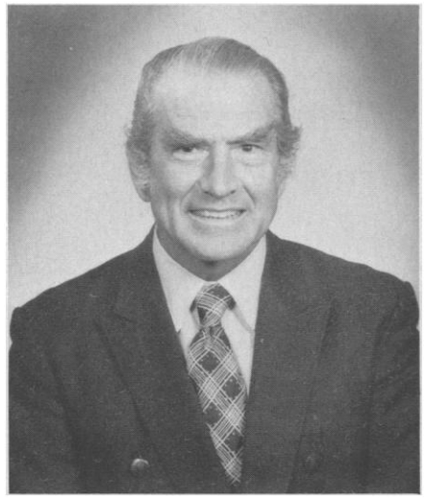
Nuclear energy is not the sole solution."

But the feature of AEI that even Peabody admits can give the impression of a pronuclear bias is the exclusive reliance of the group on the expertise of nuclear power advocates and upon Westinghouse. The board of directors, for example, includes bankers, lawyers, a rabbi, a consumer representative, and a college president. But all of its technical experts are identified with the nuclear field. And the only director not on the executive committee whose name has been mentioned in recent events is James Ramey, the longtime AEC commissioner, who was invited to the Partridge interview at Westinghouse but could not attend.

Similarly, AEI's advisory committee has experts on coal, public health, and even a researcher at the Library of Congress. But Shaw is the only advisory committee member who has attended committee meetings, participated in the Partridge interview, and has used AEI's Arlington, Virginia, office space.

The hand of Westinghouse is also evident in AEI. Several AEI advisory committee scientists are from Westinghouse. For 2 months Westinghouse loaned one of its employees, John Gordon, to the AEI staff while paying his salary, until AEI decided it should pay him. Gordon is still working at AEI.

Peabody, who became secretary of AEI early in the year, registered in May at the U.S. Capitol records office as a lobbyist for Westinghouse, on behalf of his Washington law firm, Peabody, Rivlin, and Lambert. Peabody continues with the firm



Admiral Elmo R. Zumwalt, Jr.

while holding the job of AEI's acting president on a temporary basis. He explains that his law partner, Lewis A. Rivlin, has represented Westinghouse for many years on several matters including its nuclear activities.

Explaining the involvement of nuclear experts and of Westinghouse in AEI, Peabody says, "Shapiro had a lot to do with putting this whole thing together. When anyone embarks on putting something together, who do they go to first? Their friends, their family. That's what I do in politics. Shapiro went to his friends."

Peabody is adamant that the organization should also include support and board members from the coal and gas industries and from the small, independent oil companies. Despite Kirkland's resignation from the executive committee and from the board, Peabody is also convinced of the need for labor representatives to remain involved as well.

What, after all the fuss, *does* AEI stand for? Since it has had so little time to do anything of substance, its leaders' speeches are the best guide for outsiders. Peabody's maiden speech as acting president, given on 17 September to the American Nuclear Society, repeated Zumwalt's emphasis on an immediate Apollo-style effort towards national energy self-sufficiency.

Unlike Zumwalt, however, Peabody lashed out at environmentalists, blaming them for Congress's recent delay in passing a national energy plan and saying that their crusade "has by now gone beyond the limits of even the purest reason."

Peabody also played down conservation, saying that "per se, it can only buy us time." He went farther and decried "exotic" technologies, saying that Americans were being "sold a marshmallow" if they thought "fusion, solar power, geothermal energy, oil shale, tidal power, and windmills are going to bail us out."

Policies which Peabody advocated instead were to "expedite construction of the Alaskan pipeline, offshore oil drilling, production of oil from shale, and speeding up the building of coal and nuclear power plants, as well as allowing more strip mining for coal."

It remains to be seen, in the wake of the recent turmoil in the little organization, whether it can pick up the pieces in the months to come.

—DEBORAH SHAPLEY

Pauling Gets Medal of Science: Thaw Between Scientists and White House

Signs of a new era of good feeling between the White House and the scientific community could be divined from the National Medal of Science ceremonies at the White House on 18 September. For one thing, the 13 scientists and engineers chosen for the honor included Linus C. Pauling, to whom the Nixon White House twice denied the Medal of Science apparently because of his stand against the Vietnam war and his earlier involvement in the Cold War controversies of the 1950's. For another, Vice President Nelson Rockefeller, who spoke briefly at an elaborate luncheon given for the medalists, went out of his way to indicate that the President is eager to see the position of presidential science adviser restored to the White House, and that the legislation Congress sends him on that score will be sympathetically received.

The Medal of Science ceremony, which took place at noon in the East Room of the White House, began with President Ford extolling the "spirit of science" and touching on something he knew to be close to the hearts and minds of the scientists and science administrators present—the R & D budget. In fiscal 1976, he said, federal funds for civilian R & D will rise to over $7.3 billion, up 12 percent over 1975 (in fact, a good part of the increase will be needed simply to compensate for inflation). "It is impossible to measure accurately the benefits of our research efforts to the nation and to the world," the President 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. Our nation's future and that of the world depends on the genius of men and women, such as those we honor today."

H. Guyford Stever, who now doubles as director of the National Science Foundation and as science adviser to the President, then read the citations as the President shook hands with the medalists, two of whom could not be present personally. The citation for Pauling referred to the "extraordinary scope and power of his

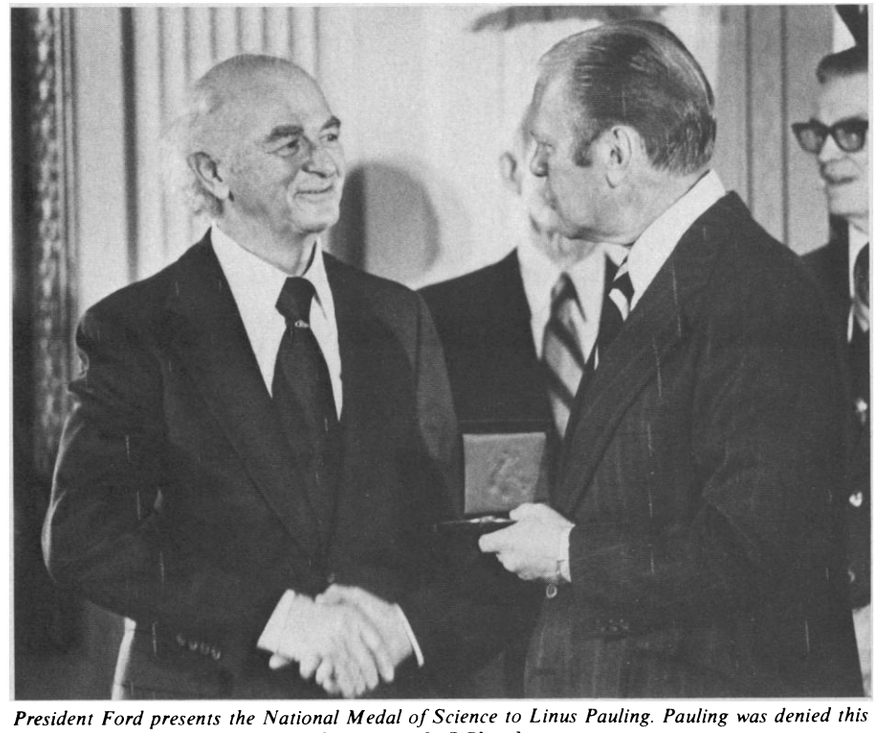
imagination, which has led to basic contributions in such diverse fields as structural chemistry and the nature of chemical bonding, molecular biology, immunology, and the nature of genetic diseases."

Pauling is a professor of chemistry at Stanford University and, at 74, is still vigorously engaged in research. He has been awarded two Nobel prizes, the first in 1954 for his work in molecular chemistry, the second in 1962 for his contributions to world peace. Because of accusations during the McCarthy era that he was a communist sympathizer, Pauling was treated with suspicion and hostility by the Eisenhower Administration, which in one instance denied him a $300,000-a-year medical research grant and in another refused to issue him a passport. Not intimidated in the least, Pauling persisted in his stringent criticism of U.S. foreign policy, and once even tried to stop nuclear testing by bringing suit against the Atomic Energy Commission and the Department of Defense.

Although Pauling continued to be an object of a special official hostility during the Nixon years, there were by then signs that the scientific community as a whole was coming to be viewed by the White House with a cold and fishy eye. Scientists were becoming increasingly prominent in the anti-Vietnam war effort, and this evidently bothered Richard Nixon even more than it had Lyndon Johnson during the final years of the latter's presidency. In any case, the annual presentation of National Medal of Science awards, first made in 1962 by President Kennedy and made each year thereafter through 1970, was interrupted by President Nixon. No awards were made in 1971 or 1972. There was an awards presentation in 1973, but it was marked by an unusual caution—some recipients of the medal told friends that the White House had sounded them out before their selection to make sure the medal would not be rejected. This was the year, incidentally, that Nixon abolished the President's Science Advisory Committee, the Office of Science and Technology, and the position of White House science adviser.

In those several Nixon years when the Medal of Science was conferred, the White House refused at least twice to consider Pauling for the honor even though—as a Nobel laureate—his name was prominent on the slate of candidates drawn up by the official selection committee, which the President himself appoints.

This year's 13 medalists were chosen from among 204 scientists and engineers nominated by various research and academic institutions around the country and by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The President's selection committee, which was chaired by Charles P. Slichter, a physicist at the University of Illinois, Urbana, chose a "candidate slate" of 20 names from the list of nominees.



President Ford presents the National Medal of Science to Linus Pauling. Pauling was denied this honor at least twice by the Nixon White House. [AP Photo].

Stever, who served as an ex-officio member of the selection committee, was also involved in the final screening process at the White House. In commenting on this year's awards prior to the ceremony, Stever told a reporter that the President had personally "ticked off Pauling's name." Stever added: "I think the award is part of a mood of conciliation throughout our nation, not only with respect to scientists but with a lot of others. This is an important time in our history to bring our people together. We disagree on politics pretty strongly at times, but science is science, and what Pauling has done in science has been of importance to all the people of the world."

Besides Pauling, the other new medalists—listed here together with their disciplines and present institutions—were Nicholaas Bloembergen, applied physics, Harvard; Britton Chance, biophysics, University of Pennsylvania and the Johnson Research Foundation; Erwin Chargaff, biochemistry, College of Physicians and Surgeons, Columbia University; Paul John Flory, chemistry, Stanford; William Alfred Fowler, physics, California Institute of Technology; Kurt Gödel, mathematics, Institute for Advanced Study, Princeton; Rudolf Kompfner, advanced communications, Bell Telephone Laboratories; James Van Gundia Neel, genetics, University of Michigan Medical School; Ralph Brazelton Peck, soil mechanics (Peck is an engineering consultant in Albuquerque, New Mexico); Kenneth Sanborn Pitzer, chemistry, University of California, Berkeley; James Augustine Shannon, biomedical research, Rockefeller University; and Abel Wolman, professor emeritus of sanitary engineering, Johns Hopkins University.

Science Adviser Legislation

An aide to Stever confirmed that, as Vice President Rockefeller had indicated, there does not at this point appear to be any major differences between the White House and Congress with respect to the legislation to restore the office of White House science adviser. In the course of discussions over the summer between Administration representatives and leaders and staff of the House Committee on Science and Technology, two specific issues seem to have been settled.

The White House has come around to accept the congressional view that appointment of a new science adviser should be subject to Senate confirmation. And, for their part, Representative Olin Teague (D–Tex.) and Representative Charles Mosher (R–Ohio), who are respectively the chairman and ranking minority member of the House committee, have assured the White House that it is not their intent to insist that the science adviser play anything more than an advisory role in the formulation of research and development budgets. Some early drafts of bills to establish a science

adviser in the White House have been unacceptable to the Office of Management and Budget because, under these drafts, this official would have been given a direct hand in putting R & D budgets together.

Although confirming the foregoing understandings, an aide to Representative Teague cautions that what the legislation finally contains will be up to the full Science and Technology Committee, which is expected to begin marking up the science adviser bill on 8 October. The bill seems assured of a generally friendly reception in the Senate once it is passed by the House.—LUTHER J. CARTER

International Geophysics: Science Dominates Politics

The following discussion of the meeting of the International Union of Geodesy and Geophysics was written by Philip H. Abelson, who attended as chairman of the U.S. National Committee for Geophysics. Abelson, editor of Science *and president of the Carnegie Institution of Washington, was president of the American Geophysical Union from 1972 to 1974.*

When delegates from a large number of countries assemble these days, the usual result is division and confrontation. At the recent quadrennial meeting of the World Meteorological Organization, 28 April to 25 May, for example, South Africa was expelled and the Palestine Liberation Organization was invited to sit as observers. The international scientific unions are not guaranteed immunity from actions of this kind. Thus, when 3000 scientists attended the recent meeting of the International Union of Geodesy and Geophysics (IUGG) at Grenoble (25 August to 6 September), the occasion might well have provided manifestations of some types of politization.

If such a development were to occur, one might expect it to appear early in the meeting of the IUGG, which has a spectrum of 76 member countries. The Union deals with topics relevant to such problems as resources, development, natural hazards, and pollution, which are politically sensitive. But although there was much politicking at the meeting in Grenoble, it was largely confined to Union organizational matters and the meeting will be remembered for its scientific content, not for the politics.

One aspect of the meeting with implicit political significance, though, was the behavior of the Soviets. The standard practice of the Russians is to participate in the planning of international scientific meetings and to submit titles and abstracts for them. Almost invariably, however, a substantial fraction of their participation is canceled at the last moment and after the program has been set. On this occasion the customary practice was followed, but the absences were more extensive than usual. More than half of those scheduled to make presentations did not appear, including some conveners of sessions. In symposia in which many Russians were expected to participate their absence made a shambles out of schedules, leading to much adverse comment. It was also noted that the Russian delegation seemed to be weighted toward politically reliable types, a situation reminiscent of earlier Cold War times. Insofar as reasons were given for the absences, they were the old threadbare excuses of illness or the comparatively new one of lack of money. We were told that the Russian Academy of Sciences was temporarily broke and that half of the Russians who actually arrived came using their personal funds. However, talks with eastern Europeans and with Westerners who have recently been in the Soviet Union made it seem likely that the real problem was tighter criteria of political reliability. One such source quoted a very competent young Russian geophysicist as saying, "I will never be allowed to attend a meeting outside of this country. I am too long in the tongue."

There was a sharp contrast in the numbers and character of the U.S. and U.S.S.R. delegations. Among the fewer than 100 Russians who were registered, there were virtually none younger than 40. Of the 600 Americans, about half were below that age. Among the Americans could be seen the future leaders of geophysics, but the coming generation of Russian geophysicists was missing.

For Americans the cost of attending the 13-day meeting was $1000 to $1500 each—a substantial sum in days of tight budgets. A small but significant number met part or all of this cost personally. About a third of the delegates were employees of federal agencies that paid the costs. About half were there on research grant funds. In addition, the National Science Foundation provided $30,000, which was administered by the American Geophysical Union. This was split so that 75 scientists received about $400 each. The 75 were chosen largely on the basis of youth and promising potential. Senior scientists were expected to fend for themselves.

Because many aspects of geophysics treat the whole earth, including its oceans and atmosphere, and outer space, incentives exist for various kinds of international cooperation. Obvious mutual benefits are derived from cooperation among meteorologists, and further improvements will come from such international undertakings as the Global Atmospheric Research Program. Research in oceanography has increasing international implications, which are tied into the law of the sea. Seismologists monitoring earthquakes and gathering evidence concerning the deep structure of the earth are dependent on good global interchange of information. The IUGG was organized to facilitate such cooperation. It has major meetings every 4 years at which officers for the Union are elected. At the same time, the seven component associations of the Union also elect the officers who will guide their affairs for the next 4 years. In the long 4-year interval between general assemblies of the Union, the officers (there are some 70 in all) provide continuity.

Many scientists, immersed in their research, regard election to such offices as a trifling honor. However, others find the positions worth seeking. They can help shape the development of their branch of science, and their status assists them in operating internationally. Each of the associations has limited but useful funds to subsidize travel of officers. This factor is especially important to scientists from eastern Europe and from the less developed countries. For some, the holding of office represents a valued mechanism for obtaining permission to travel internationally. Thus, before the elections of officers there is considerable maneuvering. In the selection of the slate, the scientific competence of candidates and their effectiveness in administrative matters have considerable weight. However, such matters as ideological and geographical balance also have a large influence. For example, in most slates there is usually one Russian and one American. Ordinarily, U.S. delegates do not work as diligently or as skillfully at their politicking as do the other delegates. Nevertheless, about 25 percent of the offices of IUGG and its associations usually go to the United States. This was also true in the recent elections at Grenoble.

Many scientists say that the most im-