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Employment of Engineers and Scientists

A deepening recession has brought the official national unemployment rate to about 10 percent. In its early phases, the downturn affected mainly the construction and auto industries, their suppliers, and people who were not well prepared or especially skilled. But now the effects of recession, coupled with high interest rates, are spreading to most segments of the economy. Thus far, scientists and engineers have been relatively insulated from the decline. For example, unemployment among members of the American Chemical Society is less than 2 percent and few, if any, major layoffs have been announced. However, the first quarter profit of the chemical industry is down 33 percent and continuation of that trend would surely affect employment.

Prospects for employment of young scientists and engineers by industry have changed recently. Six months ago, industry was avidly, even frantically, recruiting. But the deepening recession has generated gloom and uncertainty. Pessimists have begun to remind us of the situation in the late 1960's when stories appeared in the *New York Times* and elsewhere about an engineer driving a taxi. These stories dramatized unemployment among engineers and contributed to a sharp drop in engineering enrollments and a later shortage of engineers.

To obtain an indication of developing attitudes and trends, I contacted personnel officers in ten major firms active in applied science and engineering. Only one of them will hire more young engineers during the current recruitment year than it did in the preceding period. Imbalances of supply and demand vary with fields. In a few specialties, such as those related to computers and their applications, positions are still unfilled. In some fields, such as construction engineering, mining engineering, and metallurgy, there are far more applicants than positions. Respondents were confident that they would be recruiting actively in the coming season. The consensus was that the top fourth of classes in chemical, electrical, and mechanical engineering will be eagerly sought. In those fields, the upper two-thirds of the graduates will probably find jobs in their profession. One of the officers said that a person in the lower third needs to show leadership qualities and be an extrovert. Then he or she will probably wind up in marketing.

The personnel officers also indicated that earlier broad patterns of job and salary offers provided by the College Placement Council* are likely to continue. Engineers, who constitute about 8 percent of the graduating class, have received more than 60 percent of the offers and the salaries provided exceed those in other fields. The latest compilation includes data for the period July 1981 to March 1982 and thus covers most of the recruitment for the current graduating class. The top and bottom monthly salary offers (90th and 10th percentiles) were as follows: chemical engineering, $2425 and $2100; electrical engineering, $2225 and $1834; mechanical engineering, $2350 and $1875; computer science, $2125 and $1608; and physical and earth sciences other than chemistry, $2400 and $1360. Offers were much lower in some fields. The corresponding figures for some of them were: biological sciences, $1970 and $1000; business, $1870 and $1075; and humanities, $1650 and $833.

In whatever situation humans find themselves, they tend to overreact and to assume that a present state of affairs will continue indefinitely. The bleak outlook for some fields will not prevail forever, and the favorable status of engineers and physical scientists may lead to a surplus of them. However, the top fraction will be much sought after. We all know that good grades are an imperfect measure of a person's potential. But in an imperfect world, it is useful to have them, especially if they are in courses known to be demanding. The world must adjust to changed energy sources and feedstocks and to a further development of the computer revolution. These changes will require two decades at minimum and will demand the attention of many of our most capable minds.—PHILIP H. ABELSON

**CPC Salary Survey*, March 1982.