cently the Park Service has been involved in attracting inner city residents to areas within the park system and is also promoting such areas as part of the nation's bicentennial celebration.

4. Annual visitation data are available from the National Park Service in *Public Use of the National Parks: A Statistical Report* (published for the periods 1904 to 1940, 1941 to 1953, 1954 to 1964, and 1960 to 1970). A monthly summary of visitation and overnight use has been published by the Park Service since September 1964 and is titled *Public Use of the National Parks*. Each issue gives totals for the month, year-to-date totals, and comparative totals with the previous year. The July issue provides fiscal year totals and the December issue contains calendar year totals.
5. Significant legislative and executive actions pertaining to the parks may be found in the following Government Printing Office publications: National Park Service, *Administrative Policies for Natural Areas of the National Park System* (1970); H. Tolson, *Laws Relating to the National Park Service, the National Parks and Monuments* (1933); T. Sullivan, *Laws Relating to the National Park Service, Supplement I* (1944); *Proclamations and Orders Relating to the National Park Service* (1947); _____ and H. Tolson, *Laws Relating to the National Park Service, Supplement II* (1963).
6. A variety of opinions may be seen in: C. Stevenson, *Reader's Digest* **66**, 45 (1955); P. Friggens, *ibid.* **82**, 190 (1971); E. Julber, *ibid.* **83**, 125 (1972); C. Wirth, *Natl. Geographic Mag.* **130**, 7 (1966); G. Hartzog, Jr., *ibid.*, p. 48; W. Williams, *ibid.* **141**, 616 (1972); D. Butcher, *Atlantic Monthly* **207**, 45 (1961); V. Huser, *Natl. Parks Conserv. Mag.* **46**, 8 (1972); L. Merriam, Jr., *ibid.*, p. 4.
7. See, *Grand Canyon National Park, Master Plan, Final Working Draft* (Government Printing Office, Washington, D.C., 1971); *Yellowstone National Park, Master Plan* (Government Printing Office, Washington, D.C., 1973); *Yosemite National Park, Master Plan, Preliminary Working Draft* (Government Printing Office, Washington, D.C., 1971).
8. From personal communications with park superintendents.
9. J. Ise, *Our National Park Policy* (Johns Hopkins Press, Baltimore, 1961).
10. U.S. Congress, House Committee on Appropriations, *Hearings Before a Subcommittee of the Committee on Appropriations*, 93rd Congress, 1st session, 1973, pp. 229, 395.
11. _____, *ibid.*, pp. 239, 378–379.
12. National Park Service, *Administrative Policies for Natural Areas of the National Park System*, appendix F.
13. W. Everhart, *The National Park Service* (Praeger, New York, 1972), p. 119.
14. Public Land Law Review Commission, a report to the President and Congress, *One Third of the Nation's Land* (Government Printing Office, Washington, D.C., 1970), p. 28.
15. Precise measures, in terms of extensive surveys, of tourist attitudes concerning development within the parks or preferred locations for facilities are generally lacking. The Outdoor Recreation Resources Review Commission in their report number 5 [*The Quality of Outdoor Recreation: As Measured by User Satisfaction* (Government Printing Office, Washington, D.C., 1962), p. 62] surveyed users of Glacier, Mount Rainier, and Rocky Mountain parks to determine if they felt the individual park was "over-developed," development was "just about right," or "underdeveloped." For Glacier, of those surveyed, 1.6 percent answered overdeveloped, 82.6 percent responded just about right, and 15.8 percent chose underdeveloped. For Mount Rainier the corresponding percents were 1.5, 67.0, and 31.4, and for Rocky Mountain they were 4.3, 78.2, and 17.4. The National Park Service plans a visitor survey of Yosemite Valley users in the summer of 1975. In a recent unpublished survey of 11 national park experts, I found that 10 experts felt that the majority of the park visitors preferred facilities within the parks and at sites near prime scenic resources [A. Fitzsimmons, thesis, University of California at Los Angeles (1975), table 29].
16. Annual appropriations, in millions of dollars, for fiscal years 1971 to 1975, were, respectively: 164, 241, 235, 294, and 343. Although total appropriations have clearly increased, there has been no appreciable increase in funds available for maintenance and construction at individual parks because of inflation, expansion of the park system, increased visitation, and spending priorities that have emphasized pollution control and the bicentennial celebration. I thank J. E. Spencer of the Department of Geography, University of California at Los Angeles, for his advice and comments.

NEWS AND COMMENT

1977 Budget: Rise in R & D Funds Includes Boost for Basic Research

In a budget in which he puts high priority on cutting the rate of growth of federal spending, President Ford has given federal science substantially more than a cost-of-inflation increase. Defense and energy R & D again get favored treatment, but Ford has also included a significant boost for basic research outside the two favored areas.

Total support for basic research would increase from about $2.4 billion in the current year to $2.6 billion in fiscal year (FY) 1977, or about 11 percent.* For the National Science Foundation (NSF), the increase would mean a rise of 20 percent in funds for basic research. The special handling of basic research, reportedly, was at least partly due to late lobbying of a receptive President Ford by Vice President Rockefeller, presidential science adviser and NSF director H. Guyford Stever, industrialist Simon Ramo, and other friends of science in good standing at the White House (see box).

One noteworthy development in the biomedical research budget is a leveling off of funds for the National Cancer Institute (NCI) after several years of very rapid growth. Funds for cancer research rose from $185 million in 1969 to about $690 million a year currently. The budget calls for an increase in FY 1977 of only $276,000 for NCI. Increased funding for NCI's parent, the National Institutes of Health, however, would total more than $93 million, with several other institutes getting larger increases in funds than at any time since the so-called war on cancer began at the start of the decade.

The usual caveat about presidential budgets should be noted. A budget is in many ways the manifestation of a hallowed federal numbers game. Budget figures are requests for funds to spend; actual expenditures are determined by congressional appropriations action and by decisions by the Administration as the fiscal year unfolds. Expenditures often vary widely from budget figures, and the variations tend to be widest when different political parties control the White House and Congress, as is now the case. It should also be remembered that at this stage the Administration is talking in global figures and that a program-by-program analysis will reveal cuts and shifts in funds which will mean disappointment for groups of researchers inside and outside of government.

The budget is always a vehicle for the exposition of a President's economic and social policies. And because this is a presidential election year, the Ford budget is being interpreted as a political document which not only defines his differences with the Democrats, but also with his rivals for his own party's nomination, notably Ronald Reagan.

The new budget is being viewed as a curtain-raiser to a contest with the Democratic-led Congress. Ford is expected to stress the fight against inflation and efforts to maintain the momentum of recovery in the economy. The Democrats indicate they will emphasize the unacceptability of high rates of unemployment. The principal issue between White House and Congress will almost certainly be the level of federal spending and the resulting deficit. The conflict is not a new one between Republican presidents and Democratic congresses, but this year the encounter will have some fresh elements, since Congress will be in the first year of the new congressional budget process which requires it to set spending maximums and to stay within them. Last year a dry run of the system provided mixed results.

An early test will occur when Congress seeks to override President Ford's veto of a $36-billion appropriations bill for the Department of Health, Education, and Welfare (HEW). The bill was passed by Congress late last year and vetoed by Ford as being "inconsistent with fiscal discipline and effective restraint on government

*Total R & D obligations, which include funds which may be spent in future years, would rise from $22.2 billion for the current fiscal year to $24.7 billion next year. Because the start of the fiscal year has been shifted to 1 October from the 1 July date which prevailed in the past, the new budget includes a 3-month "transitional quarter" with $5.5 billion earmarked for R & D activities.

growth." Ford objected to about $1 billion for a variety of programs in the bill. Despite the large Democratic majorities in both houses of Congress, last year's failures to override Ford vetoes on important issues demonstrated that it is not a "veto-proof" Congress. The HEW vote, therefore, is thought to be a significant indicator of how the "battle of the budget" will go.

Military

Defense spending is another likely cause of collision. The President is asking for an all-time record $101.1 billion for the Pentagon, with R & D slated to get $11.2 billion. There are already signs of differences similar to those last year, when Ford sought $10.6 billion in R & D funds and got about $9.9 billion. Former Defense Secretary James R. Schlesinger is gone this year, but his arguments are not forgotten. Schlesinger, a strong advocate of increased spending on both military forces and research, argued that U.S. defense spending had not kept pace with inflation and had declined as a portion of the gross national product and of the budget at a time when Soviet military power was increasing rapidly. The Administration is employing these arguments on behalf of the new budget.

In the strategic weapons category, R & D expenditures on the B-1 bomber and the Trident long-range submarine and missile system are scheduled to decline as these systems enter the production phase. Spending would increase, however, on work to improve missile warheads and to develop mobile ICBM's. Money for advanced development of the controversial cruise missile (*Science*, 7 February 1974) is also called for in the budget. Agreement in the current Strategic Arms Limitation Talks could lead to cutbacks in spending on some of these strategic weapons, but lack of progress in the talks could have an opposite effect; work on a contingency "no-SALT budget" is reportedly being done.

Energy

The next largest categorical increase in the science budget is for energy R & D. Total outlays for the energy program would rise from $7.9 billion this year to $10.4 billion in FY 1977. Some $7.7 billion of the money would go into expanding domestic energy resources, which includes expensive programs to do such things as provide loan guarantees for synthetic fuel production and expand uranium enrichment facilities. Funds for energy research, development, and demonstration would rise from $2.2 billion this year to $2.9 billion in FY 1977, primarily in the Energy Research and Development Administration (ERDA) budget.

In percentage terms, the biggest increase would come in conservation and nuclear fuel cycle and safeguards categories. These increases seem to reflect some sensitivity to complaints from Congress and outside critics that ERDA has been too perfunctory about its programs in these areas. In dollar terms, the biggest boost comes in fission reactor research, where outlays would rise from a total $522 million to $709 million. Within this category, outlays for the Liquid Metal Fast Breeder Reactor (LMFBR) would go up from $428 million to $575 million, with a major portion of the increased funds earmarked for procurement of hardware for the Clinch River LMFBR at Oak Ridge, Tennessee.

Space

While energy research is the biggest new wave in the research budget, the space program is becalmed. NASA will get a slight increase in funding for the third year straight after a steady downward slide which began in the later years of the Apollo project, but the increase is hardly enough to offset the effects of inflation. NASA's total budget is scheduled to rise by $142 million to a total $3.7 billion next year. Nearly half the budget—$1.6 billion—is tagged for support of manned space flight, principally for work on the space shuttle, the partially reusable space vehicle which is scheduled to begin flight testing in 1977. Space science funds which finance unmanned planetary exploration would drop from $496 million to $429 million, but space applications funds, which go mainly into the development of various types of research satellites, would rise from $185 million to $212 million.

NIH

The biomedical research budget, which for all intents and purposes means the NIH budget, is again the locus of the kind of complexities and confusions (*Science*, 14 February 1975) which make it hazardous

Science Policy, Budget Politics

Why in a tight budget year did things go relatively well for science? Last fall, when the bureaucracy was turning the "budget ratchet" on orders from President Ford to squeeze out funds to make his $394 billion total budget limit, there were rumors that R & D was a leading candidate for that squeeze. As it turned out, Ford chose to call for reductions in the so-called "uncontrollables"—programs which involve payments, mostly to individuals, according to formulas rather than out of specific sums set by legislation. Ford, for example, asked for cuts in the food stamp program, action to control federal spending on Medicare and Social Security programs, and for block grants to state governments which would have the effect of lowering federal expenses for programs in health and education.

According to observers involved in the budget-making process, science never became a specific target for the squeeze. The alarums raised in the scientific community last fall may well have helped. Also significant seems to have been what amounted to a consensus among Office of Management and Budget officials that basic research in particular had been getting short shrift for too long and that it was time to "turn the corner." The cause of basic research was also reportedly advanced by the efforts of Administration officials such as Rockefeller and Stever, and by unofficial advisers, such as Simon Ramo and Bell Labs president William O. Baker late in the budget process.

The decisions on science were apparently made personally and in detail by Ford, who was said to have been much more deeply involved in the budget process than any recent predecessor. The President carried the main burden of the press briefing on the budget, a task which in recent years has been performed by the OMB director, Secretary of the Treasury, and the Chairman of the Council of Economic Advisers. Ford showed a familiarity with budget ins and outs which seemed to bear out reports by OMB staff members that the President this year participated in the budget process in "incredible detail." He is said to have been the first president since Harry Truman to spend long hours with OMB assistant directors as different sections of the budget were developed.

Many scientists have been hoping that restoration of a science advisory office to the White House would aid the cause of federal R & D. Ford has said he favors such a restoration, and there is even a tentative $2.1 million in the FY 1977 Executive Office budget to finance it. But legislation recreating a White House science office hit a snag in Congress (*Science*, 16 January). Meanwhile, the science advisory office in exile at NSF seems to have gotten along rather well with OMB, and science adviser/NSF director Stever and his ad hoc helpers have not had a bad year.—J.W.

Conduct of research and development of major departments and agencies (in millions of dollars).

Department or agency	Obligations				Outlays			
	1975 actual	1976 estimate	TQ* estimate	1977 estimate	1975 actual	1976 estimate	TQ estimate	1977 estimate
Defense—military functions	8,987	9,879	2,510	11,198	9,189	9,468	2,537	10,762
National Aeronautics and Space Administration	3,088	3,473	921	3,573	3,181	3,402	877	3,550
Energy Research and Development Administration	2,071	2,812	756	3,282	1,862	2,423	643	3,042
Health, Education, and Welfare	2,395	2,369	526	2,570	2,108	2,366	578	2,512
National Science Foundation	604	628	158	726	571	602	204	647
Agriculture	424	483	123	507	418	486	136	510
Transportation	291	340	76	319	307	338	74	304
Interior	296	332	80	316	265	307	83	310
Environmental Protection Agency	258	305	87	241	207	324	83	298
Commerce	222	247	63	243	220	239	64	233
Veterans Administration	99	108	28	106	97	99	26	100
Nuclear Regulatory Commission	61	97	23	109	54	88	23	103
Housing and Urban Development	57	62	16	70	52	57	19	67
Justice	44	65	11	41	44	50	14	44
All other	126	138	35	164	124	142	37	156
Total	19,023	21,338	5,413	23,465	18,699	20,391	5,398	22,638
Total, conduct of research	6,759	7,150	1,860	7,782	6,355	7,192	1,835	7,709
Total, conduct of development	12,264	14,188	3,553	15,683	12,344	13,199	3,563	14,929

*TQ denotes 3-month "transitional quarter."

to take the budget at face value. For example, because the FY 1976 HEW appropriations bill, which contains NIH's money, is caught in the veto holding pattern, it is unclear whether the total included in the President's budget ($687 million), the amount voted by Congress ($743 million), or some entirely different figure will be the one ultimately available to NIH for the current fiscal year.

What is clear, however, is that the Administration is asking Congress to hold the line on spending on cancer research and to distribute whatever increase in money is available among other NIH institutes and activities in order to begin to redress a balance upset by the recent NCI corner on the new money market. The National Heart and Lung Institute, which is number two behind NCI, both in size of total budget and rate of recent growth, would get $38 million in new funds, the largest such increment, to bring its FY 1977 budget up to $342.9 million. The National Institute of General Medical Sciences comes next with $25 million, to bring its total up to $193 million next year, and other institutes get increases which should begin to pull them out of the financial doldrums.

NSF

A big winner does seem to be NSF. The budget calls for total obligational authority of $802 million in FY 1977, an increase of $80.4 million or 11 percent. Obligations for basic research at NSF would go to $624.9 million, up about 19.5 percent. The RANN (Research Applied to National Needs) program would be cut from $73.6 million this year to $64.9 million next year, but NSF officials hasten to note that the cuts reflect shifts of substantial energy research projects and some other minor programs out of NSF, and that RANN is alive and well and still in favor at NSF. Science education activities would again be funded at the $65 million level of this year. Science education has been going through a reappraisal and reorganization process, in part inspired by congressional criticism of the foundation's curriculum revision programs, and the steady state funding indicates that the process is continuing.

—JOHN WALSH

Health Manpower: The Feds Are Taking Over

Should medical doctors, whose education is underwritten by the taxpayers, be required to repay their fellow citizens by working for a time in underserved areas in the inner city or in the countryside? Should this nation enact some form of mandatory service, a doctor draft, in which the needs of the people are put ahead of the preferences of individual physicians? Senator Edward M. Kennedy (D–Mass.) believes fervently in mandatory service for all new doctors because not one of them, not even those who pay their own tuition without benefit of scholarship or loan, is really paying his or her own way in full—the government is footing the bill for a substantial percentage of the real cost of each doctor's education. No one, Kennedy points out, "has a Constitutional right to a medical education." Therefore, those who get one owe their country something for it.

Representative Paul G. Rogers (D–Fla.) shares the goal of getting physicians to practice in the ghetto and in rural areas where doctors are few and far between. But he is adamant in his opposition to mandatory service as a means to that end. He believes the more democratic way to go about getting doctors where he wants them is to offer generous scholarships to buy a commitment to serve—voluntary rather than mandatory service.

Kennedy, as chairman of the Senate health subcommittee, and Rogers, as chairman of the House subcommittee on health and the environment, are the two members of Congress who figure most prominently in the present debate about health manpower legislation, which is high on the list of things on the agenda for 1976. A third important figure in the manpower legislation picture is Theodore Cooper, assistant secretary for health in the Department of Health, Education, and Welfare (HEW). Cooper fought hard and successfully with the Office of Management and Budget (OMB) over controversial retrenchments the budget office wanted included in any new manpower legislation. Last September Cooper was able to sketch out the Administration's bill in testimony before Kennedy, and in December the bill