

## The 1999 Survey of Salary Levels among BC Occupational Hygiene Professionals

### ***Introduction***

This survey was coordinated by the UBC Occupational Hygiene Program and the local section of the American Industrial Hygiene Association (AIHA). We intend it to be the first in a series of periodic surveys, perhaps every 2 or 3 years, so as to track trends in salary levels. If you are interested in obtaining further regional information, the Pacific Northwest section of the AIHA also published a survey of US salaries covering the period 1995 - 1997<sup>1</sup>.

### ***Demographics***

A confidential salary survey was mailed out with a stamped, addressed envelope in April, 1999 to 191 individuals who were current members of the local AIHA section (BC and Yukon) or graduates of the UBC Occupational Hygiene Program, which has been granting masters degrees in hygiene since 1994.

75 responses were received, giving a response rate of 39%. Two responses failed to provide adequate information, and so the analysis was completed on 73 surveys. All respondents were from British Columbia or the Yukon, with the 4 exceptions: 3 from Alberta and one from Washington State. All subjects were analyzed together.

Respondents were asked in which sector they were employed (Figure 1). The largest employment groups were "Government/Institutions" (n=23), and "Regulator (e.g. WCB)" (n=21), followed by "Industry" (n=11), "Self-employed/Consulting" (n=11), and "Research/University" (n=6).

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<sup>1</sup> Spath, W.K., Montana Tech, 1997

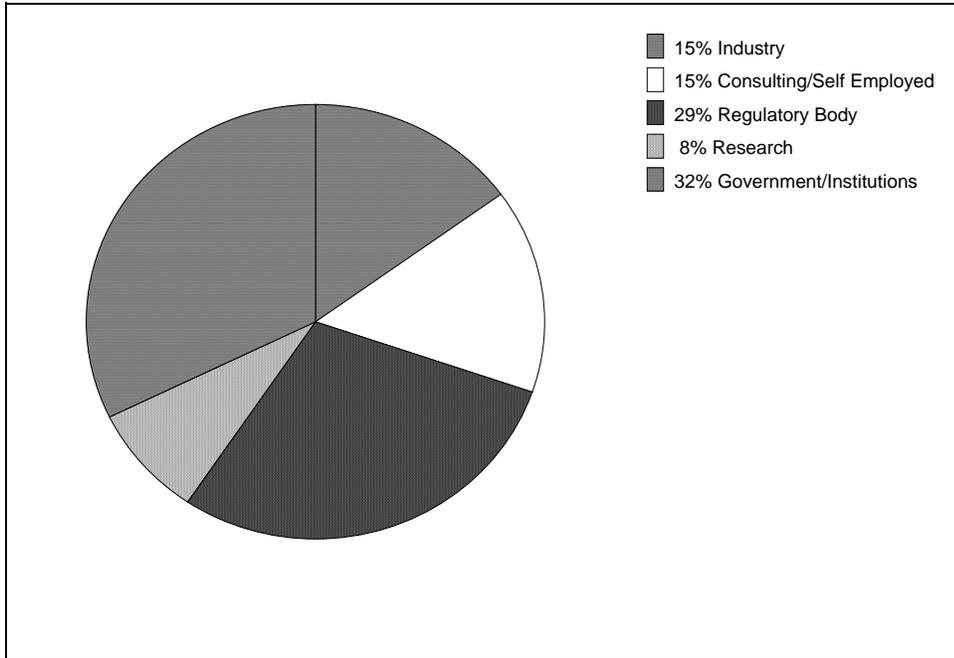
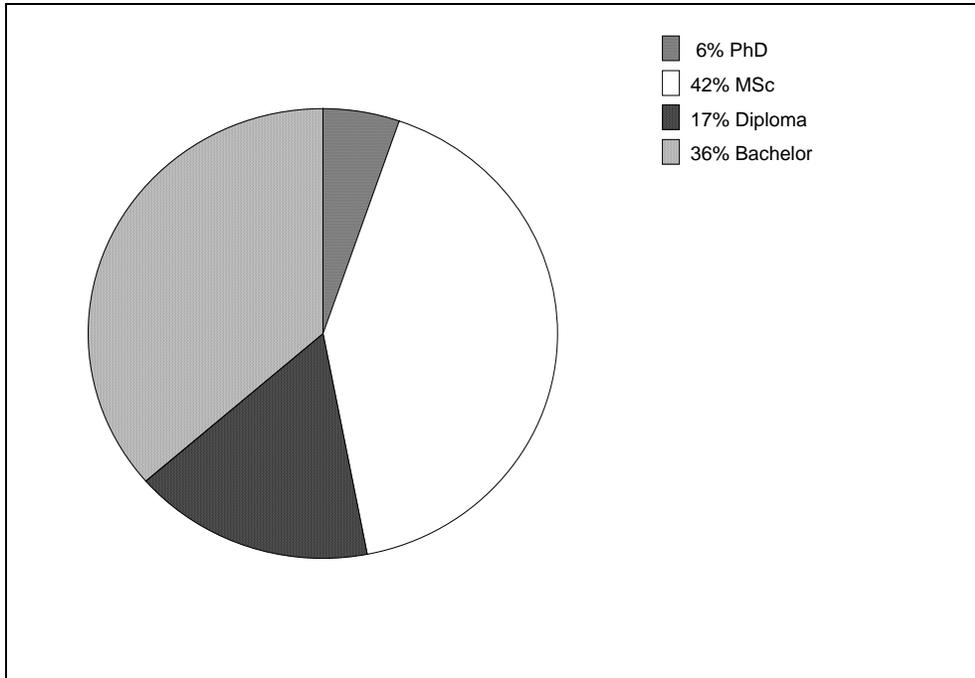


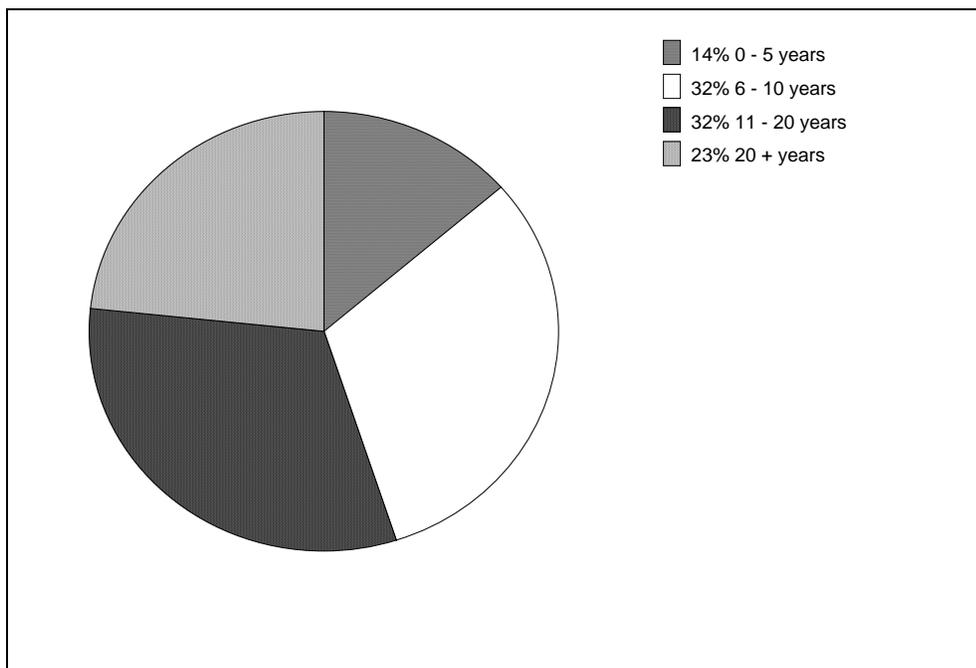
Figure 2 shows the distribution of "highest" degree obtained. All respondents had some level of post-secondary diploma or degree. Of the respondents, 4 had a doctoral degree, 30 had a masters degree, 26 had either a BA or B.Sc. and 12 had a diploma.



Information on respondents backgrounds was obtained from a question which asked the highest degree obtained, and its field. Unfortunately, several respondents listed more than one discipline, but the following table gives some idea of the education discipline among respondents:

| Occupational Hygiene | Chemistry | Business Administration | Biology | Physics or engineering | Safety | Kinesiology or ergonomics | Other |
|----------------------|-----------|-------------------------|---------|------------------------|--------|---------------------------|-------|
| 32                   | 14        | 4                       | 4       | 4                      | 3      | 3                         | 13    |

Figure 3 shows the distribution of respondents by experience. Eighty six percent have greater than 5 years experience in the field.



Thirty four of the 73 respondents had obtained some form of certification:

| CIH | ROH | CRSP | ROHT | P. Eng. | Other |
|-----|-----|------|------|---------|-------|
| 16  | 9   | 4    | 2    | 3       | 16    |

No respondents reported having a CSP or IHIT designations. Seven of the 9 having the ROH also had a CIH designation, and thirteen respondents in total had more than one certification.

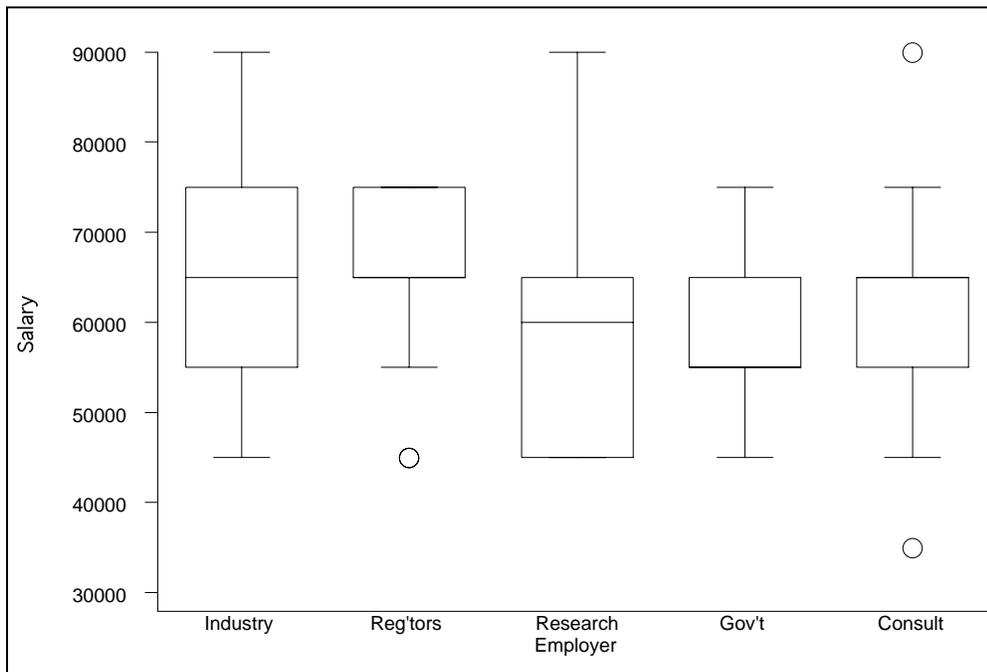
Of those with greater than 5 years experience and hence eligible for CIH/ROH certification, it had been obtained by only 29%. The highest rate of certification was in the 11 - 20yr experience group at 39%. The level was 29% in the 20 + year group, and 9% in the 6 - 10 year group. None with < 6 years experience had a CIH/ROH designation.

### **Salary level, and determinants of Salary Level**

The mean salary level reported by respondents was \$62,000 (standard deviation, \$12,000).

#### **Salary Level by Employment Category**

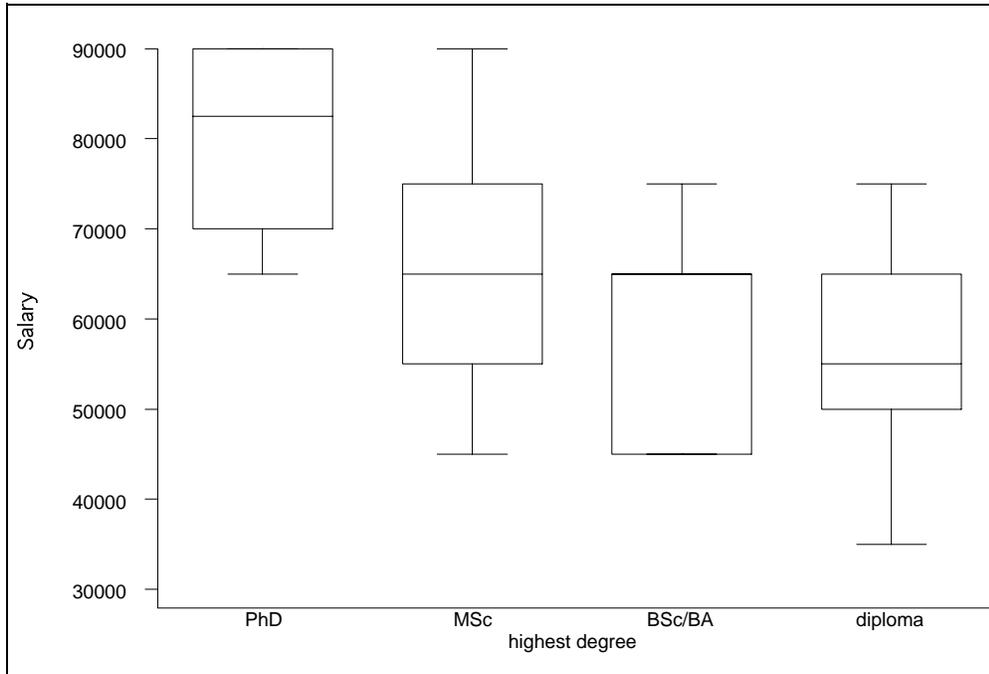
Figure 4 shows the income by employment category. These "box and whisker plots" show the median income (middle line), as well as the 25<sup>th</sup> and 75<sup>th</sup> percentiles (outside of box - inter quartile range, or IQ). The whiskers show the "adjacent values" ([25<sup>th</sup> percentile - 1.5 X IQ], and [75<sup>th</sup> percentile + 1.5 X IQ]). Data points outside of the adjacent values are plotted individually.



As we can see, there is a fair spread in salary range in each employment category, with perhaps the exception of the regulatory field (mean salary \$66,000). Mean salaries for the other fields are: Industry, \$66,000; Research, \$61,000; Government/Institutions, \$58,000; and Self-employed/Consulting, \$62,000.

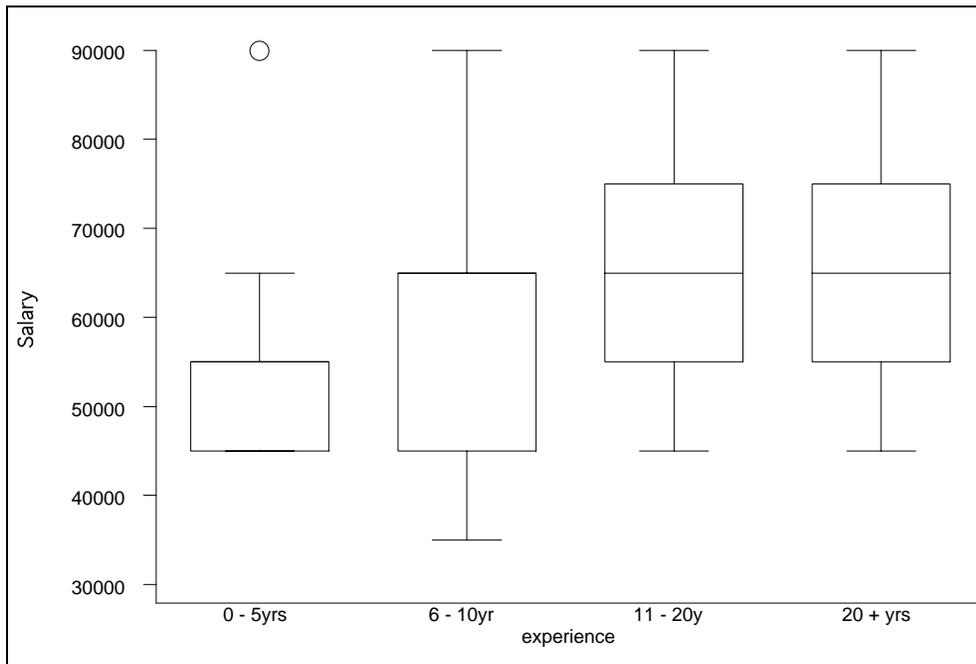
### Salary Level by Education

Salary levels by highest education achieved are shown in Figure 5. Mean Salaries by degree were: PhD, \$80,000; Masters, \$64,300; Bachelors, \$59,600; and Diploma, \$55,000.



## Salary Level by Experience Category

Salary level follows a predictable pattern by amount of experience, although it seems to plateau among the most experienced categories (Figure 6). The greatest variation appears to be in the 5 - 10yr group.



Mean salaries are \$55,500 (0 - 5 yrs), \$59,000 (6-10 yrs), \$65,000 (11 - 20 yrs) and \$ 66,000, greater than 20 years experience.

## Certification and Salary Level

The mean salary among those with some form of certification was \$64,000, vs. \$60,000 among those without certification. Of the 18 who had either a CIH or ROH professional designation, the mean was \$70,000 compared to \$59,000 for those without one of these designations.

## Multivariate Analysis of Salary Level

Because of the associations among various determinants of salary level (such as experience level and certification), multiple linear regression modeling was used to investigate the individual contribution of the various factors.

Salary level was modeled on "employer category", "experience", "certification" and "highest degree".

The final model explained 38% of the variability, and the indicated the following factors as being significant at the  $p < 0.20$  level:

| Factor                   | Increment (\$) |
|--------------------------|----------------|
| Baseline                 | 51,100         |
| Ph.D.                    | 19,300         |
| Working in Regulation    | 7,000          |
| Working in Industry      | 6,900          |
| CIH                      | 5,900          |
| 11 - 20 years experience | 5,800          |
| Consultant/self employed | 4,800          |
| 20 + years experience    | 4,700          |
| M.Sc.                    | 4,600          |

### **Conclusion**

The survey presents information regarding salary levels in members of the BC/Yukon AIHA section and graduates of UBC's Occupational Hygiene Program. It may be biased to the extent that the local AIHA section over or under-represents certain groups within the BC hygiene community, either by geographical region, or specialization (such as safety or ergonomics). It may also be biased if the individuals who participated in the survey differ systematically from those who did not.

Several weaknesses were apparent with the survey itself, that we will improve for the next round. It might, for example, be interesting to know the respondents' field of professional specialization, supervisory responsibilities, etc. Another goal for the next round will be to improve the response rate. Please forward comments, questions and suggestions to Dr. Robert Lockhart.