White House honors medal of science winners

President Ford presents awards at impressive ceremony, reiterates the nation's commitment to funding basic research

Presentation of the National Medal of Science awards at the White House —which was turned into a tour de force performance by the Nixon Administration in the 1973 ceremonies—was somewhat more low key this year, perhaps more in keeping with the style of the Ford Administration.

Even so, it was an altogether impressive affair, with both President Ford and Vice President Rockefeller participating: Ford, on a rather formal basis, with rather perfunctory and honorific remarks in presenting the awards; Rockefeller, on a more relaxed basis at the awards luncheon, with some off-the-cuff remarks, in addition to a prepared text.

Neither Ford nor Rockefeller offered any particularly fresh insight into what constitutes Ford Administration science policy. But both did have kind words for science and technology, in general, and for basic research, in particular. And that's important in these days of tight federal budgets and some growing disenchantment with science in Congress.

Ford carefully read prepared remarks in the East Room of the White House, which was packed with award recipients, their families, top-level officials of federal R&D agencies, a handful of House and Senate members, and others. Among other things, he said that science and technology have had a "profound influence" on the development of the U.S. and that the nation owes a "great debt" to the men and women in science and technology. He pointed out that federal funds for civilian R&D will total $7.3 billion this fiscal year, about 11% more than in fiscal 1975. And he noted that federal R&D has been "particularly responsive" in the fields of energy and environmental conservation.

"Nonetheless," he said, "the nation's commitment to that most fundamental of all inquiries—basic research—has not diminished. We recognize that it is such research that forms the base upon which all understanding in all fields of human inquiry must build. That is why we will increase basic research funding in 1976 by 11%." (See following story.)

"It is impossible to measure accurately the benefits of our research efforts to the nation and to the world," Ford added. "We do know, however, that our achievements will be far reaching and profound. We can be absolutely certain that new products and improved productivity will flow from them."

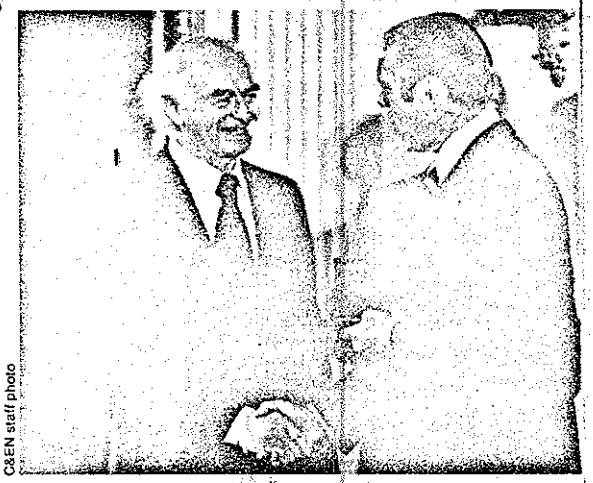
Ford then called upon Dr. H. Guyford Stever, director of the National Science Foundation and science adviser to the President, to read the citations for each awardee—Dr. Nicholass Bloembergen, Dr. Britton Chance, Dr. Erwin Chargaff, Dr. Paul J. Flory, Dr. William A. Fowler, Dr. Kurt Gödel, Dr. Rudolpf Kompfner, Dr. James Van Gundia Neel, Dr. Linus C. Pauling, Dr. Ralph B. Peck, Dr. Kenneth S. Pitzer, Dr. James A. Shannon, and Dr. Abel Wolman (C&EN, June 30, page 4). Ford presented a bronze medal to each awardee, shook the award winner's hand, and posed for photographs with the award winners both individually and collectively. And the awards ceremony was over.

At the awards luncheon at the State Dining Room, Rockefeller, who referred to himself as being "in that happy position of trying to be useful to the President as a staff assistant," spoke enthusiastically of the importance of science and technology. Rockefeller observed that "we have long honored our heroes from the field of battle and the field of sport, but today, fittingly, America honors outstanding heroes in the field of science and engineering. I think the fact the President himself personally made these awards is an indication of his feeling."

Commenting on Ford's proposal to establish an Office of Science & Technology Policy in the White House, Rockefeller said, "I was delighted last spring when the President asked me to study this question and make a recommendation as to the value of such an office. Both in terms of past experience and current need, the case was clear for a science adviser at the highest level of government. There is widespread bipartisan support for the President's proposal. And we are looking forward to favorable Congressional action."

Rockefeller observed that, "I think that we have lost a little time in the last few years, but I feel very strongly that this whole atmosphere has changed, that we are all back together, and that it can be tremendously beneficial to the people of this country as well as to the world as a whole. So I say that informally just because I am inspired by the friendly atmosphere of this meeting."

The government's organizational support of science has been matched by financial support as well, Rockefeller said, adding that "although I know that many feel it is inadequate." He hastily noted that the latter comment is "my parenthetical remark." He then went on to recite from his prepared text the same statistics as Ford concerning federal funding of civilian R&D and energy and environmental research.



C&EN staff photo

Dr. Linus C. Pauling (left) receives his bronze medal from President Ford

"The Administration also is continuing to increase support of basic research, upon which all of the scientific and technological developments depend. In 1976, funding of basic research will increase by 11%." He then departed from his prepared text, noting that "this doesn't make any comment about inflation, but that is something I just think of myself."

Returning to his prepared remarks, Rockefeller noted that "in this period when the number one concern of the American people is the economy, I cannot stress too strongly the value of science to American industry." And, "[although] we must continue to pursue the sciences that will improve our health, our environment, and our economy, we must not overlook the social and behavioral sciences that teach us about ourselves and our institutions." To which he parenthetically added, "I

Federal Alert— *new regulations*

This listing covers regulations appearing in the Federal Register *from Aug. 22 through Sept. 16. Page numbers below refer to those issues.*

PROPOSED

Environmental Protection Agency—Responds to order of U.S. Court of Appeals for the District of Columbia which directs EPA to take another look at certain of its new source performance standards for sulfuric acid plants; agency says standards should not be revised; comments by Oct. 28 (Aug. 29, page 39927).

Prescribes conditions for state issuance of experimental use permits for pesticide testing, and conditions for state registration of pesticides to meet special local needs; comments by Oct. 3 (Sept. 3, page 40545).

Federal Trade Commission—Spells out rule governing advertising and labeling of protein supplements to preclude unjust claims; comments by Nov. 7 (Sept. 5, page 41144).

Food & Drug Administration—Requests information on safety and effectiveness of all over-the-counter drugs, as part of the agency's review of claims appearing on labels of such products; comments by Oct. 28 (Aug. 27, page 28179).

Bans use of polyvinyl chloride in bottles and semirigid packaging that come in contact with food; comments by Nov. 3 (Sept. 3, page 40529).

Occupational Safety & Health Administration—Changes classification of ketones from Class II combustible liquids to Class IC flammable liquids; comments by Sept. 25 (Aug. 24, page 37233).

Requests information on safety procedures that would improve occupational safety and health standards—for instance, warning devices, worker training recommendations; comments by Nov. 26 (Aug. 28, page 39538).

Invites comments on environmental impact of proposed standards on coke oven emissions—for instance, effect of emissions on air quality in the vicinity and health of surrounding population; comments by Sept. 30 (Sept. 9, page 41797).

FINAL

Environmental Protection Agency—Issues economic impact analysis of its pesticide regulations (Aug. 22, page 36798).

Food & Drug Administration—Tells of availability of literature on several food ingredients which are generally recognized as safe (GRAS), and announces scheduling of public hearings on the substances; substances include calcium salts, calcium oxide and calcium hydroxide, carbonates and bicarbonates, dextrin and corn dextrin, glycerin and glycerides, succinic acid, dextrans; requests for participation at hearings by Sept. 29 (Aug. 29, page 39917).

must say I agree very strongly with that paragraph."

Finally, Rockefeller said that "we have to support and develop improved science and education to assure a continuing flow of new talent into the world of science, and to prepare a citizenry which is scientifically literate in a world so dependent on science."

After observing to the 200 or so persons at the luncheon that "this is a very friendly meeting," Rockefeller said, "I thank you very much. Best of luck. Thank you," and left. Whereupon those remaining consumed their chicken kiev, green beans, etc., and emerged about an hour later from the heady atmosphere of the State Dining Room into a drenching Washington downpour that was altogether sobering.

Fred H. Zerkel, C&EN Washington

Congress takes knife to federal R&D budget

President Ford's promise of increased spending for federal R&D programs, outlined in his January budget, isn't being fulfilled by Congress. Indeed, the House and the Senate recently have completed action on a number of 1976 budget bills and with few exceptions, such as the National Cancer Institute, 1976 funding for federal agencies at best will barely keep up with inflation (expected to be about 9%) and at worst actually will decline from 1975 spending levels.

Differences between the House and Senate budget bills still must be settled by a conference committee. Usually, however, the conference committee adds the two differing figures together and divides the sum by two to arrive at final spending levels.

The Environmental Protection Agency is one agency whose R&D funding has been hit. The House has approved an overall spending level of $768.5 million for EPA in fiscal 1976. This represents an increase of $25.7 million, or 3.4%, over the Administration's budget request. The Senate would like to hold overall spending to $766.5 million. But both branches of Congress have cut EPA's requested funding for energy R&D $12 million to a $100 million level. And they increased funding for other R&D activities to $170.7 million. In fiscal 1975 such spending amounted to $170.6 million.

The budget request for the National Aeronautics & Space Administration was cut $49.4 million by the House to $2.268 billion—still an increase of 14% over 1975 funding. The Senate voted to increase the House figure $56.4 million, restoring $48.4 million for preparation for two space shots to Venus in 1978 and $1 million for a large space telescope. The Senate also doubled the House figure of $7 million for upper atmosphere R&D, with emphasis on monitoring the stratospheric ozone.

The House cut NSF's budget request 6.2% to $707.1 million, a decrease of $4 million from 1975 spending levels. Most of the House cut, $35 million, came in science research project support. But the Senate Appropriations Committee, saying in its report on the spending bill that "funding basic research in the 'hard sciences' is NSF's most important responsibility," voted to restore $17 million in this area and directed that the remaining funding cut be applied most heavily in the area of social science research project support. The full Senate went along with the House in appropriating $59 million for the National Research Centers, but added $5 million to the House figure of $60 million for NSF's Research Applied to National Needs program. Of this latter amount, $24 million is earmarked for environmental research.

Other federal R&D agencies also are barely keeping their heads above water. Funding for the National Oceanic & Atmospheric Administration was set by the Senate at $501.3 million, an increase of 11% over 1975 levels, and by the House at $490 million, up 9.3%. The Administration had requested $499.4 million. And the Senate-approved budget for the National Bureau of Standards is $64 million. This amount is only $33,000 more than 1975 funding levels and is $279,000 below the amount requested by the Administration. The House approved even less money for NBS—$62.5 million.

On the other hand, funding for health research is increasing much faster than the rate of inflation. The Administration wanted to decrease spending by the National Cancer Institute $81.7 million in fiscal 1976, requesting only $587.5 million for NCI. However, the House approved spending $703 million and the Senate figure was even higher, $803 million. Overall funding for the National Institutes of Health was set at about $2.15 billion by both the House and the Senate.

So far, only the House has completed action on the Energy Research & Development Administration's appropriations bill. Under the House bill ERDA would spend $3.9 billion in fiscal 1976. This is an increase of 21% over 1975 spending, but is $7 million less than the Administration requested. Funding for solar energy programs is set at $137 million, with $73.9 million specifically earmarked for R&D; geothermal programs get $33.4 million; and physical research programs get $315.5 million. The House cut $43 million from the Administration's request for fission programs, to a $400.6 million level, but added $20 million to the fusion research request, to a $140 million level. Judging by past actions, it's likely that the Senate figures will be somewhat higher than the House's, so ERDA should have a sizable budget increase in fiscal 1976.

Janice R. Long, C&EN Washington

extra stringent measure. Estimates of the cost of implementing S. 776 range from Dow Chemical's $2 billion, to the Manufacturing Chemists Association's $358 million to $1.3 billion, to the Environmental Protection Agency's $80 million to $140 million.

The Senate Commerce Committee has been meeting for weeks on an irregular basis for marking up a toxic substances bill. And apparently unsatiated by the mountain of testimony that has accumulated on toxic substances legislation over the past several years, the committee now intends to hold additional hearings Oct. 21. After that, apparently, the committee will renew its efforts to crank out a bill.

In the House, the Subcommittee on Consumer Protection & Finance has concluded hearings on toxic substances but hasn't started marking up a subcommittee bill. Nor has it set a date to begin markup, although a committee staffer indicates markup may begin by late November. Foot-dragging by either or both House and Senate committees clearly could result in the haggling over toxic substances control legislation spilling over into yet another session.

One piece of environmental legislation that apparently will be enacted before the end of the first session is concerned with alleged depletion of the earth's ozone layer by chlorofluorocarbons. In essence, both S. 1982 and H.R. 3118 provide for a one-year study of the effects of the chemicals on the atmosphere and a limit or ban on their manufacture if a dangerous effect is found. Enactment appears to hinge on how fast the legislation grinds its way through the Congressional process.

Legislation to extend the federal pesticide control law also stands a good chance of enactment by the end of the first session. However, unhappiness with the way the Environmental Protection Agency has been implementing the pesticide control law has resulted in the law's being extended only on an interim basis. Among other things, heated controversy has developed over the amount of attention paid to the concerns of the agricultural community in regulating pesticides. Current thinking is to extend the law for one year rather than several years.

The upshot of whether a bill does or doesn't get enacted by the end of the first session is that measures carried over get caught up in the more highly politically charged second session. Next year is a Presidential election year. And all House and one third of the Senate seats are up for re-election. That always changes things. Attempts by Democrats and Republicans to one up each other for the favors of the electorate result in either the legislative process's being generally stagnated or in legislation being enacted that during less politically charged times would not be and vice versa.

Fred H. Zerkel and Janice R. Long, C&EN Washington

Technology transfer plan aims at schools

The Federal Council for Science & Technology has come up with a plan for speeding and increasing the transfer of technology from universities to industry. Basically, the plan, developed by the council's ad hoc committee on university patent policy, calls for a governmentwide policy of allowing universities to obtain patents on inventions developed under government contracts and grants. Three agencies already have patent policies similar to the subcommittee's plan.

But the subcommittee expects that extending its policy to all federal agencies will have far-reaching results. First, by giving universities the right to grant licenses to their technology, industries are provided with at least some assurance that any investment they make to commercialize that technology will be protected. That's a factor the subcommittee considers critical to the technology transfer process. Industry usually must make a substantial investment to bring university inventions to the market place since, the subcommittee points out, inventions arising from university research at best involve compositions of matter with no clear utility, prototype devices, or processes that have been tested only in the laboratory.

Second, the ability to grant licenses will create the necessary incentive to induce universities to seek actively industrial development of their inventions by allowing the universities to retain the royalty income generated from their patents. This income, the subcommittee says, should first be used to cover the costs of administering the technology transfer program and to provide an incentive awards program for inventors whose inventions reach the market place. But universities would be free to spend the rest of the money for other educational and scientific research programs.

However, not all universities would be eligible for the right to license their inventions. According to the subcommittee, the government should enter into Institutional Patent Agreements (IPA) only with those universities that have an established technology transfer program. Such a program should at least include a formal patent policy administered on a continuous basis by an officer or organization responsible to the institution, a program for obtaining patents on inventions, a system for licensing and marketing inventions, and assurance that university employees will be legally obligated to assign to the institution or the government any inventions made under government contracts or grants.

Even when obtained, an IPA would not give a university a wholesale license to do whatever it wants with its inventions. The subcommittee recommends that such agreements include provisions requiring prompt reporting of all inventions to the applicable federal agency and decision as to acquiring patent rights, enabling the agency to exempt individual contracts or grants from the operation of the agreement, prohibiting assignment of inventions without government approval, and permitting termination for convenience of either party upon 30 days' written notice.

Further, licenses granted by universities normally would have to be nonexclusive. An exclusive license could be granted only when the desired commercial application is not likely to be "expeditiously" achieved without it. Exclusive licenses would be limited to a period not substantially greater than necessary to provide the incentive for bringing the invention to the point of commercial application and to permit the company involved to recoup both its costs and to make a reasonable profit.

Changing the government's patent policy alone is not enough to accelerate the technology transfer process, the subcommittee says. There is also an acute need for universities to ensure early reporting of inventions if technology is to be transferred at an optimal rate. This could necessitate a fundamental change in attitude by the university community.

Patents, as the subcommittee points out, traditionally have been regarded by the university community as irrelevant at best, and at worst as an indication of unworthy commercial motive. As a result, very few university researchers bother even to file patent disclosure statements. The publish-or-perish syndrome also works against university efforts to transfer technology.

In the U.S. a patent application must be filed within one year of publication of the discovery and it is not uncommon at universities for patent disclosure to be made months after publication of an article describing the work. Publication before filing of a patent application also bars issuance of valid patent protection in most foreign countries, which may detract from the product the university has to offer industry.

Although the council has recommended implementation of the subcommittee's plan by all government agencies, implementation will not be accomplished overnight. The National Science Foundation, the Department of Defense and the Department of Health, Education & Welfare all now have patent policies similar to the plan. But its implementation by the Energy Research & Development Administration would require an act of Congress. And getting the other federal agencies to agree with it probably will require formation of an interagency committee and, at the least, months of discussion. □