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## Underemployment of Scientists and Engineers

The plight of aerospace scientists and engineers has been drawing front-page attention. Less dramatic, but fully as important, are trends affecting most scientists and engineers. A conjunction of developments has sharply curtailed job opportunities in industry, academic, and government. These trends seem likely to persist.

The current economic slump has eroded industrial profit margins at a time when most companies face huge expenditures for pollution control. Managements have cut back on deferrable expenditures, including research. Industrial scientists are not optimistic that the curtailments will end soon. Growing competition from Japan and Germany represents a long-range constricting influence; many jobs have already migrated to those countries.

The economic slump and public disillusionment with higher education have led to financial strains for most universities. Few new appointments are being made. The science and engineering departments are additionally affected by the outcry against technology. In many places their enrollments are down, and this will bring further pressure to cut faculties.

Given the present climate of public opinion, it is not politically feasible for the government to do much about the situation. Direct employment of scientists and engineers has decreased slightly during the past year. Massive new support for technological goals is not in sight.

What will happen to the scientists and engineers who are having difficulty finding jobs in fields for which they have been trained? The major problem appears to reside with individuals who are in their forties or older. The young graduates are more flexible. Their knowledge of new developments is current, and they have the backing of their professors and placement bureaus. Some of the young graduates will find it necessary to accept employment that is only marginally related to their training. Removal from the ranks of science and engineering will constitute a serious loss to the nation; it will not be so great a blow to the individuals.

The senior scientists and engineers face a rougher situation. Their services have been in great demand, and they have not experienced the necessity of seeking employment. Their world has fallen apart. They need help.

Some companies and congressmen would like to believe that high technology can be effectively directed to solving problems of society such as pollution. This is only wishful thinking. A limited number of individual scientists and engineers are being hired by municipalities, states, and industries, but no mass hiring is likely. In many instances companies have filled their needs within their organizations.

In this situation it would be a mistake to place too much dependence on government. Legislation calling for funds for retraining has been introduced in Congress. But retraining without specific job openings is a waste of money, time, and emotion. Experience has shown that scientists and engineers quickly develop needed skills on the job.

At present the best job prospects seem to lie with the electrical utilities and with service industries such as health care. What is needed is a strenuous effort to identify possible openings that match to some degree the potentialities of individuals. Volunteer groups associated with scientific and technical societies could and should play an important role. This activity might be limited by lack of funds, but surely not by lack of goodwill and imagination.—PHILIP H. ABELSON