CHEMISTS VS. CHEMICAL ENGINEERS

Chemical engineering grads were more likely to go into industry and were better paid than chemists

	CHEMISTS	CHEMICAL ENGINEERS
<b>BY EMPLOYMENT</b>		
Full-time	36%	58%
Part-time	10	4
Further study	37	18
Unemployed	17	21
Seeking	13	15
Not seeking	4	6
<b>BY EMPLOYER</b>		
Academia	36%	15%
Industry	55	78
Government	7	5
Self-employed	2	2
<b>BY GENDER</b>		
Women	52%	41%
<b>BY CITIZENSHIP</b>		
Temporary visas	1%	4%
<b>SALARIES (\$ thousands)</b>		
Full-time permanent	\$38.0	\$67.3

NOTE: Median salary data for all responding 2014 bachelor's degree recipients regardless of experience. Numbers may not sum to subtotals or total 100% because of rounding.

than the \$75,800 median salary for Ph.D.s in 2013, the low number of respondents in this category causes considerable volatility in the median from year to year.

Salaries varied even more widely when

## BACHELOR'S SALARIES BY PRIMARY WORK FUNCTION

Salaries for women were lower than those for men in all job areas

\$ THOUSANDS	MEN	WOMEN	ALL
Development/design	\$63.5	\$52.5	\$55.0
Management	43.3	36.5	41.0
Professional services	60.0	41.7	55.0
Research	47.8	40.0	42.0
Production/quality control	41.5	40.0	41.0
Teaching	50.2	43.0	46.5
Other	35.0	34.0	35.0
<b>ALL</b>	<b>\$47.8</b>	<b>\$40.0</b>	<b>\$42.6</b>

**NOTE:** Median salaries for responding 2014 bachelor's degree graduates with full-time, permanent employment.

## BACHELOR'S SALARIES BY EMPLOYER SIZE

Median pay scaled with size of firm

SIZE OF EMPLOYER	MEDIAN SALARY (\$ THOUSANDS)
Fewer than 50 employees	\$35.0
50-99	34.2
100-499	38.0
500-2,499	42.3
2,500-9,999	45.0
10,000-24,999	42.0
25,000 or more	50.0

**NOTE:** Median salaries of responding 2014 bachelor's degree graduates with full-time, permanent employment.

and employment agencies (8.9%).

Those numbers change considerably when the question is opened to graduates with all levels of experience. Those with a B.A. or B.S. still had the best results via electronic methods, though the category's share dropped to 26.1%. Some 20.0% reported that faculty advis-

broken down by the size of a graduate's employer. For those with a bachelor's degree working at an employer with fewer than 499 staffers, the median salary ranged from \$34,200 to \$38,000 in 2014, depending on employer size. Median salaries ranged from \$42,000 to \$45,000 for those working at employers with 500 to 24,999 staffers. At organizations with 25,000 or more employees, the median salary for bachelor's recipients was \$50,000. These figures include respondents with all levels of experience.

So what's the best way to land a job? Among inexperienced graduates with a B.A. or B.S., some 32.3% reported that they had

## WHERE THE JOBS ARE

Respondents with a Ph.D. headed to academia

	B.A./B.S.	M.S.	PH.D.
Academia	34%	47%	51%
Chemical industry	31	28	23
Nonmanufacturing	26	21	13
Government	7	nm	12
Self-employed	2	nm	1

**NOTE:** Percentages are for all responding 2014 graduates with full- or part-time employment. **nm** = not meaningful because of small sample size.

success using electronic methods. The next most effective methods were informal channels (19.8%), placement services (17.6%),

ers were the most effective for helping them find a job, followed by informal channels (17.1%), placement services (8.9%), and former jobs (8.2%).

The ACS survey also asked graduates to evaluate their jobs. Among respondents with a bachelor's degree, 46.4% strongly agreed with the statement that their jobs were related to their fields; that figure rose to 66.4% among those with a Ph.D.

Some 39.4% of bachelor's and 60.0% of Ph.D. holders strongly agreed that their jobs were commensurate with their education and training. However, among those with a B.A. or B.S., only 37.9% strongly agreed that their job was professionally challenging. Ph.D.s were more content, with 60.7% strongly agreeing with that statement. ■

### & MORE ONLINE

Check out ACS's full report on the starting salary survey results at [www.acs.org/2014newgradreport](http://www.acs.org/2014newgradreport).



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