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Chemistry in the Universities

Adequate financial support for basic research in chemistry in universities should enjoy a very high priority among the federal granting agencies. Chemistry is crucial to both science and technology. Advances in most sciences are dependent both on superior chemical techniques and on new fundamental understanding of matter and its reactions. Chemistry is central to many fields, including biochemistry, molecular biology, neurochemistry, chemotaxonomy, and solid-state physics.

Advances in pure chemistry are necessary to progress in applied chemistry, including such fields as polymers, petrochemicals, and chemotherapeutics. Almost all products that meet man's urgent needs depend upon chemistry. Food, clothing, shelter, transportation, and recreation involve this science at every turn.

During the last decade chemistry has been out of the spotlight as attention has been focused on atomic energy, electronics, and space. In all these activities the science has had an important though not clearly visible role. It appears that we are now to have a period of peaceful economic competition among nations. Under such conditions exploitation of chemistry's potentialities will be essential to success. Over the long haul the strongest nation will be the one which applies chemistry most effectively. The long-range interests of our nation require a strong chemical profession, and basic to this are strong chemistry departments in the universities.

The universities serve two roles; they are a source of new fundamental knowledge, and they educate. For chemistry the first function is in part filled by industry, but there is no substitute for the training function. Out of a total of 6,900 Ph.D. degrees in science and engineering given in the United States in the academic year 1960–61, 1,140 were in chemistry.

Until recently the need for federal support in chemistry was urgent but not acute. Many fellowships were supported by the universities and by industry. Costs of supplies and equipment were comparatively modest. This is no longer true. The style of chemical research has changed. Today's well-equipped laboratory is a maze of electronic gear. There is now a critical need for modern instruments and equipment in university chemistry laboratories. These must be provided if training and research are to be geared to the future and not to the past.

In the light of the importance of chemistry and the number of students being trained, a fraction approaching one-sixth of the total support for basic research should go to chemistry. But this does not happen. Out of a budget of $322 million in fiscal 1963, the National Science Foundation devoted $9.5 million to chemistry. During this time total government support of basic research in chemistry in universities amounted to about $37,800,000. In the same period the space agency was providing more than $500 million for research in space, and another $3.2 billion for development work. In fiscal 1964 NSF support for chemistry is scheduled to decline, while support for NASA has increased more than 30 percent. This disparate treatment of what is essential and what is glamorous points up a weakness in federal support of research. With growing international competition we cannot afford to be prodigal in our financial or intellectual expenditures. We must find better mechanisms for allocating our investments in the future if we are to have a future.—PHILIP H. ABELSON