SCIENCE

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Science serves its readers as a forum for the presentation and discussion of important issues related to the ad-vancement of science, including the presentation of mi-nority or conflicting points of view, rather than by pub-lishing only material on which a consensus has been reached. Accordingly, all articles published in *Science* including editorials, news and comment, and book re-views—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

Editorial Board

1978: Richard E. Balzhiser, James F. Crow, Hans Landsberg, Edward Ney, Frank W. Putnam, Maxine Singer, Paul E. Waggoner, F. Karl Wil-LENBROCK

1979: E. Peter Geiduschek, Ward Goodenough, N. Bruce Hannay, Martin J. Klein, Franklin A. Long, Neal E. Miller, Jeffrey J. Wine

Publisher

WILLIAM D. CAREY

Editor

PHILIP H. ABELSON

Editorial Staff

Managing Editor ROBERT V. ORMES Assistant_Managing Editor JOHN E. RINGLE

Business Manager HANS NUSSBAUM Production Editor ELLEN E. MURPHY

News and Comment: BARBARA J. CULLITON, Editor; LUTHER J. CARTER, CONSTANCE HOLDEN, DEBORAH SHAPLEY, R. JEFFREY SMITH, NICHOLAS WADE, JOHN WALSH. Editorial Assistant, SCHERRAINE MACK

Research News: ALLEN L. HAMMOND, Editor; RICH-ARD A. KERR, GINA BARI KOLATA, JEAN L. MARX, Thomas H. Maugh II, William D. Metz, Arthur L. ROBINSON. Editorial Assistant, FANNIE GROOM

Associate Editors: Eleanore Butz, Mary Dorf-man, Sylvia Eberhart, Judith Gottlieb

Assistant Editors: CAITILIN GORDON, RUTH KUL-STAD, LOIS SCHMITT, DIANE TURKIN

Book Reviews: Katherine Livingston, Editor; Linda Heiserman, Janet Kegg

Letters: CHRISTINE KARLIK

Copy Editors: ISABELLA BOULDIN, OLIVER HEAT-WOLE

Production: NANCY HARTNAGEL, JOHN BAKER; YA LI SWIGART, ELEANOR WARNER; JEAN ROCKWOOD, LEAH RYAN, SHARON RYAN

Covers, Reprints, and Permissions: GRAYCE FINGER, Editor; CORRINE HARRIS, MARGARET LLOYD

Guide to Scientific Instruments: RICHARD SOMMER Assistant to the Editors: RICHARD SEMIKLOSE Membership Recruitment: GWENDOLYN HUDDLE

Member and Subscription Records: ANN RAGLAND Member and Subscription Records: ANN KAGLAND EDITORIAL CORRESPONDENCE: 1515 Massachu-setts Ave., NW, Washington, D.C. 2005. Area code 202. General Editorial Office, 467-4350; Book Reviews, 467-4367; Guide to Scientific Instruments, 467-4480; News and Comment, 467-4430; Reprints and Per-missions, 467-4483; Research News, 467-4321; Cable: Advancesci, Washington. For "Instructions for Contrib-utors," write the editorial office or see page xi, *Science*, 30 June 1978. 30 June 1978.

BUSINESS CORRESPONDENCE: Area Code 202. Business Office, 467-4411; Circulation, 467-4417.

Advertising Representatives

Director: EARL J. SCHERAGO Advertising Sales Manager: Richard L. Charles

Marketing Manager: HERBERT L. BURKLUND

Markeing Manager, HERBERT L. BURKLUND Sales: New YORK, N.Y. 10036: Steve Hamburger, 1515 Broadway (212-730-1050); SCOTCH PLAINS, N.J. 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); CHI-CAGO, ILL. 60611: Jack Ryan, Room 2107, 919 N. Mich-igan Ave. (312-DE-7-4973); BEVERLY HILLS, CALIF. 90211: Winn Nance, 111 N. La Cienega Blvd, (213-657-2772); DORSET, VT. 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-867-5581) ADW/EPTISING: CORPESEDONDENCE: Tarth floar

ADVERTISING CORRESPONDENCE: Tenth floor, 1515 Broadway, New York, N.Y. 10036. Phone: 212-730-1050.

Public and Private Policies for R & D

AAAS held its third annual R & D Policy Colloquium in Washington in late June. Once again, the academic and industrial sectors mingled and debated with key spokespersons from the White House, the Office of Management and Budget (OMB), and Congress. This was no public rally to wring more money out of the government's hard-pressed purse. On the contrary, the colloquium struggled with large and vexing uncertainties which pervade the many-sided structure of U.S. research and development, and the giveand-take was refreshingly frank.

The framework for the colloquium was set by the special AAAS "R & D Report" prepared by Willis Shapley and Don Phillips, analyzing President Carter's budget decisions on research and development and exploring the indicative evidence concerning industrial research and the connections between R & D and the performance of the national economy. Aside from its merits in sizing the current government mind-set toward R & D, the report provides a unified view of the disordered terrain that we like to call "science and technology policy." It is important reading.

The colloquium made several things clear. Government is now reaching for consensus approaches to national science and technology policies. There is still some life left in the system of checks and balances in the relations between politics and science. It is up to the scientific and technological communities to get into the act and help to construct the terms on which the United States will both pursue the search for knowledge and reach a less ambiguous view of the contributions of R & D to the technology base of the nation's economy. Equally clear are the risks associated with underinvestment in basic research, the confusion among public policies that promote science and others that discourage innovation, and the vulnerability of R & D as discretionary outlays in the emerging national distemper toward the high price of government.

But the colloquium suggests something else that is on the cheerful side. As we look at the federal government, in a number of ways the quality of policy management for R & D begins to be impressive. There is, at this point, an unmistakable search for a better architecture of science and technology policy, on the part of the Executive as well as Congress. We begin to see a blending of science policy with economic and budget policies, together with a definite tilt toward multiyear fiscal strategies, starting with the 1980 budget. Even in the area of science and technology indicators there is evidence not only of lively development but also of intentions to link such indicators directly to policy management. None of this signifies that public policy for science and technology has done more than turn the corner, much less that it is settled or complete. What it does indicate is that public policymakers, few of whom are at home with science, are trying very hard to cope. The White House study of the problems afflicting industrial risk-taking, in an environment of public policy uncertainty, is sufficient evidence of this.

One example of the candor displayed at the AAAS colloquium was OMB's revelation that the 1980 budget, now being scripted, will be exceedingly tight because of inflationary danger signals. Research and Development may well feel the pinch, barely 1 year after experiencing a growth budget. This exemplifies the predicament assailing the whole process of public policy-making: an itch for durable science policies on the one hand, and the mischief created by near-term discontinuities on the other. But if there is bad news, there is good news too, and it is the new awareness by government of research and development as necessary public and private investment and as very good economics. That constitutes high ground for science and technology in the long run, and it is ground that can be held.

-WILLIAM D. CAREY