SCIENCE

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Board of Directors

CHAUNCEY D. LEAKE, Retiring President, Chairman THOMAS PARK, President Chairman PAUL M. GROSS, President Elect HARRISON BROWN DON K. PRICE HENRY EYRING ALFRED S. ROMER H. BENTLEY GLASS WILLIAM W. RUBEY MARGARET MEAD ALAN T. WATERMAN PAUL A. SCHERER, Treasurer DAEL WOLFLE, Executive Officer

Editorial Board

KONRAD	в.	KRAUSKOPF	H.	BURR	SI	EINBACH	
Edwin	М.	LERNER	Wı	LLIAM	L.	STRAUS,	JR.
PHILIP	M.	Morse	ED	WARD	L.	TATUM	

Editorial Staff

HANS NUSSBAUM Business Manager

DAEL WOLFLE Publisher

> GRAHAM DUSHANE Editor

JOSEPH TURNER Associate Editor ELLEN E. MURPHY, Assistant Editor

NANCY TEIMOURIAN, Assistant to the Editor

News: HOWARD MARGOLIS, DANIEL S. GREEN-BERG, PATRICIA D. PADDOCK

Book Reviews: SARAH S. DEES

Editorial Assistants: SUE E. BERKE, NANCY S. HAMILTON, OLIVER W. HEATWOLE, EDGAR C. RICH, JOHN E. RINGLE, CONRAD YUNG-KWAI Staff Assistants: LILLIAN HSU, MARION Y. KLINE, KAY E. KROZELY

Advertising Staff

EARL J. SCHERAGO, Director

BERNICE SCHWARTZ, Production Manager Sales: RICHARD L. CHARLES (New York, N.Y., PE 6-1858); C. RICHARD CALLIS (Old Bridge, N.J., CL 4-3680); HERBERT BURKLUND (Chicago, III., DE 7-4973); DILLENBECK-GALAVAN (LOS Angeles, Calif., DU 5-3991)

SCIENCE, now combined with THE SCIENTIF-IC MONTHLY, is published each Friday by the American Association for the Advancement of Science at National Publishing Company, Washington, D.C. SCIENCE is indexed in the Reader's Guide to Periodical Literature.

Editorial correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts. Opinions expressed by authors are their own and do not necessarily reflect the opinions of the AAAS or the institutions with which the authors are affiliated. For detailed suggestions on the preparation of manuscripts, see Science 125, 16 (4 Jan. 1957).

Advertising correspondence should be addressed to SCIENCE, Room 1740, 11 West 42 St., New York 36, N.Y.

Change of address notification should be sent to 1515 Massachusetts Ave., NW, Washington 5, D.C., 4 weeks in advance. Furnish an address label from a recent issue. Give both old and new addresses, including zone numbers.

Annual subscriptions: \$8.50; foreign postage, \$1.50; Canadian postage, 75¢. Single copies, 35¢. School year subscriptions: 9 months, \$7.00; 10 months, \$7.50. Cable address: Advancesci, Washington.

Copyright © 1961 by the American Association for the Advancement of Science.

Costly Cash

Anyone who visits the science departments of a fair sample of our most eminent universities will be impressed by the high quality of the scientists, the diversity of research projects, and the plentiful supply of the complex and expensive instruments essential to modern scientific research. But another impression is equally unavoidable: many first-class men and their instruments for research are housed in hallways partitioned off to serve as makeshift laboratories, in converted basement rooms, or in jerry-built "temporary" buildings put up during the second or even the first world war.

A complete account of the reasons for the disproportion between the support of men and equipment and the provision of adequate housing would require an extensive study of the relation between universities and the federal government and of the policies that govern expenditure of funds for research from public and private sources. In its main outlines, however, the explanation is at hand. During World War II the federal government began to assume major responsibility for the support of research in educational institutions, through the Office of Scientific Research and Development. This support has since been continued by a number of successor agencies. The most general practice is for the agencies to provide support for research projects and training-support that includes funds for technical assistants and for equipment but not for laboratory space. Funds for new buildings for scientific or medical research can be obtained only on a matching basis. And it is here that the account becomes complicated. One reason universities find it so difficult to find matching funds for buildings is, paradoxically, that the grants for project research do not provide enough money to pay the indirect costs.

In a recent study at Harvard, one of 23 now under way with the support of the Carnegie Foundation for the Advancement of Teaching, it was estimated that while spending \$11.9 millions of federal funds for project research, the university incurred an obligation for unreimbursed indirect costs of \$687,000.

On the basis of a formula worked out by the U.S. Bureau of the Budget, Harvard determined that 28.5 percent of the total costs was an allowable charge for indirect costs on research projects. Some federal agencies paid this amount, but HEW is limited by law to a 15-percent charge for overhead, and the NSF has only recently gone from 15 to 20 percent. Every research grant accepted thus cuts into the general funds that might be used for matching grants or, so far as that goes, for operating university departments outside the sciences.

According to the Harvard study there are additional matters for concern: the concentration of research money in only a few institutions; the threat to the balance between the humanities and the sciences; and the heavy emphasis on research at the expense of teaching.

Piecemeal support by diverse federal agencies means that no agency considers the effects of its operations on higher education as a whole. What is the proper formula for indirect costs? When the Carnegie-supported studies of the relation of the 23 universities to the federal government are completed, government and the universities can better appraise their joint responsibilities for education and research, and for bricks and mortar.—G.DuS.