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## National Institutes of Health, Alma Mater

Hundreds of us came to the first alumni reunion of the National Institutes of Health because the NIH, more than any college or university, had profoundly shaped our scientific lives and because we were concerned for its future. It is an institution of such unique quality, and of such importance for the training of future generations of scientists and for the health and welfare of our society, that we must do everything possible to preserve its vigor.

The NIH has been recognized for its achievements in two areas: intramural research and guidance of extramural grants and training programs.

In the past 25 years no single institution has so dominated the journals of basic medical science, and some of these contributions have been of stellar magnitude. The extramural grants and training programs have been the single most important foundation for the biological revolution of the postwar period. Guided initially by NIH scientists, the peer review system for awarding grants and fellowships has administered tens of billions of dollars with a scrupulous regard for quality and without a hint of chicanery. I know of no government program of this magnitude with such a magnificent record.

Less recognized, but of equal rank with these two facets of NIH activities, is the training of scientists at the NIH. In the untrammelled setting of well-equipped, well-directed laboratories, several thousand young M.D.'s and Ph.D.'s were introduced to professional science. Some remained at the NIH. Some entered other government laboratories. But the vast majority left to staff research, clinical, and administrative departments throughout the world. Today they staff and, as professors, chairmen, and deans, direct the finest university departments and schools of basic medical science and clinical science. Today they are the clinicians in the leading hospitals, and the research directors of the foremost pharmaceutical companies. They bring a novel outlook from their training in basic biological and chemical sciences to the lecture hall, laboratory, bedside, and industry. The NIH is truly a National University of Health.

The reunion was convened not only to recall the past and present achievements of the NIH, but to express our concern for its future. Despite its superb record, and its dedication to science and the conquest of human disease, the NIH is being subjected to severe criticism. Unfortunately, the NIH has grown to a size that makes it vulnerable, although much of this growth was due to public health programs imposed upon it. The enlarged budget is an obvious target for budget cutting and for antiscience forces. As with all worthwhile things the struggle for survival is never won. This is even more true for support of science than for other institutions in society.

Funds for basic research by excellent scientists at the NIH and elsewhere have been cut at a time when inflation and advanced technology call for increases. It cannot be for reasons of sound economy. We invest in medical research only about 3 percent of the gross product of a \$100 billion health industry. There is no industry based on technology today that spends less than 5 percent of its product on research and development.

The lifeline of medicine has been and will remain science and technology. When medicine grapples with the unknown, the art of witchcraft eventually supervenes. In the future, medicine must become more reliant on science and technology, not less so.

No one person or committee planned the extraordinary development of the NIH today. It is a serendipitous discovery. By chance and sagacity we have an institution of the greatest value for the health of our society. Had we had the good sense to develop national institutes of comparable stature in agriculture and energy resources, many of our present problems would be less serious. In the Bicentennial Year spirit let us celebrate and preserve the NIH as a great national institution.—ARTHUR KORNBERG, *Department of Biochemistry, Stanford University, Stanford, California 94305.*

Adapted from an address delivered at the first NIH alumni reunion, Bethesda, Maryland, 19 April 1975; the address was published in *Pharos* (July 1975).