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## **Results of CRA Industrial Salary Survey of CS Research Labs**

By William Gear

In October 1999, CRA conducted its third Industrial Salary Survey of CS Research Laboratories. Twelve organizations representing 1,378 researchers responded. Of these researchers, 91 percent held Ph.Ds. (Eleven of the organizations are members of CRA.) Companies that completed the survey received an early summary of the data in November 1999, followed by a detailed analysis in February 2000. The results are summarized in the graph below, which compares the data with those of the most recent Taulbee Survey of Academic Salaries (*CRN*, March 2000).

The survey covered Ph.D. CS researchers. The respondents were asked to provide minimum, average, and maximum salaries when starting and over four additional five-year periods. CRA computed the averages of these numbers, shown in the graph. The respondents provided data about *base salary* (the annual salary independent of items such as bonus and options) and *variable salary* (which includes items such as bonuses and the value of stock options that respondents were asked to estimate). Note that, in this year's survey, the high value of options reported by a few respondents had a significant effect on the average salaries and a major impact on the numbers reported for average maximum salaries. Without the variable salary data, the average base salaries ranged from \$9,000 to \$27,000 lower; the average minimum base salaries ranged from \$3,000 to \$15,000 lower; and the average maximum salaries ranged from \$20,000 to \$40,000 lower.

Because companies provide annual adjustments at different times of the year, respondents were also asked to indicate the month in which annual salary adjustments were made. In order to compare these data with the Taulbee Survey of tenure-track academic CS salaries (which are almost always for the period September through August), the industrial data were adjusted to approximate the pay scale for the period September 1999 through August 2000. This was done by assuming that the average company will adjust its scales for CS by 8 percent from 1999 to 2000 (this is not the same as assuming an average salary increase of 8 percent because the actual salary increases people receive also factor in an additional year of experience). The graph shows the *base plus variable salary* for the

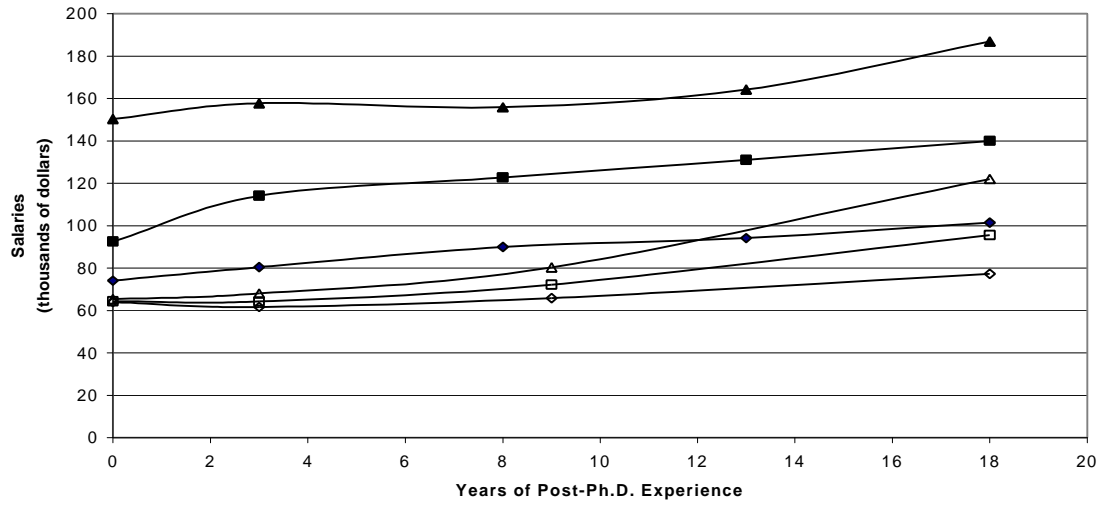
average minimum, average, and average maximum salaries plotted by years since receiving the Ph.D.

The Taulbee data for the nine-month tenure-track academic salaries are those for the average over all 132 responses from 155 US computer science departments polled (table 24 in the Taulbee Survey, *CRN*, March 2000). Starting salaries are for all US CS and CE departments responding (table 30, row 1). The experience levels assumed for assistant, associate, and full professors are 3, 9, and 18 years, respectively. This is based on the assumption that the typical experience range in CS is 1 to 5 years for assistant professors, 6 to 12 for associate, and 13 and up for full professors, with demographics still favoring younger full professors. Admittedly, these ranges are somewhat arbitrary. Readers can adjust them to draw whatever conclusions they wish! Note that the minimum salaries reported usually correspond to those with less experience in an experience range, while the maximums tend to correspond to those with more experience (although there are many counter examples). However, no adjustment was made for this observation in either the industrial or academic graphs. The industrial experience ranges surveyed were 1 to 5, 6 to 10, 11 to 15, and 16 to 20 years. The data are plotted at the midpoints—3, 8, 13, and 18 years, respectively.

This month CRA will again conduct its survey of industry lab salaries for 2000-01. Companies that complete the survey will receive summary results in December, followed by a detailed analysis in February 2001.

*Dr. Gear retired as President of the NEC Research Institute in 1999. He was a CRA board member for many years. As the chair of CRA's Industry Committee, Dr. Gear was instrumental in initiating the industrial labs salary survey in 1997.*

Academic and Industrial Lab Salaries  
1999-2000



◆ 12-month Ind Ave Min    ■ 12-month Ind Average    ▲ 12-month Ind Ave Max  
 ◇ 9-month Acad Ave Min    □ 9-month Acad Average    △ 9-month Acad Ave Max